



Hilcorp Alaska, LLC

Post Office Box 244027
Anchorage, AK 99524-4027

3800 Centerpoint Drive
Suite 1400
Anchorage, AK 99503

Phone: 907/777-8300
Fax: 907/777-8301

February 23, 2023

Alaska Department of Environmental Conservation
Air Permits Program
ATTN: Application Intake
555 Cordova Street
Anchorage, AK 99501

Subject: Hilcorp Alaska, LLC – Tyonek Platform, Permit AQ0091TVP02, Rev1
Amended Air Quality Operating Permit Renewal Application

Dear Application Intake,

Hilcorp Alaska, LLC (Hilcorp) submits the enclosed amended air quality operating permit minor permit application. The amended application includes a change in ownership of the facility as well as updates to emission units, emission factors, and standard permit conditions.

Please contact Greg Arthur (907) 777-8509 or greg.arthur@hilcorp.com with any questions or concerns.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Sincerely,

A handwritten signature in blue ink that reads "Chris Kanyer".

Chris Kanyer
Asset Team Lead
Hilcorp Alaska, LLC

Enclosure

cc: EPA Region 10
[AlaskaAirCompliance](#)



TYONEK PLATFORM

Air Quality Operating Permit Renewal Application (Amended) Permit No. AQ0091TVP02, Revision 1

Prepared for: Hilcorp Alaska, LLC
Client Ref: 105.00874.23013

February 2023





TYONEK PLATFORM

Air Quality Operating Permit Renewal Application (Amended) Permit No. AQ0091TVP02, Revision 1

Prepared for:

Hilcorp Alaska, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)

P.O. Box 244027

Anchorage, AK 99524-4027

This document has been prepared by SLR International Corporation. The material and data in this report were prepared under the supervision and direction of the undersigned.

A blue ink signature of Sims Duggins, written in a cursive style, positioned above a horizontal line.

Sims Duggins
Senior Principal

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Tyonek Platform

**Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1**

HILCORP ALASKA, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)

P.O. Box 244027

Anchorage, AK 99524-4027

February 2023

FORM A1

Stationary Source (General Information)

GENERAL INFORMATION			
1. Permittee:			
Permittee Name: Hilcorp Alaska, LLC			
Mailing Address Line 1: P.O. Box 244027			
Mailing Address Line 2:			
City: Anchorage	State: AK	Zip Code: 99524	
2. Stationary Source Name: Tyonek Platform			
3. Stationary Source Physical Address:			
Physical Address Line 1:			
Physical Address Line 2:			
City: Upper Cook Inlet	State: AK	Zip Code:	
4. Location:	Latitude: 61° 04' 34.3" North	Longitude: 150° 57' 02.6" West	
5. Primary SIC Code: 1311	SIC Code Description: Crude Petroleum and Natural Gas	Primary NAICS Code (2017): 211120 - Crude Petroleum Extraction	
6. Current/Previous Title V Air Permit No.: AQ0091TVP02, Revision 1		Expiration Date: 3/31/2014	
7. Does this application contain confidential data? ☐ Yes ☒ No			
8. APPLICATION IS BEING MADE FOR:			
☐ Initial Title V Permit for this Stationary Source ☐ Modify Title V Permit (currently permitted) ☒ Title V Permit Renewal			
9. CONTACT INFORMATION (Attach additional sheets if needed)			
Owner:		Operator:	
Name/Title: Same as Permittee		Name/Title: Same as Permittee	
Mailing Address Line 1:		Mailing Address Line 1:	
Mailing Address Line 2:		Mailing Address Line 2:	
City:	State:	Zip Code:	City: State: Zip Code:
Permittee's Responsible Official:		Designated Agent:	
Name/Title: Chris Kanyer, Asset Team Lead		Name/Title: CT Corporation System	
Mailing Address Line 1: Same as Permittee		Mailing Address Line 1: 9360 Glacier Hwy, Suite 202	
Mailing Address Line 2:		Mailing Address Line 2:	
City:	State:	Zip Code:	City: Juneau State: AK Zip Code: 99801
Stationary Source and Building Contact:		Fee Contact:	
Name/Title: Greg Arthur, Air Program Lead		Name/Title: Hilcorp Accounts Payable	
Mailing Address Line 1: Same as Permittee		Mailing Address Line 1: P.O. Box 61529	
Mailing Address Line 2:		Mailing Address Line 2:	
City:	State:	Zip Code:	City: Houston State: TX Zip Code: 77208
Phone: (907) 777-8509	Email: greg.arthur@hilcorp.com	Phone: (713) 209-2400	Email:
Permit Contact:		Person or Firm that Prepared Application:	
Name/Title: Greg Arthur, Air Program Lead		Name/Title: SLR International Corporation	
Mailing Address Line 1: Same as Permittee		Mailing Address Line 1: 2700 Gambell Street	
Mailing Address Line 2:		Mailing Address Line 2: Suite 200	
City:	State:	Zip Code:	City: Anchorage State: AK Zip Code: 99503
Phone: (907) 777-8509	Email: greg.arthur@hilcorp.com	Phone: (907) 222-1112	Email: seduggins@slrconsulting.com
10. STATEMENT OF CERTIFICATION			
Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.			
Name of Responsible Official (typed): Chris Kanyer		Title: Asset Team Lead	
X Signature (blue ink): 		Date: 2/23/2023	

FORM A1-R**Stationary Source Supplemental Information or Application Revision****Permit Number:** **AQ0091TVP02**

Permit Contact:	Name	Greg Arthur
	Title	Air Program Lead
	Mailing Address Line 1	P.O. Box 244027
	Mailing Address Line 2	
	City, State, Zip	Anchorage, AK 99524
	Phone Number	(907) 777-8509
	Email	Greg.Arthur@hilcorp.com
Brief Description of Supplemental Information or Application Revision: This is an amendment to the application to renew Title V Operating Permit No. AQ0091TVP02, which was submitted to the Department on September 27, 2013. This amendment has been prepared by invitation from the Department due to the long period of time since the original renewal application was submitted and because of the change in ownership that occurred in the interim. The following are the primary amendments made to the original renewal application by this amended renewal application: • Addresses the change in ownership from ConocoPhillips Company to Hilcorp Alaska, LLC. • Updates emissions unit information. • Updates information for EU ID 25 to reflect our 12/20/22 application to revise Minor Permit AQ0091MSS03, Rev. 1. • Updates emissions calculations. • Identifies the Flare Pilots (EU ID 37) as an insignificant emissions unit. • Addresses the 2020 revisions to the Standard Permit Conditions. • Addresses stationary source-specific terms and conditions of Minor Permits AQ0091MSS03, Rev. 1 and AQ0091MSS04, which includes adding the Spartan 151 Drill Rig emissions units to the proposed permit. • Updates applicable provisions of NSPS Subpart IIII. • Updates applicable provisions of NESHAP Subpart HH. • Updates applicable provisions of NESHAP Subpart ZZZZ. • Modifies the requested non-applicable requirements permit shield.		

Statement of Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

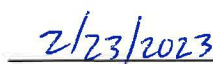
Chris Kanyer

Name of Responsible Official

Asset Team Lead

Title


Signature (blue ink)



Date

Attachment A-1

Additional Application Requirements for Sources within the Regional Haze Special Protection Area 18 AAC 50.265

Per 18 AAC 50.265, an application for a construction permit, new permit, permit renewal, or permit modification must include the following information:

18 AAC 50.265(4)(A) – Anticipated Equipment Major Maintenance Schedules

The anticipated equipment major maintenance schedules are currently unavailable.

18 AAC 50.265(4)(B) – Best Estimate of Projected Significant Emissions Unit Equipment Life, if known

The projected equipment life of each significant emissions unit located at the stationary source is currently unavailable.

18 AAC 50.265(4)(C) – Regional Haze Reasonable Further Progress Goals – Assessment of Stationary Source Impacts

The existing stationary source was included in the baseline analysis the Alaska Department of Environmental Conservation (ADEC) prepared for developing 18 AAC 50.265. According to the State Air Quality Control Plan Volume II, Section III.K.13.F, the Regional Haze Rule requires the ADEC to submit a plan to make reasonable progress towards natural visibility conditions at Class I areas. To achieve this goal, the ADEC is required to develop a long-term strategy that must “include emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress” and “identify all anthropogenic sources of visibility impairment considered by the state in developing its long-term strategy”. In developing these goals, the ADEC selected sources and considered four factors to evaluate the potential control measures for the selected sources: 1) cost of compliance; 2) time necessary for compliance; 3) energy and non-air quality environmental impacts; and 4) remaining useful life. To select sources for evaluation, the ADEC used a two-step approach. The initial step (step one) involved an area of influence (AOI) and weighted emissions potential (WEP) analysis. The final step (step two) involved a Q/d analysis (quantity of actual emissions in tons per year divided by distance in kilometers). The Tyonek Platform was eliminated from consideration for inclusion in the four-factor analysis in step one of the selection process.

18 AAC 50.265(4)(D) – Regional Haze Reasonable Further Progress Goals - Mitigation Measures to Minimize Adverse Impacts

Per the results of the process described above under our response to meet the requirements of 18 AAC 50.265(4)(C), no mitigation measures have been identified as necessary to minimize any potential adverse impacts on the reasonable further progress goals for Class I areas, as identified in the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030.

FORM A2

Stationary Source Description

Permit Number: AQ0091TVP02

1.	Stationary Source Description (a thorough description of the stationary source, its processes, raw materials, operating scenarios, and other specific information that may be necessary to determine the applicability of Title V requirements.) The information may include property area or map, number of employees, maximum capacity, and other primary emission-generating activities co-located or on adjacent properties. <u>I. Overview</u> The offshore Tyonek Platform is a production field facility used to produce, treat, and compress natural gas and transfers the gas to the Harvest pipeline for sale. The produced gas is biogenic gas generated by anaerobic bacteria in shallow source rock. The biogenic gas is comprised almost entirely of methane, with only trace amounts of other gases and no measurable quantities of organic HAP. The biogenic gas meets the definition of “natural gas” set out in 40 C.F.R. 63 Subpart HH at §63.761. The platform is located in the upper Cook Inlet, approximately 40 miles west-southwest of Anchorage, AK in 100 feet of water at mean lower low water. The platform consists of five main decks and includes facilities for natural gas production and transportation, utility systems, and crews quarters. On the platform, Hilcorp operates multiple wells, piping and equipment used to produce natural gas and to provide general operations support including: four gas-fired turbines, two gas-fired engines, two gas-fired heaters, three glycol reboilers and associated vents (i.e., TEG dehydration units), seven diesel-fired engines, two safety flares with pilots and storage vessels containing hydrocarbon liquids, produced water, distillate fuel, and other organic liquids. <u>II. Significant Process Operations</u> <i>Gas Compression System</i> The Tyonek Platform is equipped with two stages of gas compression. Low Stage (LS) and High Stage (HS) gas compression are each handled by a pair of turbine/compressors. LS compression is driven by a pair of Solar Taurus turbines; HS compression is driven by Solar Centaur turbines. The LS compressors boost gas from a header pressure of 55 psi (and declining) to an inter-stage pressure of 300 to 400 psi. The HS compressors boost the pressure to pipeline pressure, which ranges from 920 to 990 psi, with normal discharge pressure of 950 psi. All four turbines have a two-shaft engine configuration and each is subject to NSPS Subpart GG. <i>Power Generation</i> Four separate generators supply the Tyonek Platform with electrical power. The four generators can be used in any combination and are powered by either Waukesha L-7042G or Caterpillar D398 engines. All four units are located in the pressurized AC Generator Room. The platform requires 500 to 550 kw to operate normally, so two running generators are needed. Presently, the two Waukesha generator units are capable of handling the power demand and are used as the primary generator drivers, leaving the two Caterpillar units as spares. The two Waukesha units are twelve cylinder, four stroke cycle, overhead valve, spark ignition, gas fueled engines each equipped with an air-fuel ratio controller and a catalytic converter. The two Caterpillar units are twelve cylinder, compression ignition (diesel), and turbo-charged engines. Each generator engine is subject to certain provisions of NESHAP Subpart ZZZZ. <i>Glycol Heating System</i> The glycol heating system provides heat for platform space heaters and for the storage tanks by continuous circulation of a 50/50 mixture of fresh water and propylene glycol (DowFrost). Two natural gas-fired Milwaukee Boiler-Reliance 250 FL fire tube units with Power Flame Burner assemblies maintain the temperature of the fluid between 150° and 190°F. A third unit (EU ID 11) was removed in 2008. The two remaining units are not subject to any NSPS or NESHAP standards. <continued on next page>

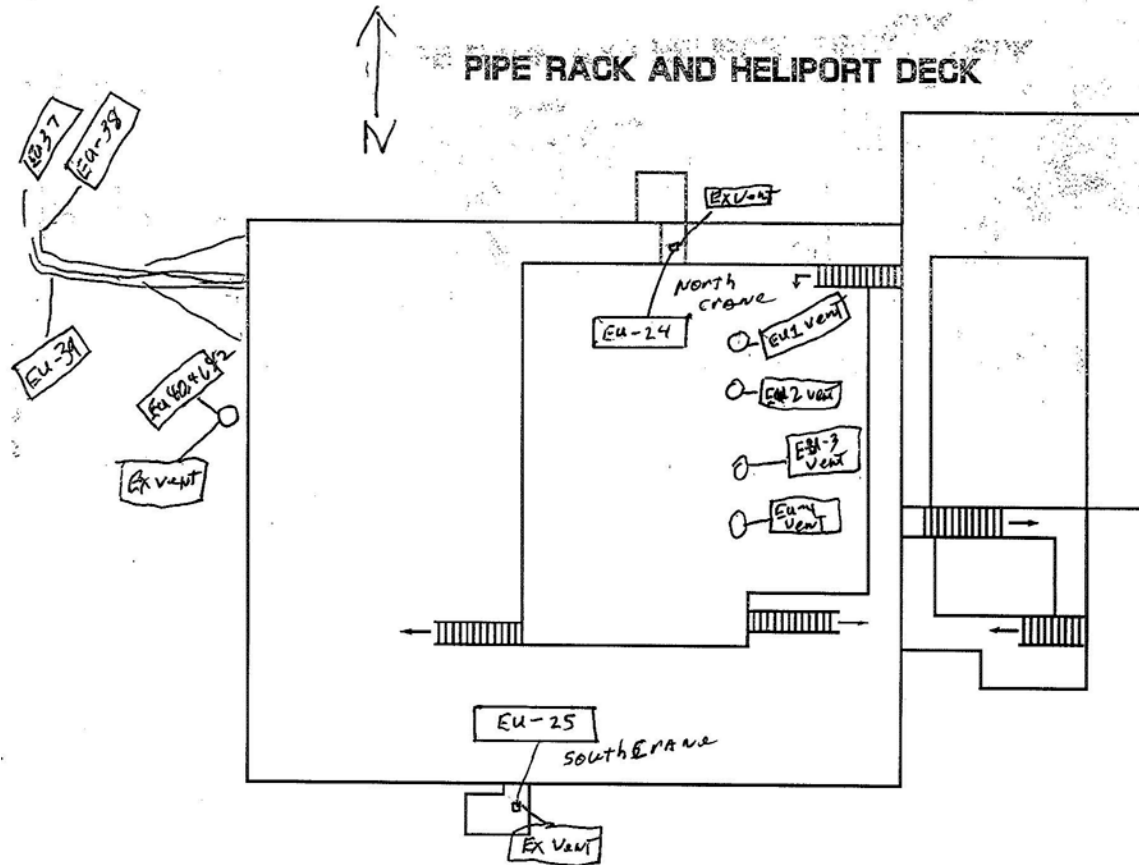
FORM A2

Stationary Source Description

	<i>Glycol Dehydration System</i> The glycol dehydration system removes water that the glycol picks up from the gas in the absorber, cleans the glycol by heat and filtration, and returns the glycol to the absorber to collect more water and repeat the cycle. Water-rich triethylene glycol (TEG) from each glycol absorber flows to one of three glycol regenerators where it is heated and the absorbed water vapor boiled off. Each regenerator includes a reboiler (designed for 275,000 BTU/hr heat transfer rate) with a packed still column. The regenerated lean (dry) TEG is cooled and pumped back into the absorber. The Tyonek Platform glycol dehydration reboiler process vents are not captured and recycled back to the gas handling process. However, HAP emissions (actual and potential to emit) from the Tyonek Platform glycol dehydration unit process vents are zero or negligible because the field gas is composed of greater than 99.9% CH₄, C₂H₆, and N₂, and there are no HAP constituents in the gas. Since there is no HAP being absorbed by the TEG liquid desiccant, no HAP is generated during regeneration of the TEG. As a result, each TEG dehydration unit is exempt from standards and provisions of 40 C.F.R. 63 NESHAP Subpart HH, excepting recordkeeping and documentation requirements set out at 40 C.F.R. §63.774(d)(1) and 40 C.F.R. §63.764(e)(1), and the general standard to operate the units at all times in a manner consistent with good air pollution control practices to minimize emissions (40 C.F.R. §63.764(j)). The Tyonek Platform produces gas that is not evolved from black oil, so the “black oil exemption” from Subpart HH does not apply. <i>Flare Systems</i> The platform has high and low-pressure relief systems for safe venting of gas during production upsets, well kickoffs, turnaround, and other special circumstances. The low-pressure relief system disposes of gas emanating from the glycol reboilers. Stripping gas and dissolved gas from the hot glycol in the reboilers is routed through TK-109 and the low-pressure knockout drum to the low-pressure flare, where it is burned. The pilot lines ensure that both the high and low pressure flares are continually burning. <i>Fire Protection Systems</i> Two fire water pumps provide salt water from Cook Inlet for fire hoses, fire monitors, and deluge systems. The pumps are driven by two four-stage Caterpillar D-3306 diesel engines rated at 231 hp, which start automatically when a fire hose or monitor is opened, causing a drop in pressure on the fire loop, or can be started manually. Each of the pump engines is test run for 30 minutes once a week. Each fire water pump engine is subject to certain provisions of NESHAP Subpart ZZZZ. <i>Cranes</i> Two pedestal cranes are used to lift equipment on and around the platform and to load/unload supply vessels. The cranes are motorized by a model year 2013 Caterpillar C9.3 engine certified as meeting Tier 4 interim nonroad engine emissions limits and a model year 2008 John Deere 6133HF485F engine certified as meeting Tier 3 nonroad engine emissions limits for that model year. Each crane engine is subject to NSPS Subpart IIII and one provision of NESHAP Subpart ZZZZ (i.e., the Subpart ZZZZ requirement is to comply with Subpart IIII).	
2.	Nonattainment area [yes/no; if yes, specify]	No
3.	Does the CAM rule [40 CFR Part 64] apply to any of the emissions units? [If yes, review the guidance provided for CAM in the Form A2 instructions for this item.]	No
4.	Does the accidental release prevention regulation [40 CFR Part 68] apply to the facility? [If yes, provide the appropriate regulatory applicability document in detail.]	No

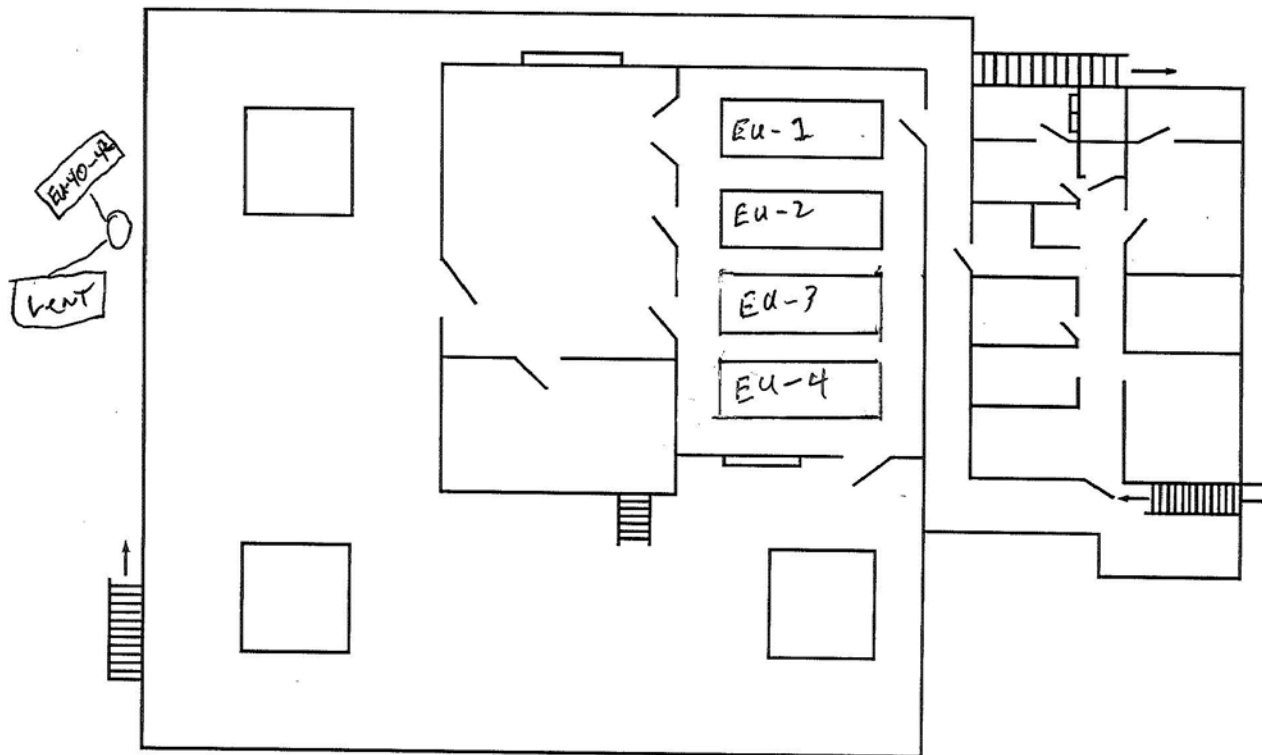
5. **Attach plot plan.** ← See pages A2-1 through A2-5 (plot plans) and A2-6 (aerial photo)
6. **Attach regional map.** ← See attached
7. **Attach USGS map.** ← See attached

Tyonek Platform
Renewal Application for Permit No. AQ0091TVP02
Detailed Plot Plan (Layer 1)

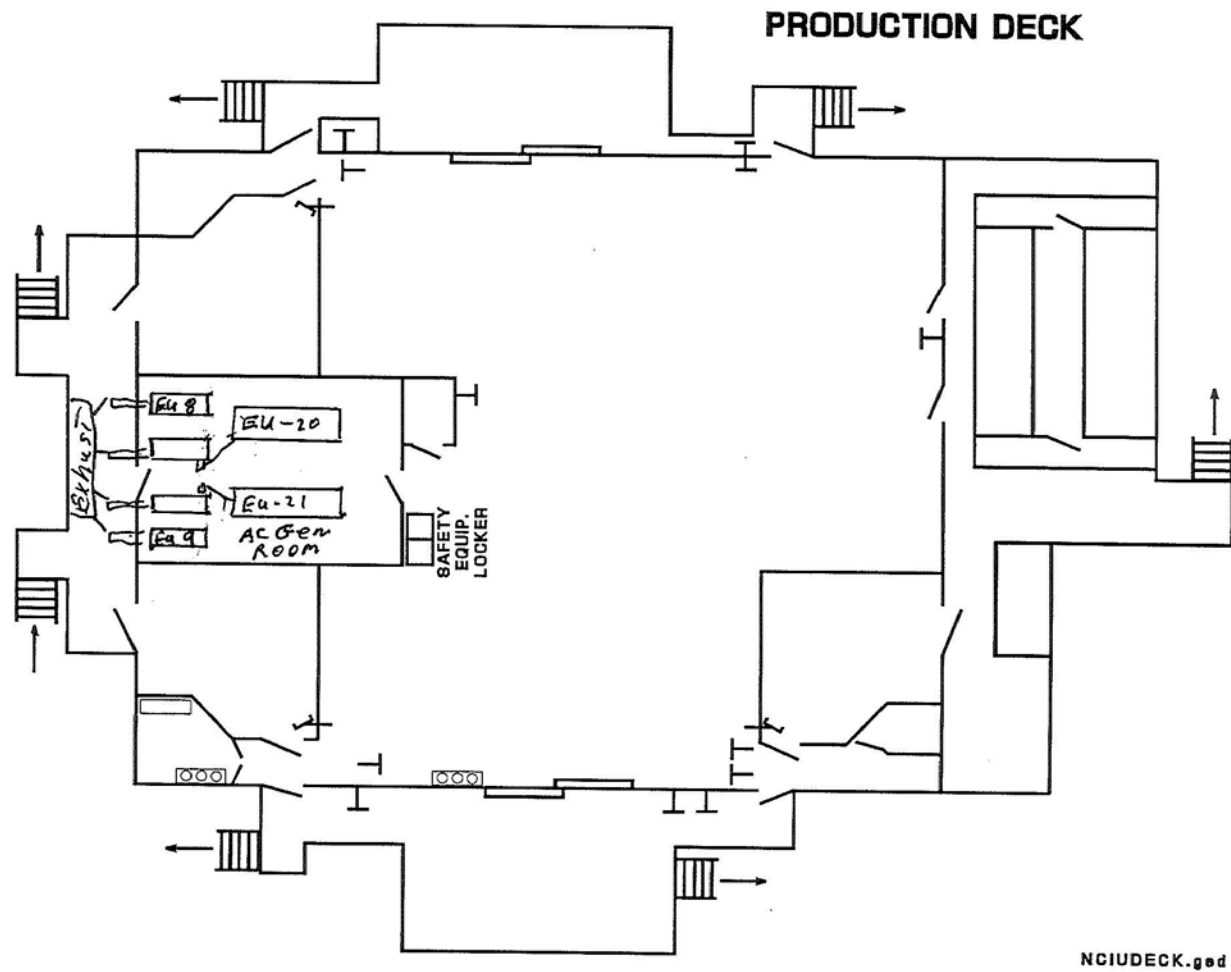


Tyonek Platform
Renewal Application for Permit No. AQ0091TVP02
Detailed Plot Plan (Layer 2)

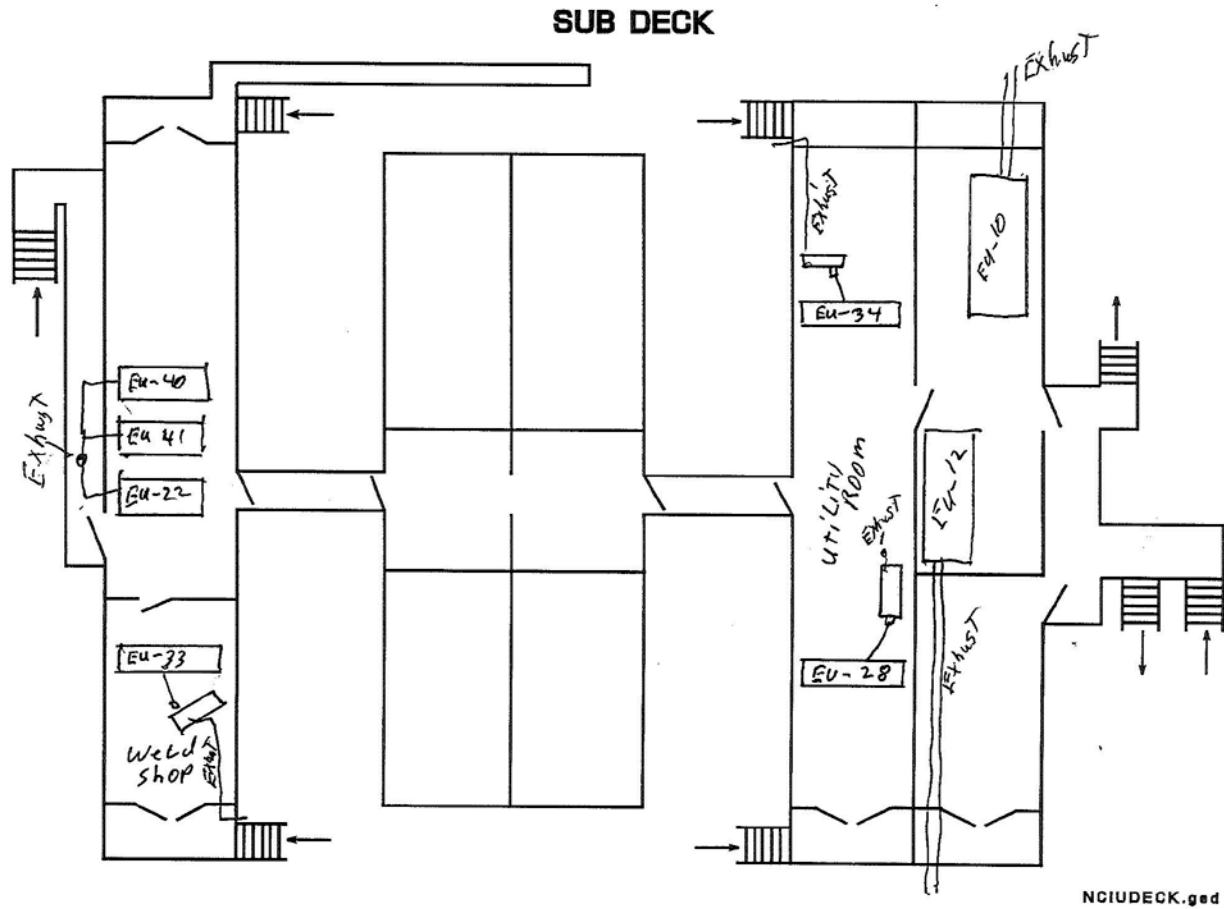
DRILLING DECK



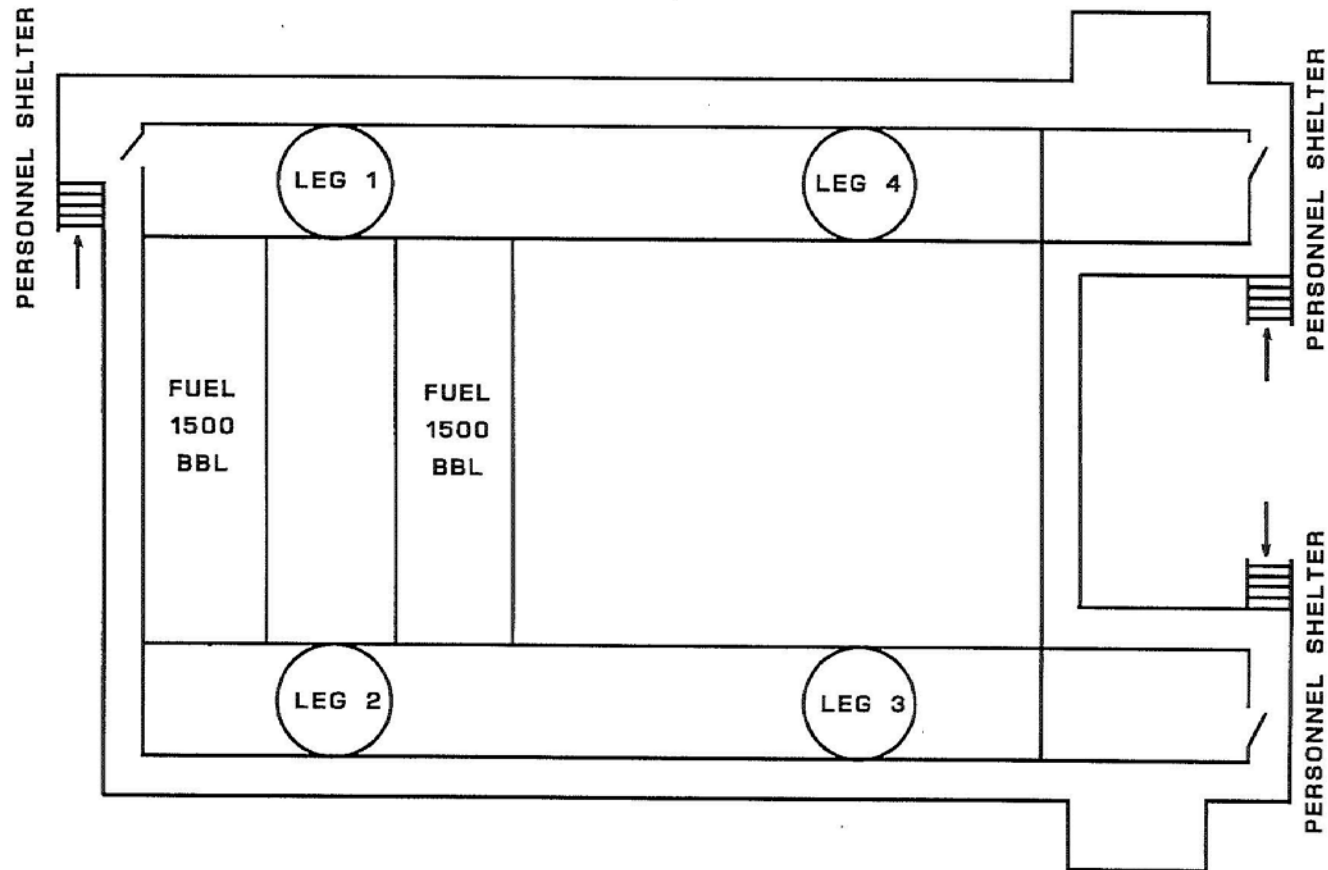
Tyonek Platform
Renewal Application for Permit No. AQ0091TVP02
Detailed Plot Plan (Layer 3)



Tyonek Platform
Renewal Application for Permit No. AQ0091TVP02
Detailed Plot Plan (Layer 4)



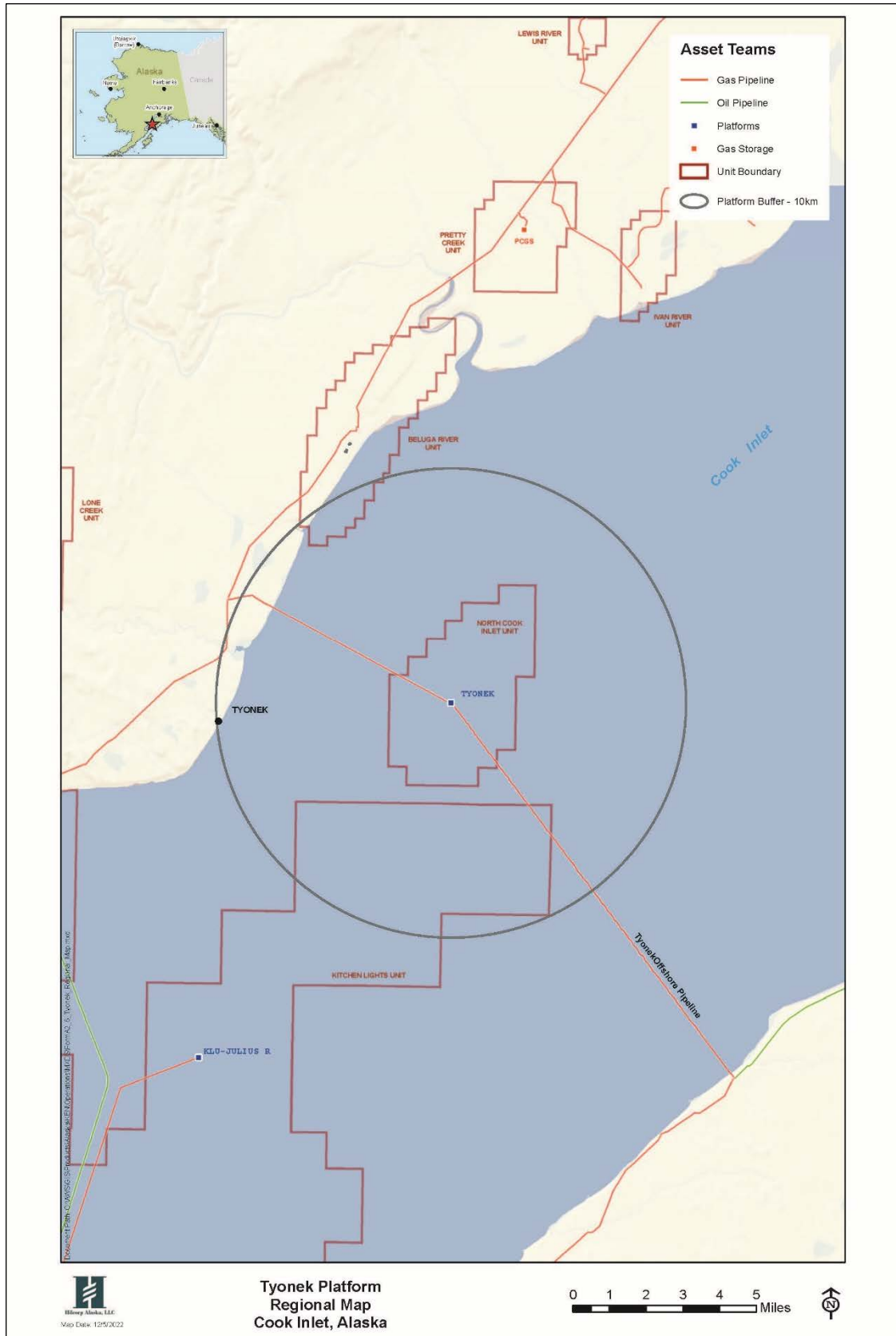
Tyonek Platform
Renewal Application for Permit No. AQ0091TVP02
Detailed Plot Plan (Layer 5)
GIRDER DECK

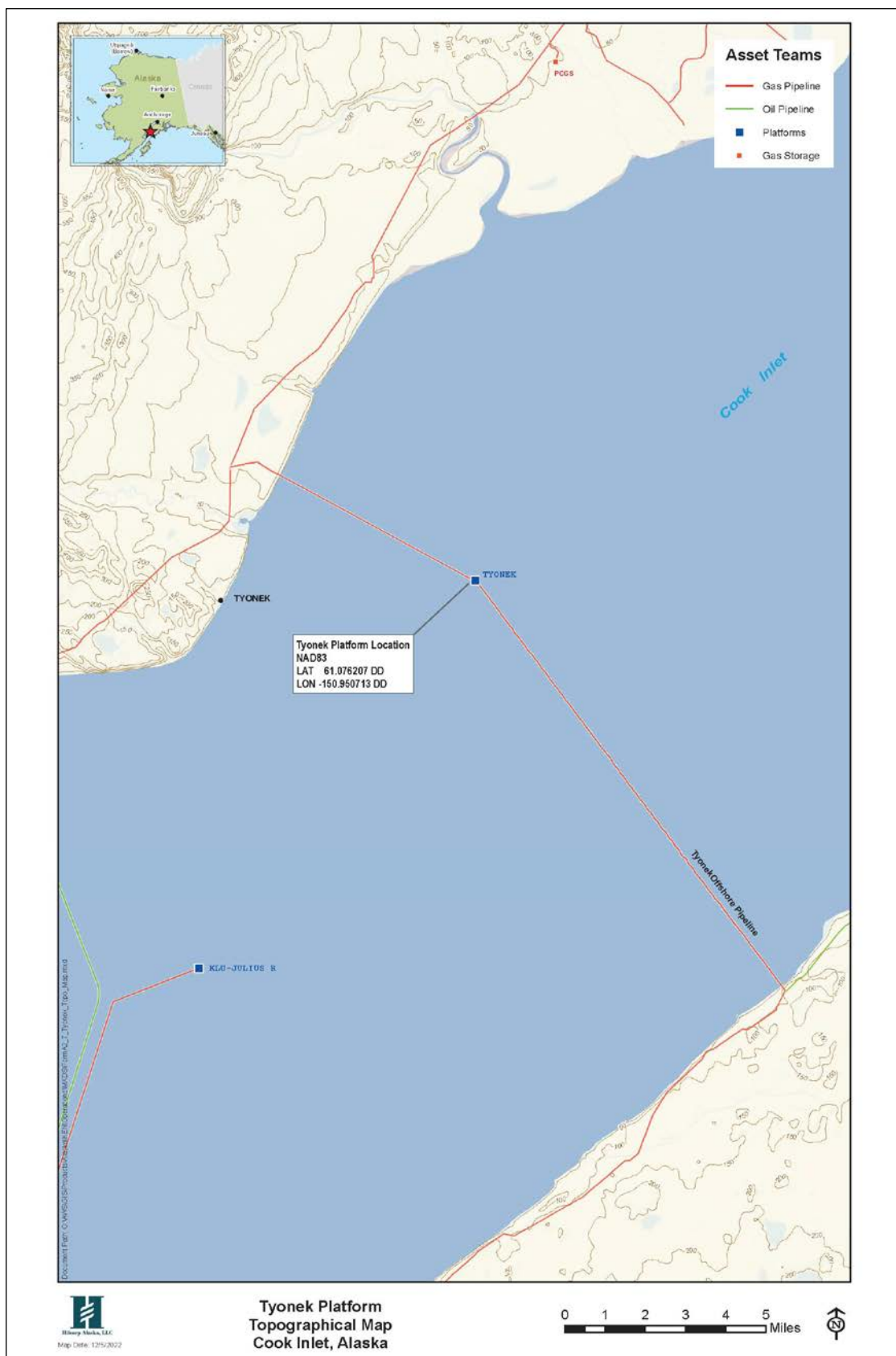


**Cook Inlet Tyonek Platform
Renewal Application for Permit No. AQ0091TVP02
Aerial Photo**



Cook Inlet Tyonek Platform Renewal Application for Permit No. AQ0091TVP02 Regional Map





1.	Operating scenario ID	1
2.	Operating scenario description: There is only one operating scenario. Relevant information is found in the following portions of this permit application: • See Form A2 for a description of the Stationary Source including the industrial activities associated with this operating scenario. • See the Emission Inventory spreadsheets (application Section D) for a listing of the pollutants emitted from this operating scenario.	
3.	List the emissions units involved in this operating scenario.	See Form B
4.	Operating schedule: hours/day	24
	days/week	7
	weeks/year	52
5.	Seasonal variation (%): December - February	25%
	March – May	25%
	June - August	25%
	September - November	25%

Alaska Department of Environmental Conservation
Alaska Title V Operating Permit Application Forms

FORM A4

Title V Air Operating Permit Renewal Application Information

Permit Number: AQ0091TVP02

1.	Permit Contact: Name	Greg Arthur
	Title	Air Program Lead
	Mailing Address Line 1	P.O. Box 244027
	Mailing Address Line 2	
	City, State, Zip	Anchorage, AK 99524
	Phone Number	(907) 777-8509
	Email	Greg.Arthur@hilcorp.com
2.	Were there any changes to the stationery source General Information (Form A1)? [If yes, complete and submit a Form A1.]	Yes See Form A1
3.	Were there any changes to the stationary source description (Form A2)? [If yes, complete and submit a Form A2.]	Yes See Form A2
4.	Were there any off-permit changes? Reference any notifications provided to the Department and attach copies of the notifications.	No
	If yes, integrate changes into renewal permit? [If no, explain.]	N/A
5.	Have any Alaska Title I permits been issued to the stationary source since the most recent Title V permit or revision issuance?	Yes AQ0091MSS03 - September 23, 2013 (Rescinded AQ0091MSS01, Rev. 1) AQ0091MSS03, Rev. 1 - November 1, 2016. (An application to revise AQ0091MSS03, Rev. 1 was submitted to the Department on December 20, 2022.) AQ0091MSS04 – December 23, 2020
	If yes, integrate changes into renewal permit? [If yes, please list. If no, explain.]	Yes. AQ0091MSS03, Rev. 2 (i.e., the permit to be issued by the Department in response to our December 20, 2022 application to revise AQ0091MSS03, Rev. 2) AQ0091MSS04
6.	Will there be any changes to the operating scenario(s)? [If yes, describe and attach Form A3.]	No
7.	Will there be any new, modified, or reconstructed emissions units or air pollution control equipment? [If yes, attach appropriate forms from Form Series B, C, D, and E.]	Yes Crane engine EU IDs 24 and 25. See Forms B and B2, and Tables D1-1 and D1-2 for these emissions units. Spartan 151 Drill Rig emissions units See Forms B and B2, and Tables D1-1, D1-2, and D1-3 for these emissions units.

FORM A4

Title V Air Operating Permit Renewal Application Information

Permit Number: AQ0091TVP02

8.	Are the current emissions units correctly identified and defined in the permit? [If no, attach appropriate forms from Form Series B, C, D, and E.]	No See Form B
9.	Does the CAM rule [40 CFR Part 64] apply to any of the emissions units? [If yes, review the guidance provided for CAM in the Form A4 instructions for this item.]	No. See Form B2 for EU IDs 8 & 9 and Form E4.
10.	Does the accidental release prevention regulation [40 CFR Part 68] apply to the facility? [If yes, provide the appropriate regulatory applicability document in detail.]	No. See Form E4.
11.	Are there any other new applicable requirements? [If yes, list the new applicable requirements, emissions units, and attach the appropriate Series E Form.]	Yes NSPS (40 CFR 60) Subpart IIII See Form B2 for EU IDs 24 and 25 See Form E3 and proposed permit AQ0091TVP03. NESHAP (40 CFR 63) Subpart ZZZZ See Form B2 for EU IDs 8, 9, 20, 21, 24, 25, 28, 33, and 34 See Form E3 and proposed permit AQ0091TVP03. Document Submittals and Electronic Copies (Standard Permit Condition XIV) See Form E3 and proposed permit AQ0091TVP03. Emissions Inventory Reporting (Standard Permit Condition XV) See Form E3 and proposed permit AQ0091TVP03.
12.	Are there any requested changes in the assessable potential to emit other than those identified in item 9 above? [If yes, answer the following:]	Yes
	Are the changes a result of having better emissions information such as a new emission factor from a recent source test? [If yes, complete and attach any applicable emissions forms from Series D. Attach additional information as necessary to fully document.]	Yes
	Are the changes due to an increase in production? [If yes, complete and attach the applicable emissions form from Series D. Attach additional information as necessary to fully document.]	No

FORM A4

Title V Air Operating Permit Renewal Application Information

Permit Number: AQ0091TVP02

13.	Is the stationary source in compliance with all of the conditions of the current permit? [If yes, attach a compliance certification. If no, attach a compliance schedule and/or actions taken for any out-of-compliance emissions units.]	Yes See Form B1 for EU IDs 10, 12, 37, 38, and 39 See Form B1 for glycol regenerator boiler IEUs See Form B2 for EU IDs 1 - 4, 8, 9, 20, 21, 24, 25, 28, 33, and 34 See Form B2 for nonroad engines (NREs, including Spartan Drill Rig 151 NREs) See Form B5 for EU IDs 40 - 42 See Form E1 for Stationary Source Wide Applicable Requirements
14.	Are there any requested changes to testing and/or monitoring conditions? [If yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	Yes See Form E3 and proposed permit AQ0091TVP03.
15.	Are there any requested changes to monitoring conditions other than those being replaced by CAM? [If yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	Yes See Form E3 and proposed permit AQ0091TVP03.
16.	Are there any requested changes to recordkeeping conditions? [If yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	Yes See Form E3 and proposed permit AQ0091TVP03.
17.	Are there any requested changes to reporting conditions? [If yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	Yes See Form E3 and proposed permit AQ0091TVP03.
18.	Are there any requested changes to the non-applicable requirements (i.e. permit shield)? [If yes, identify the emissions unit, the requested change, and the reason in the appropriate Series B and/or D form. If the change applies stationary source-wide, complete the appropriate Series E form. Attach additional information as necessary to fully document.]	Yes See Form B1 for EU IDs 10, 12, 37, 38, and 39 See Form B1 for glycol regenerator boiler IEUs See Form B2 for EU IDs 1 – 4, 8, 9, 20, 21, 24, 25, 28, 33, and 34 See Form B2 for NREs and Spartan 151 Drill Rig NREs See Form B4 for tank IEUs See Form E4 and proposed permit AQ0091TVP03 for stationary source-wide permit shield.
19.	Are there any other requested changes to any condition? [If yes, identify the condition, the requested change, and the reason. Attach additional information as necessary to fully document.]	Yes See Form E3 and proposed permit AQ0091TVP03.

FORM A4

Title V Air Operating Permit Renewal Application Information

Statement of Certification:

In the declaration of compliance status found in all Series B Forms and Form E1 provided with this permit renewal application, a "yes" declaration means Hilcorp Alaska, LLC certifies that the stationary source is in compliance with the listed applicable requirement at the time of application submittal and that the stationary source will continue to comply with the applicable requirement.

In addition, Hilcorp Alaska, LLC certifies that the stationary source will comply in a timely manner with any applicable requirements that become effective during the permit term.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Chris Kanyer

Name of Responsible Official

Asset Team Lead

Title


Signature (blue ink)

2/23/2023
Date

SECTION 2 - FORM SERIES B

- Form B –** Emissions Unit Listing for this Application
- Form B1 –** Emissions Unit Detail – External Combustion Equipment (Boilers, Heaters, Flare Pilots, and Flares)
(EU IDs 10, 12, Glycol Regenerator IEUs, 37, 38, 39)
- Form B2 –** Emissions Unit Detail – Internal Combustion Equipment (Engines and Turbines)
(EU IDs 1, 2, 3, 4, 8, 9, 20, 21, 24, 25, 28, 33, 34)
- Form B2 –** Nonroad Engines on Platform and those Associated with the Spartan 151 Drill Rig
- Form B4 –** Emissions Unit Detail – Volatile Liquid Storage Tanks
(Insignificant Emissions Units)
- Form B5 –** Emissions Unit Detail – Miscellaneous Emissions Units
(EU IDs 40, 41, 42)

Tyonek Platform

**Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1**

HILCORP ALASKA, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)
P.O. Box 244027
Anchorage, AK 99524-4027

February 2023

FORM B

Emissions Unit Listing For This Application

Permit Number: **AQ0091TVP02 Rev 1**

EMISSIONS UNIT LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted					
Emissions Unit ID	Emissions Unit Name (Tag No.)	Brief Emissions Unit Description	Rating/Size	Install or Commenced Construction Date	Notes
Emissions Units To Be ADDED By This Application (New, Previously Unpermitted, or Replacement)					
24	TY-CR-0001	Caterpillar C9.3 MY 2013 Tier 4i Crane Engine	350 hp (261 kW)	P.O. Date 9/21/2012 Model Year 2013 Installed 2013	Minor Permit No. AQ0091MSS03 Rev. 1 Replacement of Existing EU ID 24
25	TY-CR-0002	John Deere 6135HF485F MY 2008 Tier 3 Crane Engine	500 hp (373 kW)	P.O. Date 2009 Model Year 2008 Installed May 2022	Replacement engine identified in the application dated 12/20/2022 to revise Minor Permit No. AQ0091MSS03, Rev. 1
S1 – S14	See list of Spartan 151 drill rig emissions units on page 4				Minor Permit No. AQ0091MSS04 Relocation of Spartan Drill Rig 151 to Tyonek Platform Nonroad Engines (NREs) & Diesel Fuel Storage Tanks
Emissions Units To Be MODIFIED By This Application					
No emissions units have been physically modified. Administrative changes to emissions unit information are shown in red on pages 2 and 3.					
Emissions Units To Be DELETED By This Application					
11		Black, Sivalls & Bryson (BS&B) Glycol Heater No. 2	11.1 MMBtu/hr	1968	Removed from service in 2008
24	TY-CR-0001	Manitowoc Crane Engine	230 hp	1968	Replaced by the Caterpillar C9.3 crane engine in 2013 (see above)
25	TY-CR-0002	Unit Crane Engine	230 hp	1968	Replaced by the John Deere 6135HF485F crane engine in 2022 (see above)

FORM B

Emissions Unit Listing For This Application

Permit Number: **AQ0091TVP02 Rev 1**

SIGNIFICANT EMISSIONS UNIT LISTING: Title V permitted emissions units that have not been modified				
Emissions Unit ID	Emissions Unit Name (Tag No.)	Brief Emissions Unit Description	Rating/Size	Install Date
Gas-Fired Turbines				
1	TY-C-4101A	Solar Centaur T-4700 Turbine Compressor No. 1	4,700 hp ISO (46.3 MMBtu/hr LHV @ 0°F)	1999
2	TY-C-4101B	Solar Centaur T-4700 Turbine Compressor No. 2	4,700 hp ISO (46.3 MMBtu/hr LHV @ 0°F)	1999
3	TY-C-4102A	Solar Taurus 60 T-7300S Turbine Compressor No. 3	7,170 hp ISO (61.4 MMBtu/hr LHV @ 0°F)	2000
4	TY-C-4102B	Solar Taurus 60 T-7300S Turbine Compressor No. 4	7,170 hp ISO (61.4 MMBtu/hr LHV @ 0°F)	2000
Gas-Fired Engines & Heaters				
8	TY-G-3201A	Waukesha L-7042G Electric Generator Engine No. 1 with air-fuel controllers and catalytic converters	810 hp (604 kW)	1968
9	TY-G-3201B	Waukesha L-7042G Electric Generator Engine No. 4 with air-fuel controllers and catalytic converters	810 hp (604 kW)	1968
10	Gas Heater	BS&B Glycol Heater No. 1	11.1 MMBtu/hr (heat input, HHV)	1968
12	Gas Heater	BS&B Glycol Heater No. 3	11.1 MMBtu/hr (heat input, HHV)	1968
Diesel-Fired Engines				
20	TY-G-3502A	Caterpillar D-398 Standby Electric Generator Engine No. 1	795 hp (593 kW)	1968
21	TY-G-3502B	Caterpillar D-398 Standby Electric Generator Engine No. 2	795 hp (593 kW)	1968
24	TY-CR-0001	Caterpillar C9.3 MY 2013 Tier 4i Crane Engine	350 hp (261 kW)	2013
25	TY-CR-0002	John Deere 6135HF485F MY 2008 Tier 3 Crane Engine	500 hp (373 kW)	2022
28	TY-C-0015	John Deere 4039DF001 Air Compressor Engine	80 hp	1992
33	TY-P-2809A	Caterpillar 3306 Firewater Engine No. 1	231 hp	2002
34	TY-P-2809B	Caterpillar 3306 Firewater Engine No. 2	231 hp	2002
Flares				
37	See the <i>Insignificant Emissions Unit Listing</i> on page 5 of this form.			
38	TY-V-0005	HP Safety Flare	583.3 MMBtu/hr (HHV)	1968

FORM BEmissions Unit Listing For This Application

Permit Number: **AQ0091TVP02 Rev 1**

SIGNIFICANT EMISSIONS UNIT LISTING: Title V permitted emissions units that have not been modified				
Emissions Unit ID	Emissions Unit Name (Tag No.)	Brief Emissions Unit Description	Rating/Size	Install Date
39	TY-V-0007	LP Safety Flare	53.3 MMBtu/hr (HHV)	1968
Vents				
40	TY-H-2611	Glycol Regenerator No. 1 Reboiler Vent	NA	1968
41	TY-H-2612	Glycol Regenerator No. 2 Reboiler Vent	NA	1968
42	TY-H-2613	Glycol Regenerator No. 3 Reboiler Vent	NA	1968

FORM B

Emissions Unit Listing For This Application

Permit Number: **AQ0091TVP02 Rev 1**

SPARTAN 151 DRILL RIG AND ASSOCIATED EMISSIONS UNIT INVENTORY ^{1,2}					
Emissions Unit ID	Description	Make/Model	Rating/ Capacity	Fuel	Commenced Construction Date ³
S1	Rig Engine #1	Caterpillar D-399	1,100 hp	Diesel	1981
S2	Rig Engine #2	Caterpillar D-399	1,100 hp	Diesel	1981
S3	Rig Engine #3	Caterpillar D-398	970 hp	Diesel	1981
S4	Rig Engine #4	Caterpillar D-398	970 hp	Diesel	1981
S5	Rig Engine #5	Caterpillar D-398	970 hp	Diesel	1981
S6	Rig Engine #6	Caterpillar D-398	970 hp	Diesel	1981
S7	Rig Engine #7	Caterpillar D-398	970 hp	Diesel	1981
S8	Crane Engine	Caterpillar D-3306	300 hp	Diesel	1981
S9	Crane Engine	Detroit Diesel 671	285 hp	Diesel	1981
S10	Cement Pump 1	Detroit Diesel 8V71	490 hp	Diesel	1981
S11	Cement Pump 2	Detroit Diesel 8V71	490 hp	Diesel	1981
S12	Diesel Fuel Storage Tank #10	NA	32,943 gallons	NA	1981
	Diesel Fuel Storage Tank #11	NA	646 gallons	NA	1981
	Diesel Fuel Storage Tank #12	NA	28,663 gallons	NA	1981
	Diesel Fuel Storage Tank #13	NA	3,305 gallons	NA	1981
S13	Lifeboat 1 Engine	BUKH DV36 RME	36 hp	Diesel	1981
S14	Lifeboat 1 Engine	BUKH DV36 RME	36 hp	Diesel	1981

Notes:

1. EU IDs S1 through S11, S13, and S14 are nonroad engines (NREs) as defined in 40 C.F.R. 1068.30.
2. Diesel fuel storage tanks #10 through #13, collectively identified as EU ID S12, are insignificant emissions units under 18 AAC 50.326(e) that are not subject to any emission standards, operational limitations, or monitoring, recordkeeping, or reporting requirements.
3. There are no installation dates because Spartan 151 drill rig equipment rotates on and off the platform.

FORM B

Emissions Unit Listing For This Application

Permit Number: **AQ0091TVP02 Rev 1**

INSIGNIFICANT EMISSIONS UNIT LISTING: Insignificant Title V permitted emissions units that have not been modified (Spartan 151 drill rig storage tanks are listed separately)				
Emissions Unit Name (Tag No.)	Brief Emissions Unit Description	Rating/Size	Commenced Construction Date	Basis for Insignificant Status
Combustion Emissions Units				
TY-V-0006 (EU ID 37)	HP/LP Flare Pilots	0.125 MMBtu/hr (HHV)	1968	18 AAC 50.326(e), 18 AAC 50.326(g)(5)
TY-H-2611	Glycol Regenerator Reboiler No. 1	0.275 MMBtu/hr	1968	18 AAC 50.326(g)(5)
TY-H-2612	Glycol Regenerator Reboiler No. 2	0.275 MMBtu/hr	1968	18 AAC 50.326(g)(5)
TY-H-2613	Glycol Regenerator Reboiler No. 3	0.275 MMBtu/hr	1968	18 AAC 50.326(g)(5)
Tanks w/ Capacity <10,000 Gallons				
TK-107	AC Generator Diesel Fuel Tank	1,050 gallons	1968	18 AAC 50.326(e)(4)
Tanks w/ Capacity ≥10,000 Gallons				
TK-101A	Firewater Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb, and not storing a petroleum liquid or VOL)	63,000 gallons	1968	18 AAC 50.326(f)(68)
TK-101B	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	63,000 gallons	1968	18 AAC 50.326(f)(88)
TK-102A	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	42,000 gallons	1968	18 AAC 50.326(f)(88)
TK-102B	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	42,000 gallons	1968	18 AAC 50.326(f)(88)
TK-102C	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	42,000 gallons	1968	18 AAC 50.326(f)(88)
TK-102D	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	42,000 gallons	1968	18 AAC 50.326(f)(88)
TK-104B	Potable Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb, and not storing a petroleum liquid or VOL)	75,600 gallons	1968	18 AAC 50.326(f)(68)

FORM B

Emissions Unit Listing For This Application

Permit Number: **AQ0091TVP02 Rev 1**

INSIGNIFICANT EMISSIONS UNIT LISTING: Insignificant Title V permitted emissions units that have not been modified (Spartan 151 drill rig storage tanks are listed separately)				
Emissions Unit Name (Tag No.)	Brief Emissions Unit Description	Rating/Size	Commenced Construction Date	Basis for Insignificant Status
TK-105A	Drilling Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb, and not storing a petroleum liquid or VOL)	75,600 gallons	1968	18 AAC 50.326(f)(68)
TK-105B	Drilling Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb, and not storing a petroleum liquid or VOL)	75,600 gallons	1968	18 AAC 50.326(f)(68)
TK-109	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	12,600 gallons	1968	18 AAC 50.326(f)(88)
TK-110	Produced Water Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	12,600 gallons	1968	18 AAC 50.326(f)(88)
TK-111A	Triethylene Glycol Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	18,900 gallons	1968	18 AAC 50.326(e)(4)
TK-111B	Dowfrost (Propylene Glycol) Storage Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	18,900 gallons	1968	18 AAC 50.326(e)(4)
TK-112A	Diesel Storage Beam Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	63,000 gallons	1968	18 AAC 50.326(e)(4)
TK-112B	Diesel Storage Beam Tank (Commenced construction prior to the effective date of NSPS Subparts K, Ka, and Kb)	63,000 gallons	1968	18 AAC 50.326(e)(4)

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	10, 12 // 1
2.	Date installation/construction commenced	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	67-238 and 67-237
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer	Black Sivalls & Bryson (BS&B)
7.	Description of emissions unit, including type of boiler/heater and firing method: Glycol heaters no. 1 and no. 3 (heater no. 2 has been removed from service). Milwaukee Boiler-Reliance 250 FL fire tube unit with Power Flame Burner assembly. Natural gas fired.	
8.	Rated design capacity (heat input, MMBtu/hr)	11.1 MMBtu/hr, HHV basis (each unit)
9.	Maximum steam production rate (lbs/hr)	NA
10.	Maximum steam pressure (psi)	NA
11.	Maximum steam temperature (°F)	NA

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Fuel gas	11.1 MMBtu/hr (HHV) (11,023 scf/hr per unit @ 1,007 Btu/scf HHV heat content)

13.	Is waste heat utilized for any purpose? If yes, describe: No

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **10, 12 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
1.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 10 and 12 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **10, 12 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 10 and 12 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi- annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.4	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **10, 12 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9.5	Same as Condition 9.4	Sulfur Compound Emissions Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	Same as Condition 9.4	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **10, 12 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of 200 ppmv gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
14b	Condition 11 of Minor Permit No. AQ0091MSS03 Rev. 1	Natural Gas Consumption (Owner Requested Limit)	195 MMscf per 12-month period for EU IDs 10 and 12 combined.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 14.2, 14.3, and 14.4. Compliance with the natural gas consumption limit is demonstrated by records included in the Operating Reports.
14.2	Same as Condition 14b	Natural Gas Consumption (Owner Requested Limit) Monitoring	Monitor natural gas consumption using either: a) a fuel meter with a minimum accuracy of $\pm 5\%$; or b) measurement techniques and calculations approved by the Department.	Yes	Fuel gas usage is monitored using a meter meeting the requirements of this condition and is reported in the Operating Reports.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **10, 12 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
14.3, 14.4	Same as Condition 14b	Natural Gas Consumption (Owner Requested Limit) Recordkeeping and Reporting	Record and report the monthly and 12-month total combined natural gas consumption for EU IDs 10 and 12.	Yes	The required information is recorded as demonstrated by data reported in the Operating Reports.
14.5	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Natural Gas Consumption (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the fuel consumption limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
39.1	18 AAC 50.030 18 AAC 50.326(j)(3) 18 AAC 50.346(b)(5) (Standard Operating Permit Condition VI)	Good Air Pollution Control Practice	Perform regular maintenance according to manufacturer's or operator's maintenance procedures.	Yes	Records of operating and maintenance procedures are maintained on file.
39.2	Same as Condition 39.1	Good Air Pollution Control Practice	Keep records of any maintenance that would have a significant effect on emissions.	Yes	Records of operating and maintenance procedures are maintained on file.
39.3	Same as Condition 39.1	Good Air Pollution Control Practice	Keep a copy of manufacturer's or operator's maintenance procedures.	Yes	Required records are kept on file.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **10, 12 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial/ Commercial/ Institutional Boilers and Process Heaters	Stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart JJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources	These emissions units are not industrial, commercial, or institutional “boilers” as defined in 40 C.F.R. 63.11237.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	GlycolRegenIEUs // 1
2.	Date installation/construction commenced	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	P-2683-0-35-101; P-2683-0-35-102; P-2683-0-35-103
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer	Black Sivalis & Bryson (BS&B)
7.	Description of emissions unit, including type of boiler/heater and firing method: Glycol regenerator reboilers (three)	
8.	Rated design capacity (heat input, MMBtu/hr)	0.275 MMBtu/hr, HHV basis (each unit)
9.	Maximum steam production rate (lbs/hr)	N/A
10.	Maximum steam pressure (psi)	N/A
11.	Maximum steam temperature (°F)	N/A

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Natural Gas	0.275 MMBtu/hr (HHV) (273 scf/hr per unit @ 1,007 Btu/scf HHV heat content)

13.	Is waste heat utilized for any purpose? If yes, describe: No

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **GlycolRegenIEUs // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
17.1	18 AAC 50.346(b)(4) (Standard Operating Permit Condition V)	Insignificant Emissions Units Compliance Certification	Submit the Compliance Certification for insignificant emissions units based on reasonable inquiry.	Yes	Submittal of the annual Compliance Certification Reports according to the required procedures.
17.3	Same as Condition 17.1	Insignificant Emissions Units with Actual Emissions > Significant Emissions Thresholds	Report in the Operating Report if actual emissions from an insignificant emissions unit become greater than any of the significant emissions thresholds.	Yes	Reasonable inquiry.
18	18 AAC 50.055(a)(1)	Visible Emissions	20% opacity averaged over any 6 consecutive minutes.	Yes	Reasonable inquiry.
19	18 AAC 50.055(b)(1)	Particulate Matter	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Reasonable inquiry.
20	18 AAC 50.055(c)	Sulfur Compound Emissions	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	Reasonable inquiry.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Boilers and Heaters)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **GlycolRegenIEUs // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 CFR 63 Subpart DDDDD – National Emissions Standards for Hazardous Air Pollutants for Industrial/ Commercial/ Institutional Boilers and Process Heaters	Stationary source is not a major source of HAP emissions.
40 CFR 63 Subpart JJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources	These emissions units are not industrial, commercial, or institutional “boilers” as defined in 40 C.F.R. 63.11237.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flare Pilots)

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	37 // 1
2.	Date installation/construction commenced	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	NA
5.	Special control requirements? [if yes, describe]	NA
6.	Manufacturer	NA
7.	Description of emissions unit, including type of boiler/heater and firing method: EU ID 37 consists of the flare pilots for the low pressure and high pressure safety flares.	
8.	Rated design capacity (heat input, MMBtu/hr)	0.125 MMBtu/hr (HHV)
9.	Maximum steam production rate (lbs/hr)	NA
10.	Maximum steam pressure (psi)	NA
11.	Maximum steam temperature (°F)	NA

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Gaseous fuel	0.125 MMBtu/hr (HHV)

13.	Is waste heat utilized for any purpose? If yes, describe: No

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flare Pilots)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **37 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Monitoring, recordkeeping, and reporting according to Condition 5.
1.4 (Will not apply to EU ID 37 under the TVP03 permit.)	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Monitor, record, and report in accordance with Condition 5.	Yes	Monitoring, recordkeeping, and reporting according to Condition 5.
5, 5.1, 5.2, 5.3, 5.4 (Will not apply to EU ID 37 under the TVP03 permit.)	18 AAC 50.040(j) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	Visible Emissions Standard MR&R	Observe one flare event annually and six flare events total during the life of the permit using Method 9. Record and report required information in accordance with Conditions 5.2, 5.3, and 5.4.	Yes	Monitoring, recordkeeping, and reporting as required by these conditions. Tyonek has completed the requirement to monitor six flare events during the life of the permit.
5.5 (Will not apply to EU ID 37 under the TVP03 permit.)	Same as Condition 5	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flare Pilots)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **37 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Annual compliance certifications based on reasonable inquiry indicating that EU ID 37 complies with the PM emissions standard.
6.4 (Will not apply to EU ID 37 under the TVP03 permit.)	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(3) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard Reporting	Annually certify compliance with the particulate matter standard.	Yes	Annual compliance certifications based on reasonable inquiry.
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.4	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flare Pilots)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **37 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9.5	Same as Condition 9.4	Sulfur Compound Emissions Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	Same as Condition 9.4	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flare Pilots)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **37 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 200 ppmv gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
39.1 (Will not apply to EU ID 37 under the TVP03 permit.)	18 AAC 50.030 18 AAC 50.326(j)(3) 18 AAC 50.346(b)(5) (Standard Operating Permit Condition VI)	Good Air Pollution Control Practice	Perform regular maintenance according to manufacturer's or operator's maintenance procedures.	Yes	Records of operating and maintenance procedures are maintained on file.
39.2 (Will not apply to EU ID 37 under the TVP03 permit.)	Same as Condition 39.1	Good Air Pollution Control Practice	Keep records of any maintenance that would have a significant effect on emissions.	Yes	Records of operating and maintenance procedures are maintained on file.
39.3 (Will not apply to EU ID 37 under the TVP03 permit.)	Same as Condition 39.1	Good Air Pollution Control Practice	Keep a copy of manufacturer's or operator's maintenance procedures.	Yes	Required records are kept on file.

FORM B1Emissions Unit Detail Form – External Combustion Equipment (Flare Pilots)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **37 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
NA	NA

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	38 // 1
2.	Date installation/construction commenced	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	NA
5.	Special control requirements? [if yes, describe]	NA
6.	Manufacturer	John Zink
7.	Description of emissions unit, including type of boiler/heater and firing method: EU ID 38 is a high pressure safety flare.	
8.	Rated design capacity (heat input, MMBtu/hr)	583.3 MMBtu/hr (HHV)
9.	Maximum steam production rate (lbs/hr)	NA
10.	Maximum steam pressure (psi)	NA
11.	Maximum steam temperature (°F)	NA

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Gaseous fuel	583.3 MMBtu/hr (HHV)

13.	Is waste heat utilized for any purpose? If yes, describe: No

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **38 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Monitoring, recordkeeping, and reporting according to Condition 5.
1.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Monitor, record, and report in accordance with Condition 5.	Yes	Monitoring, recordkeeping, and reporting according to Condition 5.
5, 5.1, 5.2, 5.3, 5.4	18 AAC 50.040(j) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	Visible Emissions Standard MR&R	Observe one flare event annually and six flare events total during the life of the permit using Method 9. Record and report required information in accordance with Conditions 5.2, 5.3, and 5.4.	Yes	Monitoring, recordkeeping, and reporting as required by these conditions. Tyonek has completed the requirement to monitor six flare events during the life of the permit.
5.5	Same as Condition 5	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **38 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Annual compliance certifications based on reasonable inquiry indicating that EU ID 38 complies with the PM emissions standard.
6.4	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(3) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard Reporting	Annually certify that the emissions unit complies with the particulate matter standard.	Yes	Annual compliance certifications based on reasonable inquiry.
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.4	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **38 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9.5	Same as Condition 9.4	Sulfur Compound Emissions Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	Same as Condition 9.4	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **38 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of 200 ppmv gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
14c	Condition 11 of Minor Permit No. AQ0091MSS03 Rev. 1	Natural Gas Consumption (Owner Requested Limit)	252 MMscf per 12- month period for EU IDs 38 and 39 combined.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 14.2, 14.3, and 14.4. Compliance with the natural gas consumption limit is demonstrated by records included in the Operating Reports.
14.2	Same as Condition 14c	Natural Gas Consumption (Owner Requested Limit) Monitoring	Monitor natural gas consumption using either: a) a fuel meter with a minimum accuracy of ±5%; or b) measurement techniques and calculations approved by the Department.	Yes	Fuel gas usage is monitored using a meter meeting the requirements of this condition and is reported in the Operating Reports.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **38 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
14.3, 14.4	Same as Condition 14c	Natural Gas Consumption (Owner Requested Limit) Recordkeeping and Reporting	Record and report the monthly and 12-month total combined natural gas consumption for EU IDs 38 and 39.	Yes	The required information is recorded and reported in the Operating Reports.
14.5	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(1), (a)(3) & (c)(6)	Natural Gas Consumption (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the fuel consumption limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
39.1	18 AAC 50.030 18 AAC 50.326(j)(3) 18 AAC 50.346(b)(5) (Standard Operating Permit Condition VI)	Good Air Pollution Control Practice	Perform regular maintenance according to manufacturer's or operator's maintenance procedures.	Yes	Records of operating and maintenance procedures are maintained on file.
39.2	Same as Condition 39.1	Good Air Pollution Control Practice	Keep records of any maintenance that would have a significant effect on emissions.	Yes	Records of operating and maintenance procedures are maintained on file.
39.3	Same as Condition 39.1	Good Air Pollution Control Practice	Keep a copy of manufacturer's or operator's maintenance procedures.	Yes	Required records are kept on file.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **38 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
40 C.F.R. 60, Subpart A – General Provisions §60.18 – General Control Device and Work Practice Requirements 40 C.F.R. 63, Subpart A – General Provisions §63.11 – Control Device and Work Practice Requirements	The flares are not control devices used to comply with applicable subparts of 40 C.F.R. Parts 60, 61, or 63.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	39 // 1
2.	Date installation/construction commenced	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	NA
5.	Special control requirements? [if yes, describe]	NA
6.	Manufacturer	John Zink
7.	Description of emissions unit, including type of boiler/heater and firing method: EU ID 39 is a low pressure safety flare.	
8.	Rated design capacity (heat input, MMBtu/hr)	53.3 MMBtu/hr (HHV)
9.	Maximum steam production rate (lbs/hr)	NA
10.	Maximum steam pressure (psi)	NA
11.	Maximum steam temperature (°F)	NA

12. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Gaseous fuel	53.3 MMBtu/hr (HHV)

13.	Is waste heat utilized for any purpose? If yes, describe: No

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **39 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Monitoring, recordkeeping, and reporting according to Condition 5.
1.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Monitor, record, and report in accordance with Condition 5.	Yes	Monitoring, recordkeeping, and reporting according to Condition 5.
5, 5.1, 5.2, 5.3, 5.4	18 AAC 50.040(j) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	Visible Emissions Standard MR&R	Observe one flare event annually and six flare events total during the life of the permit using Method 9. Record and report required information in accordance with Conditions 5.2, 5.3, and 5.4.	Yes	Monitoring, recordkeeping, and reporting as required by these conditions. Tyonek has completed the requirement to monitor six flare events during the life of the permit.
5.5	Same as Condition 5	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **39 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Annual compliance certifications based on reasonable inquiry indicating that EU ID 39 complies with the PM emissions standard.
6.4	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard Reporting	Annually certify that the emissions unit complies with the particulate matter standard.	Yes	Annual compliance certifications based on reasonable inquiry.
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.4	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **39 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9.5	Same as Condition 9.4	Sulfur Compound Emissions Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	Same as Condition 9.4	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **39 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of 200 ppmv gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
14c	Condition 11 of Minor Permit No. AQ0091MSS03 Rev. 1	Natural Gas Consumption (Owner Requested Limit)	252 MMscf per 12-month period for EU IDs 38 and 39 combined.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 14.2, 14.3, and 14.4. Compliance with the natural gas consumption limit is demonstrated by records included in the Operating Reports.
14.2	Same as Condition 14c	Natural Gas Consumption (Owner Requested Limit) Monitoring	Monitor natural gas consumption using either: a) a fuel meter with a minimum accuracy of ±5%; or b) measurement techniques and calculations approved by the Department.	Yes	Fuel gas usage is monitored using a meter meeting the requirements of this condition and is reported in the Operating Reports.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **39 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
14.3, 14.4	Same as Condition 14c	Natural Gas Consumption (Owner Requested Limit) Recordkeeping and Reporting	Record and report the monthly and 12-month total combined natural gas consumption for EU IDs 38 and 39.	Yes	The required information is recorded and reported in the Operating Reports.
14.5	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(1), (a)(3) & (c)(6)	Natural Gas Consumption (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the fuel consumption limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
39.1	18 AAC 50.030 18 AAC 50.326(j)(3) 18 AAC 50.346(b)(5) (Standard Operating Permit Condition VI)	Good Air Pollution Control Practice	Perform regular maintenance according to manufacturer's or operator's maintenance procedures.	Yes	Records of operating and maintenance procedures are maintained on file.
39.2	Same as Condition 39.1	Good Air Pollution Control Practice	Keep records of any maintenance that would have a significant effect on emissions.	Yes	Records of operating and maintenance procedures are maintained on file.
39.3	Same as Condition 39.1	Good Air Pollution Control Practice	Keep a copy of manufacturer's or operator's maintenance procedures.	Yes	Required records are kept on file.

FORM B1

Emissions Unit Detail Form – External Combustion Equipment (Flares)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **39 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
40 C.F.R. 60, Subpart A – General Provisions §60.18 – General Control Device and Work Practice Requirements 40 C.F.R. 63, Subpart A – General Provisions §63.11 – Control Device and Work Practice Requirements	The flares are not control devices used to comply with applicable subparts of 40 C.F.R. Parts 60, 61, or 63.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	1, 2 // 1
2.	Date installation/construction commenced¹	Unknown
3.	Date installed	1999
4.	Emissions Unit serial number	CC78474, CC78473
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Solar Centaur T-4700
7.	Type of combustion device	Gas-fired turbine
8.	Rated design capacity (horsepower rating for engines)	NA
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	4,700 hp ISO; 46.3 MMBtu/hr (LHV @ 0°F)
10.	If used for power generation, electrical output (kW)	NA

¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,

- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.

Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Fuel gas	51,104 scf/hr Based on: 46.3 MMBtu/hr (LHV @ 0°F) (vendor data) 906 Btu/scf fuel gas LHV

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
1.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 1 and 2 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
6.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 1 and 2 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.4	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.5	Same as Condition 9.4	Sulfur Compound Emissions Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	Same as Condition 9.4	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of 200 ppmv gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
14a	Condition 11 of Minor Permit No. AQ0091MSS03 Rev. 1	Natural Gas Consumption (Owner Requested Limit)	805 MMscf per 12-month period for EU IDs 1 and 2 combined.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 14.2, 14.3, and 14.4. Compliance with the natural gas consumption limit is demonstrated by records included in the Operating Reports.
14.2	Same as Condition 14a	Natural Gas Consumption (Owner Requested Limit) Monitoring	Monitor natural gas consumption using either: a) a fuel meter with a minimum accuracy of $\pm 5\%$; or b) measurement techniques and calculations approved by the Department.	Yes	Fuel gas usage is monitored using a meter meeting the requirements of this condition and is reported in the Operating Reports.
14.3, 14.4	Same as Condition 14a	Natural Gas Consumption (Owner Requested Limit) Recordkeeping and Reporting	Record and report the monthly and 12-month total combined natural gas consumption for EU IDs 1 and 2.	Yes	The required information is recorded as demonstrated by data reported in the Operating Reports.
14.5	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Natural Gas Consumption (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the fuel consumption limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
22	40 C.F.R. 60.7(b), Subpart A	NSPS Subpart A Startup, Shutdown, and Malfunction	Maintain records of any startup, shutdown, or malfunction in operation and periods when a CMS is inoperative.	Yes	Records are maintained as required.
23, 23.1, 23.2	40 C.F.R. 60.7(c), Subpart A	NSPS Subpart A Excess Emissions and Monitoring System Performance (EEMSP) Reports	As applicable, submit EEMSP Reports to EPA and send a copy to ADEC addressing the fuel gas H ₂ S monitoring for NSPS Subpart GG.	Yes	EEMSP reporting is not required since the determination has been made that natural gas is combusted. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
24, 24.1, 24.2	40 C.F.R. 60.7(d), Subpart A	NSPS Subpart A Summary Report	As applicable, submit a summary report to EPA and send a copy to ADEC addressing the fuel gas H ₂ S monitoring for NSPS Subpart GG.	Yes	EEMSP reporting is not required since the determination has been made that natural gas is combusted. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
25	40 C.F.R. 60.8, Subpart A	NSPS Subpart A Source Tests	Conduct source tests upon request from EPA.	Yes	Tests are conducted upon request.
26	40 C.F.R. 60.11(d), Subpart A	NSPS Subpart A Good Air Pollution Control Practice	At all times, operate in a manner consistent with good air pollution control practice.	Yes	Records of operation and maintenance procedures are maintained on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
27	40 C.F.R. 60.11(g), Subpart A	NSPS Subpart A Credible Evidence	NSPS Credible Evidence Provisions.	Yes	Advisory Condition
28	40 C.F.R. 60.12, Subpart A	NSPS Subpart A Concealment of Emissions (Circumvention)	Do not build, erect, install, or use any article, machine, equipment or process that conceals an emission which would otherwise constitute a violation of the NSPS Subpart GG emissions standards.	Yes	Reasonable inquiry. Activities which would conceal emissions or otherwise constitute circumvention of an applicable standard are not conducted.
29	40 C.F.R. 60.332(a)(2) & (d), Subpart GG	NSPS Subpart GG NOx Standard	NOx emission concentration not to exceed 165 ppmvd corrected to 15% O ₂ and ISO standard conditions.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 29.1, 29.2, and 29.3. The most recent source test was conducted on EU ID 2 on November 5-6, 2020. [EU ID 2 also represents EU ID 1 in accordance with Condition 29.1b.] Test Result: 112.9 ppmvd @ 15% O ₂ , ISO

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
29a (New Condition 75.2 in proposed TVP03 permit)	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(c)(6)	Waivers	Upon request, provide the Department with copies of EPA-issued waivers and other documents. Keep a copy of each EPA-issued monitoring waiver or custom monitoring schedule with the permit.	Yes	Records review. There are no EPA waivers or custom monitoring schedules that apply to these units.
29.1	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3)(i) & (c)(6)	NSPS Subpart GG NOx Standard Monitoring	Periodic testing, substitution, and load requirements.	Yes	The most recent source test was conducted on EU ID 2 on November 5-6, 2020. [EU ID 2 also represents EU ID 1 in accordance with Condition 29.1b.] Test Result: 112.9 ppmvd @ 15% O ₂ , ISO The source test on EU ID 2 was not conducted within 5 years of the last performance test (i.e., by April 2020) in accordance with Condition 29.1a(i). The source test scheduled for April 2020 was delayed due to the Coronavirus Disease 2019 (COVID-19) National Emergency. A permit deviation report was submitted on May 5, 2020, meeting the intent of the <i>No Action Assurance Memorandum</i> issued by the Department.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
29.2a	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3)(ii) & (c)(6)	NSPS Subpart GG NOx Standard Recordkeeping	If applicable, keep hourly records of load or surrogate measurements for load. If applicable, submit to ADEC how load or load surrogates will be measured and a schedule for necessary equipment installation and monitoring.	Yes	Not triggered. Recordkeeping as required by this condition, when necessary.
29.2b	Same as Condition 29.2a	NSPS Subpart GG NOx Standard Recordkeeping	For turbines that operate less than 400 hours during any 12-month period, keep monthly records of the hours of operation.	Yes	Recordkeeping as required by this condition.
29.3a	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3)(iii) & (c)(6)	NSPS Subpart GG NOx Standard Reporting	As required, include the necessary data in the Operating Report for each turbine tested or represented by testing at less than maximum load and for which the load must be limited.	Yes	Not triggered. Reporting in the Operating Report as necessary.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
29.3b	Same as Condition 29.3a	NSPS Subpart GG NOx Standard Reporting	For each turbine for which monitoring has not been satisfied because it normally operates less than 400 hours in any 12 consecutive months, include in the Operating Report the turbine's highest operating hours for any 12 consecutive months ending during the period covered by the report.	Yes	Operating Reports and records of operating hours.
29.3c	Same as Condition 29.3a	NSPS Subpart GG NOx Standard Excess Emissions and Permit Deviation Reporting	Notify ADEC of excess emissions and permit deviations pertaining to the NSPS Subpart GG NOx standard and required associated monitoring, recordkeeping, and reporting.	Yes	Any exceedance of an applicable standard or limit, or deviation from required MR&R, is documented in an Excess Emissions or Permit Deviation report.
30	40 C.F.R. 60.333(b), Subpart GG	NSPS Subpart GG Sulfur Standard	Fuel sulfur not to exceed 0.8% by wt.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 30.1, 30.2, 30.3, and 30.4.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **1, 2 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
30.1	40 C.F.R. 60.334 & 60.335, Subpart GG	NSPS Subpart GG Sulfur Monitoring	Monitor to demonstrate compliance with the NSPS Subpart GG Sulfur Standard.	Yes	Natural gas demonstration has been completed using approved methods. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
30.2	40 C.F.R. 60.335(b)(10) and (11), Subpart GG	NSPS Subpart GG Sulfur Test Methods and Procedures	If required, perform fuel sulfur content tests using ASTM D1072-80, 90; D3246-81, 92, 96; D4468-85; or D6667-01.	Yes	Natural gas demonstration has been completed using approved methods. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
30.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)(ii)	NSPS Subpart GG Sulfur Recordkeeping	Keep records of analyses required under Conditions 30.1 and 30.2.	Yes	Natural gas demonstration has been completed using approved methods. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
30.4	40 C.F.R. 60.334(j), Subpart GG	NSPS Subpart GG Sulfur Reporting	Report fuel sulfur analyses and excess emissions.	Yes	Reporting is not required because a natural gas demonstration has been made.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **1, 2 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart A, General Provisions §§60.7(a)(1) & (a)(3) – Notification and Recordkeeping (initial only)	Requirements have been met for initial notification.
40 C.F.R. 60 Subpart A, General Provisions §§60.7(a)(5) and (a)(7) - Notification and Recordkeeping	No continuous monitoring systems at the stationary source. Notifications apply to startup conditions only and would not be applicable to operation.
40 C.F.R. 60 Subpart A, General Provisions §60.8 – Performance Tests (initial tests only)	Requirements have been met for initial demonstration.
40 C.F.R. 60 Subpart GG, Standards of Performance for Stationary Gas Turbines §60.332(a)(1) - Standard for Nitrogen Oxides	Standard applies to <i>electric utility stationary gas turbines</i> , as defined in subpart. There are no affected sources within the stationary source.
40 C.F.R. 60 Subpart GG §60.334(a), (b), (d) – Monitoring of Operations §60.335(b)(4) – Test Methods and Procedures	Applies only to affected turbines equipped with water injection to control emissions of NO _x . These emissions units are not equipped with water injection to control emissions of NO _x .
40 C.F.R. 60 Subpart GG §60.334(e), (f) – Monitoring of Operations	Applies only to affected turbines that commence construction after July 8, 2004. These emissions units commenced construction prior to this date.
40 C.F.R. 60 Subpart GG §60.334(g) – Monitoring of Operations	Applies only to affected turbines subject to the continuous monitoring requirements of 40 C.F.R. 60.334(a), (d), or (f).

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **1, 2 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart GG §60.334(h)(2) – Monitoring of Operations	Applies only to owners/operators who claim an allowance for fuel bound nitrogen to calculate the applicable NOx emission limit under §60.332. Hilcorp has not made such a claim for these units.
40 C.F.R. 60 Subpart KKKK – Standards of Performance for Stationary Combustion Turbines	Construction, modification, or reconstruction of each turbine commenced prior to the subpart applicability date of February 18, 2005.
40 C.F.R. 63 Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines	Stationary source is not a major source of HAP emissions.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	3, 4 // 1
2.	Date installation/construction commenced¹	Unknown
3.	Date installed	2000
4.	Emissions Unit serial number	tm00557, tm00558
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Solar Taurus T-7300S
7.	Type of combustion device	Gas-fired turbine
8.	Rated design capacity (horsepower rating for engines)	NA
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	7,170 hp ISO; 61.4 MMBtu/hr (LHV @ 0°F)
10.	If used for power generation, electrical output (kW)	NA

¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,

- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYY for turbines.

Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Fuel gas	67,770 scf/hr Based on: 61.4 MMBtu/hr (LHV @ 0°F) (vendor data) 906 Btu/scf fuel gas LHV

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
1.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 3 and 4 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
6.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 3 and 4 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.4	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.5	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emission Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of 200 ppmv gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/Pollutant	Limit/Standard/Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
15	Condition 12 of Minor Permit No. AQ0091MSS03 Rev. 1	Turbine BACT Operational Limit	Operate in dry low NOx mode except during low-load transient operations of startup and shutdown.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 15.3, 15.4, 15.5, and 15.6. Compliance with the BACT operational limit is demonstrated by records included in the Operating Reports.
15.1	Same as Condition 15	Turbine NOx BACT Limits	NOx: 25 ppmvd at 15 percent O ₂ and 6.2 lb/hr (expressed as NO ₂) averaged over 3 consecutive hours during dry low NOx mode operation.	Yes	Source tests were conducted on EU IDs 3 and 4 on April 26-27, 2022 in accordance with Conditions 15.2 and 29.1a(ii) (annual testing requirements). EU ID 3 Test Results: 23.2 ppmvd @ 15% O ₂ 4.26 lb/hr EU ID 4 Test Results: 15.5 ppmvd @ 15% O ₂ 2.98 lb/hr
15.2	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)	Turbine NOx BACT Limits MR&R	Conduct source tests on EU IDs 3 and 4 to ensure compliance with the NOx BACT limit of Condition 15.1 as set out by Condition 29.1. Record and report source test results according to Conditions 29.2 and 29.3.	Yes	Monitoring, recordkeeping, and reporting in accordance with Conditions 29.1, 29.2, and 29.3. Source tests were conducted on EU IDs 3 and 4 on April 26-27, 2022 in accordance with Condition 29.1a(ii).

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
15.3	Same as Condition 15	Turbine BACT Limits Monitoring and Recordkeeping	Monitor for non-dry low NO _x mode operation, indicated by the presence of a P1 pilot flame, and record the date, time, and duration for which the P1 pilot flame is present.	Yes	Monitoring and recordkeeping as required by this condition.
15.4	Same as Condition 15	Turbine BACT Limits Monitoring and Recordkeeping	Monitor and record the date, time, and duration when either EU ID 3 or 4 is in transient operations of startup and shutdown mode.	Yes	The required information is recorded as demonstrated by data reported in the Operating Reports.
15.5	Same as Condition 15	Turbine BACT Limits Reporting	Include in each Operating Report the date, time, duration, and emissions unit number if either EU ID 3 or 4 is operating, but not in low NO _x mode. Specify whether each non-dry low NO _x mode operation was during startup, shutdown, or another activity. Include a summary report of low NO _x mode events.	Yes	Reporting in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
15.6	Condition 12 of Minor Permit No. AQ0091MSS03 Rev. 1 18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)	Turbine BACT Limits Excess Emissions Reporting	Notify ADEC a) when activities other than startup and shutdown result in operation out of low NO _x mode for more than 6 minutes in any 3-hour period; and b) if source test results show an exceedance of any NO _x BACT emission limits.	Yes	Any exceedance of an applicable standard or limit, or deviation from required operating procedures, is documented in an Excess Emissions or Permit Deviation report
22	40 C.F.R. 60.7(b), Subpart A	NSPS Subpart A Startup, Shutdown, and Malfunction	Maintain records of any startup, shutdown, or malfunction in operation and periods when a CMS is inoperative.	Yes	Records are maintained as required.
23, 23.1, 23.2	40 C.F.R. 60.7(c), Subpart A	NSPS Subpart A Excess Emissions and Monitoring System Performance (EEMSP) Reports	As applicable, submit EEMSP Reports to EPA and send a copy to ADEC addressing the fuel gas H ₂ S monitoring for NSPS Subpart GG.	Yes	EEMSP reporting is not required since the determination has been made that natural gas is combusted. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
24, 24.1, 24.2	40 C.F.R. 60.7(d), Subpart A	NSPS Subpart A Summary Report	As applicable, submit a summary report to EPA and send a copy to ADEC addressing the fuel gas H ₂ S monitoring for NSPS Subpart GG.	Yes	EEMSP reporting is not required since the determination has been made that natural gas is combusted. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
25	40 C.F.R. 60.8, Subpart A	NSPS Subpart A Source Tests	Conduct source tests upon request from EPA.	Yes	Tests are conducted upon request.
26	40 C.F.R. 60.11(d), Subpart A	NSPS Subpart A Good Air Pollution Control Practice	At all times, operate in a manner consistent with good air pollution control practice.	Yes	Records of operation and maintenance procedures are maintained on file.
27	40 C.F.R. 60.11(g), Subpart A	NSPS Subpart A Credible Evidence	NSPS Credible Evidence Provisions.	Yes	Advisory Condition

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/Pollutant	Limit/Standard/Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
28	40 C.F.R. 60.12, Subpart A	NSPS Subpart A Concealment of Emissions (Circumvention)	Do not build, erect, install, or use any article, machine, equipment or process that conceals an emission which would otherwise constitute a violation of the NSPS Subpart GG emissions standards.	Yes	Reasonable inquiry. Activities which would conceal emissions or otherwise constitute circumvention of an applicable standard are not conducted.
29	40 C.F.R. 60.332(a)(2) & (d), Subpart GG	NSPS Subpart GG NOx Standard	NOx emission concentration not to exceed 181 ppmvd corrected to 15% O ₂ and ISO standard conditions.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 29.1, 29.2, and 29.3.
29a (New Condition 75.2 in proposed TVP03 permit)	18 AAC 50.326(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(c)(6)	Waivers	Upon request, provide the Department with copies of EPA-issued waivers and other documents. Keep a copy of each EPA-issued monitoring waiver or custom monitoring schedule with the permit.	Yes	Records review. There are no EPA waivers or custom monitoring schedules that apply to these units.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
29.1	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3)(i) & (c)(6)	NSPS Subpart GG NO _x Standard and BACT NO _x Emission Limits Monitoring	Periodic testing, substitution, and load requirements.	Yes	Source tests were conducted on EU IDs 3 and 4 on April 26-27, 2022 in accordance with Condition 29.1a(ii) (annual testing requirements). EU ID 3 Test Results: 23.2 ppmvd @ 15% O ₂ 4.26 lb/hr EU ID 4 Test Results: 15.5 ppmvd @ 15% O ₂ 2.98 lb/hr
29.2a	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3)(ii) & (c)(6)	NSPS Subpart GG NO _x Standard and BACT NO _x Emission Limits Recordkeeping	If applicable, keep hourly records of load or surrogate measurements for load. If applicable, submit to ADEC how load or load surrogates will be measured and a schedule for necessary equipment installation and monitoring.	Yes	Not triggered. Recordkeeping as required by this condition, when necessary.
29.2b	Same as Condition 29.2a	NSPS Subpart GG NO _x Standard and BACT NO _x Emission Limits Recordkeeping	For turbines that operate less than 400 hours during any 12-month period, keep monthly records of the hours of operation.	Yes	Recordkeeping as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
29.3a	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3)(iii) & (c)(6)	NSPS Subpart GG NO _x Standard and BACT NO _x Emission Limits Reporting	As required, include the necessary data in the Operating Report for each turbine tested or represented by testing at less than maximum load and for which the load must be limited.	Yes	Not triggered. Reporting in the Operating Report as necessary.
29.3b	Same as Condition 29.3a	NSPS Subpart GG NO _x Standard and BACT NO _x Emission Limits Reporting	For each turbine for which monitoring has not been satisfied because it normally operates less than 400 hours in any 12 consecutive months, include in the Operating Report the turbine's highest operating hours for any 12 consecutive months ending during the period covered by the report.	Yes	Operating Reports and records of operating hours.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
29.3c	Same as Condition 29.3a	NSPS Subpart GG NOx Standard and BACT NOx Emission Limits Excess Emissions and Permit Deviation Reporting	Notify ADEC of excess emissions and permit deviations pertaining to the NSPS Subpart GG NOx standard and BACT NOx emission limits and required associated monitoring, recordkeeping, and reporting.	Yes	Any exceedance of an applicable standard or limit, or deviation from required MR&R, is documented in an Excess Emissions or Permit Deviation report.
30	40 C.F.R. 60.333(b), Subpart GG	NSPS Subpart GG Sulfur Standard	Fuel sulfur not to exceed 0.8 % by wt.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 30.1, 30.2, 30.3, and 30.4.
30.1	40 C.F.R. 60.334 & 60.335, Subpart GG	NSPS Subpart GG Sulfur Monitoring	Monitor to demonstrate compliance with the NSPS Subpart GG Sulfur Standard.	Yes	Natural gas demonstration has been completed using approved methods. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
30.2	40 C.F.R. 60.335(b)(10) and (11), Subpart GG	NSPS Subpart GG Sulfur Test Methods and Procedures	If required, perform fuel sulfur content tests using ASTM D1072-80, 90; D3246-81, 92, 96; D4468-85; or D6667-01.	Yes	Natural gas demonstration has been completed using approved methods. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
30.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)(ii)	NSPS Subpart GG Sulfur Recordkeeping	Keep records of analyses required under Conditions 30.1 and 30.2.	Yes	Natural gas demonstration has been completed using approved methods. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
30.4	40 C.F.R. 60.334(j), Subpart GG	NSPS Subpart GG Sulfur Reporting	Report fuel sulfur analyses and excess emissions.	Yes	Reporting is not required because a natural gas demonstration has been made.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **3, 4 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart A, General Provisions §§60.7(a)(1) & (a)(3) – Notification and Recordkeeping (initial only)	Requirements have been met for initial notification.
40 C.F.R. 60 Subpart A, General Provisions §§60.7(a)(5) and (a)(7) - Notification and Recordkeeping	No continuous monitoring systems at the stationary source. Notifications apply to startup conditions only and would not be applicable to operation.
40 C.F.R. 60 Subpart A, General Provisions §60.8 – Performance Tests (initial tests only)	Requirements have been met for initial demonstration.
40 C.F.R. 60 Subpart GG, Standards of Performance for Stationary Gas Turbines §60.332(a)(1) - Standard for Nitrogen Oxides	Standard applies to <i>electric utility stationary gas turbines</i> , as defined in subpart. There are no affected sources within the stationary source.
40 C.F.R. 60 Subpart GG §60.334(a), (b), (d) – Monitoring of Operations §60.335(b)(4) – Test Methods and Procedures	Applies only to affected turbines equipped with water injection to control emissions of NOx. These emissions units are not equipped with water injection to control emissions of NOx.
40 C.F.R. 60 Subpart GG §60.334(e), (f) – Monitoring of Operations	Applies only to affected turbines that commence construction after July 8, 2004. These emissions units commenced construction prior to this date.
40 C.F.R. 60 Subpart GG §60.334(g) – Monitoring of Operations	Applies only to affected turbines subject to the continuous monitoring requirements of 40 C.F.R. 60.334(a), (d), or (f).

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)**

Permit Number: **AQ0091TVP02** ☐**Emissions Unit ID No. // Operating Scenario:** **3, 4 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart GG §60.334(h)(2) – Monitoring of Operations	Applies only to owners/operators who claim an allowance for fuel bound nitrogen to calculate the applicable NOx emission limit under §60.332. Hilcorp has not made such a claim for these units.
40 C.F.R. 60 Subpart KKKK – Standards of Performance for Stationary Combustion Turbines	Construction, modification, or reconstruction of each turbine commenced prior to the subpart applicability date of February 18, 2005.
40 C.F.R. 63 Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines	Stationary source is not a major source of HAP emissions.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)**Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	8, 9 // 1
2.	Date installation/construction commenced ¹	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	142497, 138763
5.	Special control requirements? [if yes, describe]	Air-fuel controllers and catalytic converters (NSCR)
6.	Manufacturer and model number	Waukesha L-7042G
7.	Type of combustion device	Gas-fired electric generator engine
8.	Rated design capacity (horsepower rating for engines)	810 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	NA
10.	If used for power generation, electrical output (kW)	483 kWe (based on estimated 80% generator efficiency)

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
 - NSPS Subparts GG and KKKK, and NESHAP Subpart YYYY for turbines.
- Note that other regulations may apply in addition to the regulations cited.*

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Fuel gas	5.67 MMBtu/hr (estimated based on 7,000 Btu/hp-hr and 810 hp)

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
1.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 8 and 9 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Records of equipment design (fuel gas combustion), routine maintenance, and good combustion practices. Operating Report statements indicating that each of these emissions units fire only gas.
6.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition VIII) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	Burn only gas as fuel. Certify in each Operating Report that each of these emissions units fired only gas. Notify ADEC if any fuel is burned other than gas.	Yes	EU IDs 8 and 9 burn only gas. Monitoring, recordkeeping, and reporting as required by this condition.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8,9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with fuel gas H ₂ S content limit of 200 ppmv (TVP02 permit Condition 13). Semi-annual lab analyses and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included with this application.
9.4	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard	Comply with the fuel gas H ₂ S content limit of 200 ppmv (Condition 13).	Yes	Records of compliance with the fuel gas 200 ppmv H ₂ S content limit as demonstrated by data included in the Operating Reports. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application.
9.5	Same as Condition 9.4	Sulfur Compound Emissions Standard MR&R	Monitor, record, and report according to Conditions 13.1, 13.4, and 13.5.	Yes	Monitoring, recordkeeping, and reporting as required by this condition.
9.6	Same as Condition 9.4	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the Sulfur Compound Emissions Standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8,9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Gaseous Fuel H ₂ S Content (Owner Requested Limit)	200 ppmv H ₂ S	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1, 13.4, 13.5, and 13.6. Records of natural gas demonstration. See January 26, 2009 letter to ADEC included in the Supporting Documentation section of this application. Compliance with the fuel gas H ₂ S content limit is demonstrated by records included in the Operating Reports.
13.1	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Monitoring	Measure the H ₂ S content of the process or natural gas using ASTM D4810, ASTM D4913, or GPA Method 2377-86 once every six months.	Yes	Semi-annual lab analyses are completed using GPA Method 2377-86 and results are included in the Operating Reports. The semi-annual fuel gas analysis results document that the fuel gas H ₂ S is well below the limit.
13.4, 13.5	Same as Condition 13	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Recordkeeping and Reporting	Maintain records of each H ₂ S content analysis and report the results of each analysis in the Operating Report.	Yes	The required information is recorded and reported in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Gaseous Fuel H ₂ S Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of 200 ppm gaseous fuel H ₂ S content limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
16	Permit to Operate No. 9623-AA007, Condition 6	Operational Limits	Operate and maintain the Waukesha gas-fired engines with air fuel controllers and catalytic converters.	Yes	Air-fuel controllers and catalytic converters are used and maintained on both units.
16.1	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Operational Limits Reporting	Certify in each Operating Report that each of these emissions units was operated with air fuel controllers and catalytic converters.	Yes	Operating Report statements indicating that these engines operate with air fuel controllers and catalytic converters.
16.2	Same as 16.1	Operational Limits Permit Deviation Reporting	Notify ADEC if either of the units is operated without air-fuel controllers and catalytic converters.	Yes	Both units operate with air-fuel controllers and catalytic converters. Any deviation from this condition is reported in a Permit Deviation Report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
16.3	Same as 16.1	Operational Limits Monitoring	Within 18 months of the permit effective date, conduct NO _x and diluent emissions source tests of EU IDs 8 and 9 at no less than three loads representing normal operating range using methods listed in Section 6. Determine NO _x emission factors for EU IDs 8 and 9 in g/hp-hr and lb/hr in accordance with this permit condition and attach determination to source test report.	Yes	The permit was effective April 30, 2009. EU ID 8 source test was conducted on March 9-10, 2010. Test Results: 0.74 g NO _x /bhp-hr and 0.5 lb NO _x /hr. EU ID 9 source test was conducted on March 10 and 15, 2010. Test Results: 0.51 g NO _x /bhp-hr and 0.39 lb NO _x /hr.
New (32.1 in proposed TVP03 permit)	40 C.F.R. 63.6665 & Table 8, Subpart ZZZZ 40 C.F.R. 63.1-63.15, Subpart A	NESHAP Subpart A General Provisions	Comply with the applicable provisions of 40 C.F.R. 63, Subpart A.	Yes	Compliance with applicable requirements of 40 C.F.R. 63, Subpart A, is demonstrated by records kept on file.
New (36 in proposed TVP03 permit)	40 C.F.R. 6605(a), Subpart ZZZZ	NESHAP Subpart ZZZZ Requirements for Existing SI Engines at an Area Source	Comply with the requirements of (new) Conditions 36.1 through 36.7 at all times.	Yes	Compliance is demonstrated by records kept on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8,9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (36.1 in proposed TVP03 permit)	40 C.F.R. 63.6603(a) & Table 2d, Item 12, Subpart ZZZZ	NESHAP Subpart ZZZZ Requirements for Existing SI Engines at an Area Source Equipment Standard	Install NSCR to reduce HAP emissions.	Yes	Catalytic converters are installed and maintained on both units. Records of operation and maintenance procedures are maintained on file.
New (36.2 in proposed TVP03 permit)	40 C.F.R. 63.6605(b), Subpart ZZZZ	NESHAP Subpart ZZZZ Good Air Pollution Control Practice	At all times, operate and maintain these engines in a manner consistent with safety and good air pollution control practices.	Yes	Records of operation and maintenance procedures are maintained on file.
New (36.3 in proposed TVP03 permit)	40 C.F.R. 63.6625(h) & Table 2d, Subpart ZZZZ	NESHAP Subpart ZZZZ Startup and Idle Time	Minimize the time spent at idle during startup and minimize the startup time not to exceed 30 minutes.	Yes	Records of operation and maintenance procedures are maintained on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (36.4 in proposed TVP03 permit)	40 C.F.R. 63.6625(b), §63.6630(a) and Table 5, Item 14.a.ii, §63.6640(a) and Table 6, Items 15.a.ii & 15.a.iii, Subpart ZZZZ	NESHAP Subpart ZZZZ Monitoring, Installation, Collection, and Compliance Demonstration Requirements	Install, operate, and maintain a Continuous Parametric Monitoring System (CPMS) as outlined in (new) Conditions 36.4a and 36.4b, or comply with (new) Condition 36.4c (i.e., install equipment to automatically shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F).	Yes	Equipment is installed that automatically shuts down the affected engine if the catalyst inlet temperature exceeds 1250 °F.
New (36.5 in proposed TVP03 permit)	40 C.F.R. 63.6612(a), §63.6630, Table 5, Items 14.a.i and 14.a.ii, Subpart ZZZZ 40 C.F.R. 63.7(a)(2), Subpart A	NESHAP Subpart ZZZZ Initial Compliance Demonstration	Conduct an initial compliance demonstration as specified in 40 C.F.R. 63.6630(e) by no later than 180 days after October 19, 2013; Install the equipment required under (new) Condition 36.4 by October 19, 2013; Submit the Notification of Compliance Status as required under (new) Condition 38.1.	Yes	Initial compliance testing was completed on EU ID 8: December 12, 2013 EU ID 9: December 28, 2013. The test results demonstrated compliance with the 30 percent total hydrocarbon (THC) reduction requirement as documented in the Notification of Compliance Status submitted to EPA on February 10, 2014. A copy of the notification is included in the Supporting Documentation section of this application. Equipment was installed as required to automatically shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (36.6 in proposed TVP03 permit)	40 C.F.R. 63.6635, Subpart ZZZZ	NESHAP Subpart ZZZZ Continuous Compliance Monitoring and Data Collection Requirements	Applicable to the optional CPMS under (new) Conditions 36.4a and 36.4b: Except as allowed, monitor continuously at all times that the stationary RICE is operating. Use all allowed data in averages and calculations used to report emission or operating levels.	NA	Hilcorp has elected to comply with the option to install equipment to automatically shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F. Therefore, this condition does not apply to these emissions units as currently configured at the stationary source.
New (36.7 in proposed TVP03 permit)	40 C.F.R. 63.6640(a), §63.6640(c) & Table 6, Item 15.a.i, Subpart ZZZZ	NESHAP Subpart ZZZZ Annual Compliance Demonstration	Comply with the annual compliance demonstration requirements as outlined in (new) Conditions 36.7a - 36.7h.	Yes	Annual compliance demonstrations (catalyst activity checks) are conducted as required. Test plans and reports/results are kept on file and submitted in accordance with applicable NESHAP Subpart ZZZZ and permit requirements. A test for CO was completed on EU ID 8: April 29, 2022 EU ID 9: April 28, 2022. The CO outlet concentrations were confirmed during the 2022 tests to be: EU ID 8: 73.3 ppm @ 15% O ₂ EU ID 9: 25.8 ppm @ 15% O ₂

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (37.1 in proposed TVP03 permit)	40 C.F.R. 63.6655(a), (b), & (d), Subpart ZZZZ	NESHAP Subpart ZZZZ Recordkeeping	Applicable to the optional CPMS under (new) Conditions 36.4a and 36.4b: Keep records of compliance as described in 40 C.F.R. 63.6655(a), (b), and (d).	Yes	Hilcorp has elected to comply with the option to install equipment to automatically shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F. Therefore, this condition does not apply to these emissions units as currently configured at the stationary source.
New (37.2 in proposed TVP03 permit)	40 C.F.R. 63.6660, 40 C.F.R. 63.6665, Table 8, Subpart ZZZZ; 40 C.F.R. 63.10(b)(1), Subpart A	NESHAP Subparts A and ZZZZ Recordkeeping	Keep records readily available for expeditious inspection and review in a hard copy or electronic form for at least 5 years. All records may be retained off site.	Yes	Recordkeeping as required by this condition.
New (38.1 in proposed TVP03 permit)	40 C.F.R. 63.6645(h), Subpart ZZZZ; 40 C.F.R. 63.9(h)(2)(ii), Subpart A	NESHAP Subpart ZZZZ Notifications	Submit a Notification of Compliance Status according to the requirements of 40 C.F.R. 63.6645(h) and 40 C.F.R. 63.9(h)(2)(ii) following completion of the initial compliance demonstration under (new) Condition 36.5a.	Yes	Records of required EPA notifications are kept on file and copies are provided to the Department upon submittal.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (38.2 in proposed TVP03 permit)	40 C.F.R. 63.6650(a), (b)(3)-(5), (c) & (e), Table 7, Item 3, Subpart ZZZZ	NESHAP Subpart ZZZZ Semi-annual Compliance Reports	Submit semi-annual Compliance Reports according to the requirements of 40 C.F.R. 63.6650(b)(3) – (5), (c), (e), and Table 7, Item 3 of Subpart ZZZZ.	Yes	Records of semi-annual Compliance Reports to EPA are kept on file and copies of the reports are provided to the Department upon submittal.
New (38.3 in proposed TVP03 permit)	40 C.F.R. 63.6640(b), (e) & §63.6650(f), Subpart ZZZZ	NESHAP Subparts A and ZZZZ Reporting	Include a report of NESHAP Subpart A and Subpart ZZZZ deviations in the Operating Report.	Yes	Any deviation from applicable requirements is reported in the Operating Report.
New (38.4 in proposed TVP03 permit)	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	NESHAP Subparts A and ZZZZ Permit Deviation Reporting	Notify ADEC of any deviations from any of the applicable NESHAP Subparts A and ZZZZ requirements.	Yes	Any deviation from applicable permit requirements is reported in a Permit Deviation report.
~~39.1~~	~~18 AAC 50.030 18 AAC 50.326(j)(3) 18 AAC 50.346(b)(5) (Standard Operating Permit Condition VI)~~	~~Good Air Pollution Control Practice~~	~~Perform regular maintenance according to manufacturer's or operator's maintenance procedures.~~	NA	This condition is no longer applicable to these units.
~~39.2~~	~~Same as Condition 39.1~~	~~Good Air Pollution Control Practice~~	~~Keep records of any maintenance that would have a significant effect on emissions.~~	NA	This condition is no longer applicable to these units.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **8, 9 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
~~39.3~~	~~Same as Condition 39.1~~	~~Good Air Pollution Control Practice~~	~~Keep a copy of manufacturer's or operator's maintenance procedures.~~	NA	This condition is no longer applicable to these units.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02** ☐**Emissions Unit ID No. // Operating Scenario:** **8, 9 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	This subpart applies to compression ignition engines. These engines are spark ignition engines.
40 C.F.R. 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Construction, modification, or reconstruction of these engines commenced prior to the subpart applicability date of June 12, 2006.
40 C.F.R. 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines 40 C.F.R. 63.6604 – Fuel Requirements	These engines are not compression ignition engines.
40 C.F.R. 63 Subpart ZZZZ §63.6615 - Subsequent Testing §63.6620 - Performance Tests and Procedures	These engines are subject to an equipment standard, not a numerical emission limitation under Subpart ZZZZ. The initial compliance demonstration and annual continuous compliance demonstrations require verification of “compliance demonstration levels” via an abbreviated stack test but such tests are not considered “performance tests” under Subpart ZZZZ.
40 C.F.R. 63 Subpart ZZZZ §63.6625(a) - Monitoring, Installation, Collection, Operation and Maintenance Requirements	No CEMS requirement for these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6625(e) - Monitoring, Installation, Collection, Operation and Maintenance Requirements	These engines are not the type of RICE listed under §63.6625(e)(1) – (10).

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **8, 9 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6625(f) – Monitoring, Installation, Collection, Operation and Maintenance Requirements §63.6640(f) – Continuous Compliance Demonstration §63.6650(h) – Reporting Requirements for Certain Emergency Engines	These are not emergency engines.
40 C.F.R. 63 Subpart ZZZZ §63.6645(a) - Notification Requirements 40 C.F.R. 63.8(e), (f)(4) & (f)(6), Subpart A – Monitoring Requirements 40 C.F.R. 63.9(b) – (e), (g) & (h), Subpart A – Notification Requirements	These engines are subject to an equipment standard, not a numerical emission limitation under Subpart ZZZZ. Per 40 C.F.R. 63.6645(a)(5), existing stationary RICE that are not subject to any numerical emission standards are not subject to the notification requirements of these sections.
40 C.F.R. 63 Subpart ZZZZ §6645(b) – (f), Subpart ZZZZ – Notification Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 64 – Compliance Assurance Monitoring	Rule applies to emissions units that use an add-on control device to meet an emission limit or standard and that have pre-control emissions greater than 100 tons/yr for the pollutant for which the control device is operated. These units do not have pre-control device NOx emissions greater than 100 tons/yr.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	20, 21 // 1
2.	Date installation/construction commenced¹	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	75b887, 75b884
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Caterpillar D-398
7.	Type of combustion device	Engine
8.	Rated design capacity (horsepower rating for engines)	795 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	NA
10.	If used for power generation, electrical output (kW)	474 kWe (based on estimated 80% generator efficiency)

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
 - NSPS Subparts GG and KKKK, and NESHAP Subpart YYYY for turbines.
- Note that other regulations may apply in addition to the regulations cited.*

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	39.9 gallons/hr

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Compliance with the visible emissions standard is demonstrated by MR&R in accordance with Conditions 2 through 4.
1.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	Monitor, record, and report visible emissions in accordance with Conditions 2 - 4.	Yes	MR&R in accordance with Conditions 2 through 4.
2, 2.1, 2.1a - 2.1e, 2.2, 2.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 60, Appendix A-4 (Method 9) 40 C.F.R. 71.6(a)(3)(i)	Visible Emissions Standard Monitoring	Perform visible emissions monitoring as required under Condition 2.1 on the schedule outlined in Conditions 2.1a - 2.1e, or 2.2 and 2.3.	Yes	Annual monitoring is completed as required by Condition 2.1d as demonstrated by data included in the Operating Reports. [Note: We have requested that the smoke/no smoke plan language (TVP02 Conditions 2.2 and 2.3) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
3, 3.1a - 3.1c, 3.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(ii)	Visible Emissions Standard Recordkeeping	Keep records as required by Conditions 3.1a - 3.1c or 3.2.	Yes	Recordkeeping is completed as required by these conditions. [Note: We have requested that the smoke/no smoke plan language (TVP02 Condition 3.2) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
4, 4.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Visible Emissions Standard Reporting	Report as required by Condition 4.1.	Yes	Reporting is completed as required by these conditions. [Note: We have requested that the smoke/no smoke plan language be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4.2a	Same as Condition 4.1	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of an applicable standard is reported in an Excess Emissions report.
4.2b	Same as Condition 4.1	Visible Emissions Standard Permit Deviation Reporting	If any monitoring under Condition 2 was not performed when required, notify ADEC within three days of the monitoring deadline date.	Yes	When triggered, reporting will be completed as required by this condition.
6	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Compliance with the PM emissions standard is demonstrated by MR&R in accordance with Conditions 7 and 8.
6.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	Monitor, record, and report particulate matter emissions in accordance with Conditions 7 and 8, if required, dependent upon the results of Method 9 visible emissions observations.	Yes	Compliance with the PM emissions standard is demonstrated by MR&R in accordance with Conditions 7 and 8.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
7, 7.1, 7.2, 7.3, 7.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(i)	Particulate Matter Emissions Standard Diesel-Fired Engine Monitoring	Conduct a PM source test or repair equipment no later than 6 months after a Method 9 observation results in an 18-minute average opacity >20 percent.	Yes	When triggered, monitoring is completed as required by these conditions. Source testing has not been triggered. There have been no Method 9 observation results greater than 20%.
8, 8.1, 8.2, 8.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Particulate Matter Emissions Standard Diesel-Fired Engine Reporting	When Condition 8 is triggered, report as outlined in Conditions 8.1 - 8.3.	Yes	When triggered, reporting is completed as required by these conditions. Monitoring and reporting have not been triggered for EU IDs 20 and 21.
9	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with liquid fuel sulfur content limit of 0.25 wt% (TVP02 permit Condition 13). Records of third-party delivery receipts and copies of these records are provided in the Operating Report. Fuel delivery receipts and accompanying product analyses provided by the fuel supplier document that the liquid fuel sulfur content is below the limit.
9.1, 9.2	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard MR&R	Comply with the fuel sulfur content limit of 0.25 percent sulfur by weight (Condition 13). Monitor, record and report as required by Conditions 13.2 – 13.5.	Yes	Compliance with the liquid fuel 0.25 wt% sulfur content limit is demonstrated by data included in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
12, 12.1	Condition 9 of Minor Permit No. AQ0091MSS03 Rev. 2	NOx Emissions (Owner Requested Limit)	Limit the combined NOx emissions from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per rolling 12-month period (expressed as NO ₂) by limiting fuel consumption such that the equation in Condition 12.1 holds true.	Yes	Records demonstrating compliance with the NOx emissions limit are included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 12.2 through 12.8.
12.2	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring	Monitor diesel fuel use using either: a) a fuel meter with a minimum accuracy of plus or minus five percent; or b) measurement techniques and calculations approved by the Department.	Yes	Diesel fuel usage is monitored using a fuel meter meeting the requirements of this condition and is reported in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.3	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Recordkeeping and Calculations	Maintain records of monthly (calendar) and rolling 12-month fuel use. Each calendar month use the rolling 12-month fuel use to calculate and record total annual NOx emissions from all units combined according to the equation presented in Condition 12.1.	Yes	Recordkeeping as required by this condition. Fuel use records and calculated emissions are included in the Operating Reports.
12.4, 12.5	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring and Recordkeeping	Monitor and maintain records of the monthly (calendar) and rolling 12-month hours of operation.	Yes	Monitoring and recordkeeping as required by these conditions.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.6, 12.6a, 12.6b	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) MR&R	If any one or more fuel meters did not function for any period of time when fuel was being supplied to any affected emissions unit, then: a) Use monthly (calendar) and rolling 12-month hours of operation to calculate combined monthly and combined rolling 12-month NOx emissions. Use maximum NOx emission rate in lb/hr listed in permit Section 11. b) Report rolling 12-month NOx emissions calculated under Condition 12.6a and monthly (calendar) hours of operation in the Operating Report.	Yes	When triggered, NOx emissions calculations for the affected emissions units are performed based on operating time and the resulting calculations and operating time data are reported in the Operating Reports.
12.7	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Reporting	Report the combined 12-month consecutive NOx emissions and the rolling 12-month fuel usage in the Operating Report.	Yes	The required information is included in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.8	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 20.2 ton rolling 12-month NOx emission limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions Report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Liquid Fuel Sulfur Content (Owner Requested Limit)	0.25% sulfur by weight.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.2 through 13.6.
13.2, 13.3, 13.4, 13.5	Same as Condition 13	Liquid Fuel Sulfur Content (Owner Requested Limit) MR&R	Monitoring, recordkeeping, and reporting of third-party diesel fuel deliveries and sulfur content.	Yes	Records of third-party delivery receipts and copies of these records provided in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Liquid Fuel Sulfur Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 0.25 wt% limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
New (32.1 in proposed TVP03 permit)	40 C.F.R. 63.6665 & Table 8, Subpart ZZZZ 40 C.F.R. 63.1-63.15, Subpart A	NESHAP Subpart A General Provisions	Comply with the applicable provisions of 40 C.F.R. 63, Subpart A.	Yes	Compliance with applicable requirements of 40 C.F.R. 63, Subpart A is demonstrated by records kept on file.
New (39 in proposed TVP03 permit)	40 C.F.R. 63.6590(a)(1)(iii) & §63.6605(a), Subpart ZZZZ	NESHAP Subpart ZZZZ Requirements	Comply with the applicable provisions of 40 C.F.R. 63, Subpart ZZZZ at all times.	Yes	Compliance is demonstrated by records kept on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (39.1 in proposed TVP03 permit)	40 C.F.R. 63.6605(b), §63.6625(e), §63.6640(a), Table 6 (Item 9), Subpart ZZZZ	NESHAP Subpart ZZZZ Good Air Pollution Control Practice	At all times, operate and maintain these units in a manner consistent with safety and good air pollution control practices. Comply with either: a. the manufacturer's emission-related written operation and maintenance instructions; or b. a maintenance plan developed by the Permittee which provides for the maintenance and operation of the engines in a manner consistent with good air pollution control practices.	Yes	Hilcorp complies with Conditions 39.1a and 39.1b. Records of operation and maintenance procedures are maintained on file.
New (39.2 in proposed TVP03 permit)	40 C.F.R. 63.6625(h) and Table 2d, Subpart ZZZZ	NESHAP Subpart ZZZZ Startup and Idle Time	Minimize the time spent at idle during startup and minimize the startup time not to exceed 30 minutes.	Yes	Records of operation and maintenance procedures are maintained on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (39.3 in proposed TVP03 permit)	40 C.F.R. 63.6603(a), §63.6603(b), §63.6625(i), Table 2d (Item 1), Table 2d, Footnote 1, Subpart ZZZZ	NESHAP Subpart ZZZZ Emissions Management Practices	Change the oil and filter and inspect and replace (if necessary) the air cleaner, all hoses and belts on the schedule required under these conditions. Optionally use an oil analysis program as described in 40 C.F.R. 63.6625(i) to extend the specified oil change requirement.	Yes	Records of operation and maintenance procedures are maintained on file.
New (40.1 in proposed TVP03 permit)	40 C.F.R. 63.6655(e), 75 FR 9654, Subpart ZZZZ	NESHAP Subpart ZZZZ Recordkeeping	Keep maintenance records to demonstrate that the engines are operated and maintained according to the Permittee's own maintenance plan (if maintenance is performed as allowed under new Condition 39.1b).	Yes	Records of operation and maintenance procedures are maintained on file.
New (40.2 in proposed TVP03 permit)	40 C.F.R. 63.6660, 40 C.F.R. 63.6665, Table 8, Subpart ZZZZ; 40 C.F.R. 63.10(b)(1), Subpart A	NESHAP Subparts A and ZZZZ Recordkeeping	Keep records readily available for expeditious inspection and review in hard copy or electronic form for at least 5 years. All records may be retained off site.	Yes	Recordkeeping as required by this condition.

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Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **20, 21 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (41.1 in proposed TVP03 permit)	40 C.F.R. 63.6640(e), 40 C.F.R. 63.6650(f), Subpart ZZZZ	NESHAP Subparts A and ZZZZ Reporting	Include a report of NESHAP Subpart A and Subpart ZZZZ deviations in the Operating Report.	Yes	Any deviation from applicable requirements is reported in the Operating Report.
New (41.2 in proposed TVP03 permit)	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	NESHAP Subparts A and ZZZZ Permit Deviation Reporting	Notify ADEC of any deviations from any of the applicable NESHAP Subparts A and ZZZZ requirements.	Yes	Any deviation from applicable permit requirements is reported in a Permit Deviation report.
~~39.1~~	~~18 AAC 50.030 18 AAC 50.326(j)(3) 18 AAC 50.346(b)(5) (Standard Operating Permit Condition VI)~~	~~Good Air Pollution Control Practice~~	~~Perform regular maintenance according to manufacturer's or operator's maintenance procedures.~~	NA	This condition is no longer applicable to these units.
~~39.2~~	~~Same as Condition 39.1~~	~~Good Air Pollution Control Practice~~	~~Keep records of any maintenance that would have a significant effect on emissions.~~	NA	This condition is no longer applicable to these units.
~~39.3~~	~~Same as Condition 39.1~~	~~Good Air Pollution Control Practice~~	~~Keep a copy of manufacturer's or operator's maintenance procedures.~~	NA	This condition is no longer applicable to these units.

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Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **20, 21 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	These emissions units were manufactured prior to the April 1, 2006 applicability date of this rule (see 40 C.F.R. 60.4200(a)(2)(i)) and have not been modified or reconstructed after July 11, 2005 (see 40 C.F.R. 60.4200(a)(3)).
40 C.F.R. 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This subpart applies to spark ignition engines. These engines are compression ignition engines.
40 C.F.R. 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines 40 C.F.R. 63.6600, §63.6601, and §63.6602 – Emission Limitations, Operating Limitations, and other Requirements at HAP Major Sources	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Tables 2a and 2c – Emission Limitations and Other Requirements at HAP Major Sources	There are no requirements in Tables 2a or 2c of Subpart ZZZZ that apply to these engines because they are existing CI RICE located at an area source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Table 2b – Operating Limitations	The requirements of Table 2b of Subpart ZZZZ do not apply to these engines because there are no applicable emission limitations (i.e., the CO emission limitations in Table 2d do not apply) for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the Federal Aid Highway System (FAHS). [40 C.F.R. 63.6603(b)(1)]
40 C.F.R. 63 Subpart ZZZZ Table 2d – CO Emission Limitations	Per §63.6603(b)(1), the CO emission limits in Table 2d do not apply to existing stationary non-emergency CI RICE >300 bhp located at area sources in areas of Alaska not accessible by the FAHS.
40 C.F.R.63 Subpart ZZZZ §63.6604 – Fuel Requirements	The requirement to comply with 40 C.F.R. 1090.305 does not apply to existing non-emergency engines located at area sources in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6604(d)]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

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Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **20, 21 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6610 and §63.6611 – Testing and Initial Compliance Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6612 – Testing and Initial Compliance Requirements	There are no requirements in either Table 4 or Table 5 of Subpart ZZZZ that apply to these engines because there are no applicable CO emission limitations for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6603(b)(1)]
40 C.F.R. 63 Subpart ZZZZ §63.6615 – Subsequent Testing §63.6620 – Performance Tests and Procedures Table 3 – Subsequent Performance Tests Table 4 – Requirements for Performance Tests	There are no performance testing requirements that apply to these engines because there are no CO emission limitations for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6603(b)(1)]
40 C.F.R. 63 Subpart ZZZZ §63.6625(a) & (b) – Monitoring, Installation, Collection, Operation and Maintenance Requirements	These requirements do not apply to these engines because there are no CO emission limitations for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6603(b)(1)]
40 C.F.R. 63 Subpart ZZZZ §63.6625(f) – Monitoring, Installation, Collection, Operation and Maintenance Requirements	These are not emergency engines.
40 C.F.R. 63 Subpart ZZZZ §63.6625(g) – Monitoring, Installation, Collection, Operation and Maintenance Requirements	This requirement does not apply to existing non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6625(g)]
40 C.F.R. 63 Subpart ZZZZ §63.6630 – Initial Compliance Demonstration Table 5 – Initial Compliance with Emission Limitations, Operating Limitations, and Other Requirements	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to these engines.

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Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **20, 21 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6635 – Monitoring to Demonstrate Continuous Compliance	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6640(f) – Continuous Compliance Demonstration	These are not emergency engines.
40 C.F.R. 63 Subpart ZZZZ §63.6645(a) – Notification Requirements 40 C.F.R. 63.8(e), (f)(4) & (f)(6), Subpart A – Monitoring Requirements 40 C.F.R. 63.9(b)-(e), (g) & (h), Subpart A – Notification Requirements	Per 40 C.F.R. 63.6645(a)(5), existing stationary RICE that are not subject to any numerical emission standards are not subject to the notification requirements of these sections.
40 C.F.R. 63 Subpart ZZZZ §63.6645(b) – (f) – Notification Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6645(h) – Notification Requirements	There are no performance testing or other initial compliance demonstration requirements that apply to these engines because there are no emission or operating limits that apply.
40 C.F.R. 63 Subpart ZZZZ §63.6640(b) and §63.6650(a) – (e) – Reporting Requirements	Compliance status reporting requirements only apply to CI RICE subject to numerical emissions or operating limits. There are no emissions or operating limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6650(h) – Reporting Requirements for Certain Emergency Engines	These are not emergency engines.

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Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **20, 21 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6655(a), (b) & (d) – Recordkeeping Requirements	There are no emission or operational limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6655(f) – Recordkeeping Requirements	These engines are not classified as emergency engines for purposes of Subpart ZZZZ. Therefore, they are not required to limit hours of operation per 40 C.F.R. 63.6640(f).
40 C.F.R. Subpart ZZZZ §63.6645(g) – Notification Requirements 40 C.F.R. 63.7, Subpart A – Performance Testing Requirements	There are no performance testing requirements that apply to these engines because there are no emission limits that apply.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	24 // 1
2.	Date installation/construction commenced¹	September 21, 2012 Build Date: 1/15/2013
3.	Date installed	2013
4.	Emissions Unit serial number	D9N00478
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Caterpillar C9.3
7.	Type of combustion device	Diesel Fired Engine [Model Year 2013; EPA Tier 4i]
8.	Rated design capacity (horsepower rating for engines)	350 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	NA
10.	If used for power generation, electrical output (kW)	NA

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
 - NSPS Subparts GG and KKKK, and NESHAP Subpart YYYY for turbines.
- Note that other regulations may apply in addition to the regulations cited.*

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	17.2 gal/hr

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

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Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **24 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1, 18	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Reasonable Inquiry Actual emissions for EU ID 24 classify this engine as insignificant.
1.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	If emissions unit is insignificant based on actual emissions, annually certify compliance with the visible emissions standard based on reasonable inquiry. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 2 – 4.	Yes	EU ID 24 is insignificant based on annual estimates of actual emissions for fees and emissions inventory reports. Annual compliance certifications based on reasonable inquiry.
2, 2.1, 2.1a - 2.1e, 2.2, 2.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 60, Appendix A-4 (Method 9) 40 C.F.R. 71.6(a)(3)(i)	Visible Emissions Standard Monitoring	When Condition 2 is triggered, perform visible emissions monitoring as required under Condition 2.1 on the schedule outlined in Conditions 2.1a - 2.1e, or 2.2 and 2.3.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring under these conditions has not been triggered for EU ID 24. [Note: We have requested that the smoke/no smoke plan language (TVP02 Conditions 2.2 and 2.3) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

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Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **24 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
3, 3.1a - 3.1c, 3.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(ii)	Visible Emissions Standard Recordkeeping	When Condition 3 is triggered, keep records as required by Conditions 3.1a - 3.1c or 3.2.	Yes	When triggered, recordkeeping is completed as required by these conditions. Monitoring and recordkeeping have not been triggered for EU ID 24. [Note: We have requested that the smoke/no smoke plan language (TVP02 Condition 3.2) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4, 4.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Visible Emissions Standard Reporting	When Condition 4 is triggered, report as required by Condition 4.1.	Yes	When triggered, reporting is completed as required by these conditions. Monitoring and reporting have not been triggered for EU ID 24. [Note: We have requested that the smoke/no smoke plan language (portions of TVP02 Condition 4.1) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4.2a	Same as Condition 4.1	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of an applicable standard is reported in an Excess Emissions report.
4.2b	Same as Condition 4.1	Visible Emissions Standard Permit Deviation Reporting	If any monitoring under Condition 2 was not performed when required, notify ADEC within three days of the monitoring deadline date.	Yes	When triggered, reporting will be completed as required by this condition.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6, 19	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Reasonable Inquiry Actual emissions for EU ID 24 classify this engine as insignificant.
6.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	If EU is insignificant based on actual emissions, annually certify compliance with the particulate matter emissions standard. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 7 and 8.	Yes	EU ID 24 is insignificant based on annual estimates of actual emissions for fees and emissions inventory reports. Annual compliance certifications based on reasonable inquiry.
7, 7.1, 7.2, 7.3, 7.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(i)	Particulate Matter Emissions Standard Diesel-Fired Engine Monitoring	When Condition 7 is triggered, perform PM emissions monitoring as outlined in Conditions 7.1 - 7.4.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring has not been triggered for EU ID 24.
8, 8.1, 8.2, 8.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Particulate Matter Emissions Standard Diesel-Fired Engine Reporting	When Condition 8 is triggered, report as outlined in Conditions 8.1 - 8.3.	Yes	When triggered, reporting is completed as required by these conditions. Reporting has not been triggered for EU ID 24.

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Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **24 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9, 20	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with liquid fuel sulfur content limit of 0.25 wt% (TVP02 permit Condition 13). Records of third-party delivery receipts and copies of these records are provided in the Operating Report. Fuel delivery receipts and accompanying product analyses provided by the fuel supplier document that the liquid fuel sulfur content is below the limit.
9.1, 9.2	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard MR&R	Comply with the fuel sulfur content limit of 0.25 percent sulfur by weight (Condition 13). Monitor, record, and report as required by Conditions 13.2 – 13.5.	Yes	Compliance with the liquid fuel 0.25 wt% sulfur content limit is demonstrated by data included in the Operating Reports.
9.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
12, 12.1	Condition 9 of Minor Permit No. AQ0091MSS03 Rev. 2	NO _x Emissions (Owner Requested Limit)	Limit the combined NO _x emissions from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per rolling 12-month period (expressed as NO ₂) by limiting fuel consumption such that the equation in Condition 12.1 holds true.	Yes	Records demonstrating compliance with the NO _x emissions limit are included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 12.2 through 12.8.

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Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.2	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring	Monitor diesel fuel use using either: a) a fuel meter with a minimum accuracy of plus or minus five percent; or b) measurement techniques and calculations approved by the Department.	Yes	Diesel fuel usage is monitored using a fuel meter meeting the requirements of this condition and is reported in the Operating Reports.
12.3	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Recordkeeping and Calculations	Maintain records of monthly (calendar) and rolling 12-month fuel use. Each calendar month use the rolling 12-month fuel use to calculate and record total annual NOx emissions from all units combined according to the equation presented in Condition 12.1.	Yes	Recordkeeping as required by this condition. Fuel use records and calculated emissions are included in the Operating Reports.
12.4, 12.5	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring and Recordkeeping	Monitor and maintain records of the monthly (calendar) and rolling 12-month hours of operation.	Yes	Monitoring and recordkeeping as required by these conditions.

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Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.6, 12.6a, 12.6b	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) MR&R	If any one or more fuel meters did not function for any period of time when fuel was being supplied to any affected emissions unit, then: a) Use monthly and rolling 12-month hours of operation to calculate combined monthly and combined rolling 12-month NOx emissions. Use maximum NOx emission rate in lb/hr listed in permit Section 11. b) Report rolling 12-month NOx emissions calculated under Condition 12.6a and monthly hours of operation in the Operating Report.	Yes	When triggered, NOx emissions calculations for the affected emissions units are performed based on operating time and the resulting calculations and operating time data are reported in the Operating Reports.
12.7	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Reporting	Report the combined 12-month consecutive NOx emissions and the rolling 12-month fuel usage in the Operating Report.	Yes	The required information is included in the Operating Reports.
12.8	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 20.2 ton rolling 12-month NOx emission limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions Report.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev 1	Liquid Fuel Sulfur Content (Owner Requested Limit)	0.25% sulfur by weight.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.2 through 13.6.
13.2, 13.3, 13.4, 13.5	Same as Condition 13	Liquid Fuel Sulfur Content (Owner Requested Limit) MR&R	Monitoring, recordkeeping, and reporting of third-party diesel fuel deliveries and sulfur content.	Yes	Records of third-party delivery receipts and copies of these records provided in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Liquid Fuel Sulfur Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 0.25 wt% limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
17.1	18 AAC 50.346(b)(4)	Insignificant Emissions Units Compliance Certification	Submit the compliance certification for insignificant emissions units based on reasonable inquiry.	Yes	Annual compliance certifications based on reasonable inquiry.
17.3	Same as Condition 17.1	Insignificant Emissions Units with Actual Emissions > Significant Emissions Thresholds	Report in the Operating Report if actual emissions from the emissions unit become greater than any of the significant emissions thresholds.	Yes	When triggered, reporting is completed as required by this condition.

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Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
28	40 C.F.R. 60.12, Subpart A	NSPS Subpart A Concealment of Emissions (Circumvention)	Do not build, erect, install, or use any article, machine, equipment or process that conceals an emission which would otherwise constitute a violation of the NSPS Subpart IIII emission standard.	Yes	Reasonable inquiry. Activities which would conceal emissions or otherwise constitute circumvention of an applicable standard are not conducted.
New (31.1 in proposed TVP03 permit)	40 C.F.R. 60.4201(a), §60.4204(b), §60.4211(c), Subpart IIII 40 C.F.R. 1039.102, Table 6, Subpart B	NSPS Subpart IIII Engine Model Year Conformity Installation and Configuration	Purchase an engine certified to meet the emission standards in Table 6 of 40 C.F.R. 1039.102 (EPA Tier 4-interim). The engine must be installed and configured according to the manufacturer's emission-related specifications except as allowed under (new) Condition 31.5.	Yes	Records of manufacturer certification of Tier 4 interim emissions compliance for the engine. Records of engine installation and configuration according to manufacturer's specifications.
New (31.3 in proposed TVP03 permit)	40 C.F.R. 60.4206, Subpart IIII	NSPS Subpart IIII Compliance Requirements	Operate and maintain the engine to achieve the emission standards in (new) Condition 31.1 over the entire life of the engine.	Yes	The engine is operated and maintained according to the manufacturer's emission-related instructions as demonstrated by records kept on file.

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Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.4 in proposed TVP03 permit)	40 C.F.R. 60.4211(a), Subpart IIII	NSPS Subpart IIII Compliance Requirements	Except as allowed under (new) Condition 31.5, operate and maintain the stationary CI ICE and control device (if applicable) according to the manufacturer's emission- related written instructions. Change only those emission-related settings that are permitted by the manufacturer.	Yes	Records of operating and maintenance procedures are maintained on file.

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Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **24 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.5, 31.5a – 31.5c in proposed TVP03 permit)	40 C.F.R. 60.4211(g)(2), Subpart IIII	NSPS Subpart IIII Compliance Requirements	If the engine is not installed and configured according to the manufacturer's emission-related specifications, or the engine and control device are not operated and maintained according to the manufacturer's emission-related written instructions, or if emission-related settings are changed in a way that is not permitted by the manufacturer, demonstrate compliance as follows: a. Keep a maintenance plan and records of conducted maintenance; b. Maintain and operate the engine in manner consistent with good air pollution control practice; and c. Conduct an initial performance test within 1 year of each action described in this condition.	Yes	Not triggered. Records of engine installation, configuration, operation, and maintenance according to the manufacturer's emission-related instructions.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **24 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.6 in proposed TVP03 permit)	40 C.F.R. 60.4212, Subpart IIII	NSPS Subpart IIII Test Methods and Procedures	Conduct the performance test under (new) Condition 31.5c in accordance with 40 C.F.R. 60.4212.	Yes	Not triggered. Records of engine installation, configuration, operation, and maintenance according to the manufacturer's emission-related instructions.
New (31.7 in proposed TVP03 permit)	40 C.F.R. 60.4209(b), Subpart IIII	NSPS Subpart IIII Diesel Particulate Filter Monitoring	If the stationary CI ICE is equipped with a diesel particulate filter to comply with applicable emission standards, it must be installed with a backpressure monitor that notifies the Permittee when the high backpressure limit of the engine is approached.	Yes	Monitoring as required by this condition.
New (31.8a in proposed TVP03 permit)	40 C.F.R. 60.4214(c), Subpart IIII	NSPS Subpart IIII Diesel Particulate Filter Recordkeeping	If the stationary CI ICE is equipped with a diesel particulate filter, keep records of any corrective action taken after receiving notification from the monitor that the high backpressure limit was approached.	Yes	Recordkeeping as required by this condition.
New (31.8b in proposed TVP03 permit)	40 C.F.R. 71.6(a)(3) & (c)(6)	NSPS Subpart IIII Certificate of Conformity Recordkeeping	Maintain records of the manufacturer's certification that the engine meets the emission standards referenced in (new) Condition 31.1.	Yes	Recordkeeping as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **24 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.9 in proposed TVP03 permit)	40 C.F.R. 71.6(a)(3) & (c)(6)	NSPS Subpart IIII Excess Emissions and Permit Deviation Reporting	Notify ADEC of any deviation from the requirements in (new) Condition 31.	Yes	Any deviation from applicable permit requirements is reported in an Excess Emissions or Permit Deviation Report.
New (35 in proposed TVP03 permit)	40 C.F.R. 63.6585, §63.6590(c)(1), Subpart ZZZZ	NESHAP Subpart ZZZZ Comply with NSPS Subpart IIII	Comply with 40 C.F.R. 63 Subpart ZZZZ by meeting the applicable requirements of 40 C.F.R. 60 Subpart IIII.	Yes	Records of installation, operation, and maintenance of the engine according to the requirements of NSPS Subpart IIII (new permit Condition 31).

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **24 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60.4201(b) – (e), Subpart IIII – Emission Standards for Non-Emergency Engines	The engine is rated less than 3000 hp and is not a marine engine.
40 C.F.R. 60.4202, Subpart IIII – Emission Standards for Emergency Engines	Not an emergency engine.
40 C.F.R. 60.4204(a), Subpart IIII – Emission Standards for Non-Emergency Engines	The engine is not a pre-2007 model year engine.
40 C.F.R. 60.4204(c), Subpart IIII – Emission Standards for Non-Emergency Engines	The engine does not have a displacement greater than or equal to 30 liters per cylinder.
40 C.F.R. 60.4205, Subpart IIII – Emission Standards for Emergency Engines	Not an emergency engine.
40 C.F.R. 60.4207, Subpart IIII – Fuel Requirements for Engines Subject to Subpart IIII	The stationary source is located in an area that is not accessible by the Federal Aid Highway System and the engine is a pre-2014 model year engine. [40 C.F.R. 60.4216(d)]
40 C.F.R. 60.4209(a), Subpart IIII – Monitoring Requirements	Not an emergency engine.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **24 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60.4211(b), Subpart IIII – Compliance Requirements for Owners/Operators	The engine is not a pre-2007 model year engine.
40 C.F.R. 60.4211(d), Subpart IIII – Compliance Requirements for Owners/Operators	The engine does not have a displacement greater than or equal to 30 liters per cylinder.
40 C.F.R. 60.4211(f), Subpart IIII – Compliance Requirements for Owners/Operators	Not an emergency engine.
40 C.F.R. 60.7, Subpart A – Notification and Recordkeeping 40 C.F.R. 60.4214(a), Subpart IIII – Notification, Reporting, and Recordkeeping Requirements	The engine: 1) is not rated greater than 2,237 kW (3,000 hp); 2) does not have a displacement of greater than or equal to 10 liters per cylinder; and 3) is not a pre-2007 model year engine. (See NSPS Subpart IIII, Table 8, and §60.4214(a) for applicability of 40 C.F.R. 60.7 to engines affected by Subpart IIII.)
40 C.F.R. 60.4214(b), (d), Subpart IIII – Notification, Reporting, and Recordkeeping Requirements	Not an emergency engine.
40 C.F.R. 60.11, Subpart A – Compliance with Standards and Maintenance Requirements	40 C.F.R. 60.11 is specifically excluded from the list of Subpart A elements that apply to engines subject to NSPS Subpart IIII. [Subpart IIII, Table 8]
40 C.F.R. 60.13, Subpart A – Monitoring Requirements	The engine does not have a displacement greater than or equal to 30 liters per cylinder. [Subpart IIII, Table 8]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)**

Permit Number: **AQ0091TVP02** ☐**Emissions Unit ID No. // Operating Scenario:** **24 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This subpart applies to spark ignition engines. This engine is a compression ignition engine.
40 C.F.R. 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	There are no requirements that apply to new engines located at an area source of HAP emissions, except for the requirement to comply with the applicable requirements of 40 C.F.R. 60, Subpart IIII. [40 C.F.R. 63.6590(c)(1)]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	25 // 1
2.	Date installation/construction commenced¹	2009
3.	Date installed	May 2022
4.	Emissions Unit serial number	RG6135LOO5271
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	John Deere 6135HF485F (Replacement Unit)
7.	Type of combustion device	Diesel Fired Engine [Model Year 2008; EPA Tier 3]
8.	Rated design capacity (horsepower rating for engines)	500 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	NA
10.	If used for power generation, electrical output (kW)	NA

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	25.5 gal/hr

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1, 18	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Records of Method 9 observations.
1.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	If emissions unit is insignificant based on actual emissions, annually certify compliance with the visible emissions standard based on reasonable inquiry. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 2 – 4.	Yes	Monitoring, recordkeeping, and reporting according to Conditions 2 – 4.
2, 2.1, 2.1a - 2.1e, 2.2, 2.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 60, Appendix A-4 (Method 9) 40 C.F.R. 71.6(a)(3)(i)	Visible Emissions Standard Monitoring	When Condition 2 is triggered, perform visible emissions monitoring as required under Condition 2.1 on the schedule outlined in Conditions 2.1a - 2.1e, or 2.2 and 2.3.	Yes	Monitoring according to Condition 2.1. [Note: We have requested that the smoke/no smoke plan language (TVP02 Conditions 2.2 and 2.3) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
3, 3.1a - 3.1c, 3.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(ii)	Visible Emissions Standard Recordkeeping	When Condition 3 is triggered, keep records as required by Conditions 3.1a - 3.1c or 3.2.	Yes	Recordkeeping as required by these conditions. [Note: We have requested that the smoke/no smoke plan language (TVP02 Condition 3.2) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4, 4.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Visible Emissions Standard Reporting	When Condition 4 is triggered, report as required by Condition 4.1.	Yes	Reporting as required by this condition. [Note: We have requested that the smoke/no smoke plan language (portions of TVP02 Condition 4.1) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4.2a	Same as Condition 4.1	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of an applicable standard is reported in an Excess Emissions report.
4.2b	Same as Condition 4.1	Visible Emissions Standard Permit Deviation Reporting	If any monitoring under Condition 2 was not performed when required, notify ADEC within three days of the monitoring deadline date.	Yes	When triggered, reporting will be completed as required by this condition.
6, 19	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Monitoring, recordkeeping, and reporting according to Conditions 7 and 8.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	If EU is insignificant based on actual emissions, annually certify compliance with the particulate matter emissions standard. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 7 and 8.	Yes	Monitoring, recordkeeping, and reporting according to Conditions 7 and 8.
7, 7.1, 7.2, 7.3, 7.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(i)	Particulate Matter Emissions Standard Diesel-Fired Engine Monitoring	When Condition 7 is triggered, perform PM emissions monitoring as outlined in Conditions 7.1 - 7.4.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring has not been triggered for EU ID 25.
8, 8.1, 8.2, 8.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Particulate Matter Emissions Standard Diesel-Fired Engine Reporting	When Condition 8 is triggered, report as outlined in Conditions 8.1 - 8.3.	Yes	When triggered, reporting is completed as required by these conditions. Reporting has not been triggered for EU ID 25.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9, 20	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with liquid fuel sulfur content limit of 0.25 wt% (TVP02 permit Condition 13). Records of third-party delivery receipts and copies of these records are provided in the Operating Report. Fuel delivery receipts and accompanying product analyses provided by the fuel supplier document that the liquid fuel sulfur content is below the limit.
9.1, 9.2	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard MR&R	Comply with the fuel sulfur content limit of 0.25 percent sulfur by weight (Condition 13). Monitor, record, and report as required by Conditions 13.2 – 13.5.	Yes	Compliance with the liquid fuel 0.25 wt% sulfur content limit is demonstrated by data included in the Operating Reports.
9.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the sulfur compound emissions standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
12, 12.1	Condition 9 of Minor Permit No. AQ0091MSS03 Rev. 2	NO _x Emissions (Owner Requested Limit)	Limit the combined NO _x emissions from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per rolling 12-month period (expressed as NO ₂) by limiting fuel consumption such that the equation in Condition 12.1 holds true.	Yes	Records demonstrating compliance with the NO _x emissions limit are included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 12.2 through 12.8.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.2	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring	Monitor diesel fuel use using either: a) a fuel meter with a minimum accuracy of plus or minus five percent; or b) measurement techniques and calculations approved by the Department.	Yes	Diesel fuel usage is monitored using a fuel meter meeting the requirements of this condition and is reported in the Operating Reports.
12.3	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Recordkeeping and Calculations	Maintain records of monthly (calendar) and rolling 12-month fuel use. Each calendar month use the rolling 12-month fuel use to calculate and record total annual NOx emissions from all units combined according to the equation presented in Condition 12.1.	Yes	Recordkeeping as required by this condition. Fuel use records and calculated emissions are included in the Operating Reports.
12.4, 12.5	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring and Recordkeeping	Monitor and maintain records of the monthly (calendar) and rolling 12-month hours of operation.	Yes	Monitoring and recordkeeping as required by these conditions.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.6, 12.6a, 12.6b	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) MR&R	If any one or more fuel meters did not function for any period of time when fuel was being supplied to any affected emissions unit, then: a) Use monthly and rolling 12-month hours of operation to calculate combined monthly and combined rolling 12-month NOx emissions. Use maximum NOx emission rate in lb/hr listed in permit Section 11. b) Report rolling 12-month NOx emissions calculated under Condition 12.6a and monthly hours of operation in the Operating Report.	Yes	When triggered, NOx emissions calculations for the affected emissions units are performed based on operating time and the resulting calculations and operating time data are reported in the Operating Reports.
12.7	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Reporting	Report the combined 12-month consecutive NOx emissions and the rolling 12-month fuel usage in the Operating Report.	Yes	The required information is included in the Operating Reports.
12.8	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 20.2 ton rolling 12-month NOx emission limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions Report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Liquid Fuel Sulfur Content (Owner Requested Limit)	0.25% sulfur by weight.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.2 through 13.6.
13.2, 13.3, 13.4, 13.5	Same as Condition 13	Liquid Fuel Sulfur Content (Owner Requested Limit) MR&R	Monitoring, recordkeeping, and reporting of third-party diesel fuel deliveries and sulfur content.	Yes	Records of third-party delivery receipts and copies of these records provided in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Liquid Fuel Sulfur Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 0.25 wt% limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
17.1	18 AAC 50.346(b)(4)	Insignificant Emissions Units Compliance Certification	Submit the compliance certification for insignificant emissions units based on reasonable inquiry.	Yes	Annual compliance certifications based on reasonable inquiry.
17.3	Same as Condition 17.1	Insignificant Emissions Units with Actual Emissions > Significant Emissions Thresholds	Report in the Operating Report if actual emissions from the emissions unit become greater than any of the significant emissions thresholds.	Yes	When triggered, reporting is completed as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
28	40 C.F.R. 60.12, Subpart A	NSPS Subpart A Concealment of Emissions (Circumvention)	Do not build, erect, install, or use any article, machine, equipment or process that conceals an emission which would otherwise constitute a violation of the NSPS Subpart IIII emission standard.	Yes	Reasonable inquiry. Activities which would conceal emissions or otherwise constitute circumvention of an applicable standard are not conducted.
New (31.2 in proposed TVP03 permit)	40 C.F.R. 60.4201(a), §60.4204(b), §60.4211(c), Subpart IIII Appendix I to 40 C.F.R. 1039, Table 3	NSPS Subpart IIII Engine Model Year Conformity Installation and Configuration	Purchase an engine certified to meet the emission standards in Table 3 to Appendix I to 40 C.F.R. 1039 (EPA Tier 3) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications except as allowed under (new) Condition 31.5.	Yes	Records of manufacturer certification of Tier 3 emissions compliance for the engine. Records of engine installation and configuration according to manufacturer's specifications.
New (31.3 in proposed TVP03 permit)	40 C.F.R. 60.4206, Subpart IIII	NSPS Subpart IIII Compliance Requirements	Operate and maintain the engine to achieve the emission standards in (new) Condition 31.2 over the entire life of the engine.	Yes	The engine is operated and maintained according to the manufacturer's emission-related instructions as demonstrated by records kept on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.4 in proposed TVP03 permit)	40 C.F.R. 60.4211(a), Subpart IIII	NSPS Subpart IIII Compliance Requirements	Except as allowed under (new) Condition 31.5, operate and maintain the stationary CI ICE and control device (if applicable) according to the manufacturer's emission- related written instructions. Change only those emission- related settings that are permitted by the manufacturer.	Yes	Records of operating and maintenance procedures are maintained on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.5, 31.5a – 31.5c in proposed TVP03 permit)	40 C.F.R. 60.4211(g)(2), Subpart IIII	NSPS Subpart IIII Compliance Requirements	If the engine is <u>not</u> installed and configured according to the manufacturer's emission-related specifications, or the engine and control device are not operated and maintained according to the manufacturer's emission-related written instructions, or if emission-related settings are changed in a way that is not permitted by the manufacturer, demonstrate compliance as follows: a. Keep a maintenance plan and records of conducted maintenance; b. Maintain and operate the engine in manner consistent with good air pollution control practice; and c. Conduct an initial performance test within 1 year of each action described in this condition.	Yes	Not triggered. Records of engine installation, configuration, operation, and maintenance according to the manufacturer's emission-related instructions.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.6 in proposed TVP03 permit)	40 C.F.R. 60.4212, Subpart IIII	NSPS Subpart IIII Test Methods and Procedures	Conduct the performance test under (new) Condition 31.5c in accordance with 40 C.F.R. 60.4212.	Yes	Not triggered. Records of engine installation, configuration, operation, and maintenance according to the manufacturer's emission-related instructions.
New (31.7 in proposed TVP03 permit)	40 C.F.R. 60.4209(b), Subpart IIII	NSPS Subpart IIII Diesel Particulate Filter Monitoring	If the stationary CI ICE is equipped with a diesel particulate filter to comply with applicable emission standards, it must be installed with a backpressure monitor that notifies the Permittee when the high backpressure limit of the engine is approached.	N/A	Not triggered. The engine is not equipped with a diesel particulate filter.
New (31.8a in proposed TVP03 permit)	40 C.F.R. 60.4214(c), Subpart IIII	NSPS Subpart IIII Diesel Particulate Filter Recordkeeping	If the stationary CI ICE is equipped with a diesel particulate filter, keep records of any corrective action taken after receiving notification from the monitor that the high backpressure limit was approached.	N/A	Not triggered. The engine is not equipped with a diesel particulate filter.
New (31.8b in proposed TVP03 permit)	40 C.F.R. 71.6(a)(3) & (c)(6)	NSPS Subpart IIII Certificate of Conformity Recordkeeping	Maintain records of the manufacturer's certification that the engine meets the emissions standards referenced in (new) Condition 31.2.	Yes	Recordkeeping as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **25 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (31.9 in proposed TVP03 permit)	40 C.F.R. 71.6(a)(3) & (c)(6)	NSPS Subpart IIII Excess Emissions and Permit Deviation Reporting	Notify ADEC of any deviation from the requirements in (new) Condition 31.	Yes	Any deviation from applicable permit requirements is reported in an Excess Emissions or Permit Deviation Report.
New (35 in proposed TVP03 permit)	40 C.F.R. 63.6585, §63.6590(c)(1), Subpart ZZZZ	NESHAP Subpart ZZZZ Comply with NSPS Subpart IIII	Comply with 40 C.F.R. 63 Subpart ZZZZ by meeting the applicable requirements of 40 C.F.R. 60 Subpart IIII.	Yes	Records of installation, operation, and maintenance of the engine according to the requirements of NSPS Subpart IIII (new permit Condition 31).

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **25 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60.4201(b) – (e), Subpart IIII – Emission Standards for Non-Emergency Engines	The engine is rated less than 3000 hp and is not a marine engine.
40 C.F.R. 60.4202, Subpart IIII – Emission Standards for Emergency Engines	Not an emergency engine.
40 C.F.R. 60.4204(a), Subpart IIII – Emission Standards for Non-Emergency Engines	The engine is not a pre-2007 model year engine.
40 C.F.R. 60.4204(c), Subpart IIII – Emission Standards for Non-Emergency Engines	The engine does not have a displacement greater than or equal to 30 liters per cylinder.
40 C.F.R. 60.4205, Subpart IIII – Emission Standards for Emergency Engines	Not an emergency engine.
40 C.F.R. 60.4207, Subpart IIII – Fuel Requirements for Engines Subject to Subpart IIII	The stationary source is located in an area that is not accessible by the Federal Aid Highway System and the engine is a pre-2014 model year engine. [40 C.F.R. 60.4216(d)]
40 C.F.R. 60.4209(a), Subpart IIII – Monitoring Requirements	Not an emergency engine.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **25 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60.4211(b), Subpart IIII – Compliance Requirements for Owners/Operators	The engine is not a pre-2007 model year engine.
40 C.F.R. 60.4211(d), Subpart IIII – Compliance Requirements for Owners/Operators	The engine does not have a displacement greater than or equal to 30 liters per cylinder.
40 C.F.R. 60.4211(f), Subpart IIII – Compliance Requirements for Owners/Operators	Not an emergency engine.
40 C.F.R. 60.7, Subpart A – Notification and Recordkeeping 40 C.F.R. 60.4214(a), Subpart IIII – Notification, Reporting, and Recordkeeping Requirements	The engine: 1) is not rated greater than 2,237 kW (3,000 hp); 2) does not have a displacement of greater than or equal to 10 liters per cylinder; and 3) is not a pre-2007 model year engine. (See NSPS Subpart IIII, Table 8, and §60.4214(a) for applicability of 40 C.F.R. 60.7 to engines affected by Subpart IIII.)
40 C.F.R. 60.4214(b), (d), Subpart IIII – Notification, Reporting, and Recordkeeping Requirements	Not an emergency engine.
40 C.F.R. 60.11, Subpart A – Compliance with Standards and Maintenance Requirements	40 C.F.R. 60.11 is specifically excluded from the list of Subpart A elements that apply to engines subject to NSPS Subpart IIII. [Subpart IIII, Table 8]
40 C.F.R. 60.13, Subpart A – Monitoring Requirements	The engine does not have a displacement greater than or equal to 30 liters per cylinder. [Subpart IIII, Table 8]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)**

Permit Number: **AQ0091TVP02** ☐**Emissions Unit ID No. // Operating Scenario:** **25 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This subpart applies to spark ignition engines. This engine is a compression ignition engine.
40 C.F.R. 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	There are no requirements that apply to new engines located at an area source of HAP emissions, except for the requirement to comply with the applicable requirements of 40 C.F.R. 60, Subpart IIII. [40 C.F.R. 63.6590(c)(1)]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	28 // 1
2.	Date installation/construction commenced¹	Unknown
3.	Date installed	1992
4.	Emissions Unit serial number	cd-4039-d130242
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	John Deere 4039DF001
7.	Type of combustion device	Air Compressor Engine
8.	Rated design capacity (horsepower rating for engines)	80 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	NA
10.	If used for power generation, electrical output (kW)	NA

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	4.25 gallons/hr (based on hp rating, conversion factor of 2,546.7 Btu/hp-hr, engine efficiency of 35% (assumed), and diesel fuel higher heating value of 137,000 Btu/gal)

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1, 18	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Reasonable Inquiry Actual emissions for EU ID 28 classify this engine as insignificant.
1.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	If emissions unit is insignificant based on actual emissions, annually certify compliance with the visible emissions standard based on reasonable inquiry. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 2 – 4.	Yes	EU ID 28 is insignificant based on annual estimates of actual emissions for fees and emissions inventory reports. Annual compliance certifications based on reasonable inquiry.
2, 2.1, 2.1a - 2.1e, 2.2, 2.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 60, Appendix A-4 (Method 9) 40 C.F.R. 71.6(a)(3)(i)	Visible Emissions Standard Monitoring	When Condition 2 is triggered, perform visible emissions monitoring as required under Condition 2.1 on the schedule outlined in Conditions 2.1a - 2.1e, or 2.2 and 2.3.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring under these conditions has not been triggered for EU ID 28. [Note: We have requested that the smoke/no smoke plan language (TVP02 Conditions 2.2 and 2.3) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
3, 3.1a - 3.1c, 3.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(ii)	Visible Emissions Standard Recordkeeping	When Condition 3 is triggered, keep records as required by Conditions 3.1a - 3.1c or 3.2.	Yes	When triggered, recordkeeping is completed as required by these conditions. Monitoring and recordkeeping have not been triggered for EU ID 28. [Note: We have requested that the smoke/no smoke plan language (TVP02 Condition 3.2) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4, 4.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Visible Emissions Standard Reporting	When Condition 4 is triggered, report as required by Condition 4.1.	Yes	When triggered, reporting is completed as required by these conditions. Monitoring and reporting have not been triggered for EU ID 28. [Note: We have requested that the smoke/no smoke plan language (portions of TVP02 Condition 4.1) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4.2a	Same as Condition 4.1	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of an applicable standard is reported in an Excess Emissions report.
4.2b	Same as Condition 4.1	Visible Emissions Standard Permit Deviation Reporting	If any monitoring under Condition 2 was not performed when required, notify ADEC within three days of the monitoring deadline date.	Yes	When triggered, reporting will be completed as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6, 19	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Reasonable Inquiry Actual emissions for EU ID 28 classify this engine as insignificant.
6.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	If EU is insignificant based on actual emissions, annually certify compliance with the particulate matter emissions standard. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 7 and 8.	Yes	EU ID 28 is insignificant based on annual estimates of actual emissions for fees and emissions inventory reports. Annual compliance certifications based on reasonable inquiry.
7, 7.1, 7.2, 7.3, 7.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(i)	Particulate Matter Emissions Standard Diesel-Fired Engine Monitoring	When Condition 7 is triggered, perform PM emissions monitoring as outlined in Conditions 7.1 - 7.4.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring has not been triggered for EU ID 28.
8, 8.1, 8.2, 8.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Particulate Matter Emissions Standard Diesel-Fired Engine Reporting	When Condition 8 is triggered, report as outlined in Conditions 8.1 - 8.3.	Yes	When triggered, reporting is completed as required by these conditions. Reporting has not been triggered for EU ID 28.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9, 20	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with liquid fuel sulfur content limit of 0.25 wt% (TVP02 permit Condition 13). Records of third-party delivery receipts and copies of these records are provided in the Operating Report. Fuel delivery receipts and accompanying product analyses provided by the fuel supplier document that the liquid fuel sulfur content is below the limit.
9.1, 9.2	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard MR&R	Comply with the fuel sulfur content limit of 0.25 percent sulfur by weight (Condition 13). Monitor, record and report as required by Conditions 13.2 – 13.5.	Yes	Compliance with the liquid fuel 0.25 wt% sulfur content limit is demonstrated by data included in the Operating Reports.
9.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the Sulfur Compound Emissions Standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12, 12.1	Condition 9 of Minor Permit No. AQ0091MSS03 Rev. 2	NOx Emissions (Owner Requested Limit)	Limit the combined NOx emissions from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per rolling 12-month period (expressed as NO ₂) by limiting fuel consumption such that the equation in Condition 12.1 holds true.	Yes	Records demonstrating compliance with the NOx emissions limit are included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 12.2 through 12.8.
12.2	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring	Monitor diesel fuel use using either: a) a fuel meter with a minimum accuracy of plus or minus five percent; or b) measurement techniques and calculations approved by the Department.	Yes	Diesel fuel usage is monitored using a fuel meter meeting the requirements of this condition and is reported in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.3	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Recordkeeping and Calculations	Maintain records of monthly (calendar) and rolling 12-month fuel use. Each calendar month use the rolling 12-month fuel use to calculate and record total annual NOx emissions from all units combined according to the equation presented in Condition 12.1.	Yes	Recordkeeping as required by this condition. Fuel use records and calculated emissions are included in the Operating Reports.
12.4, 12.5	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring and Recordkeeping	Monitor and maintain records of the monthly (calendar) and rolling 12-month hours of operation.	Yes	Monitoring and recordkeeping as required by these conditions.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.6, 12.6a, 12.6b	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) MR&R	If any one or more fuel meters did not function for any period of time when fuel was being supplied to any affected emissions unit, then: a) Use monthly (calendar) and rolling 12-month hours of operation to calculate combined monthly and combined rolling 12-month NOx emissions. Use maximum NOx emission rate in lb/hr listed in permit Section 11. b) Report rolling 12-month NOx emissions calculated under Condition 12.6a and monthly (calendar) hours of operation in the Operating Report.	Yes	When triggered, NOx emissions calculations for the affected emissions units are performed based on operating time and the resulting calculations and operating time data are reported in the Operating Reports.
12.7	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Reporting	Report the combined 12-month consecutive NOx emissions and the rolling 12-month fuel usage in the Operating Report.	Yes	The required information is included in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.8	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 20.2 ton rolling 12-month NOx emission limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions Report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Liquid Fuel Sulfur Content (Owner Requested Limit)	0.25% sulfur by weight.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.2 through 13.6.
13.2, 13.3, 13.4, 13.5	Same as Condition 13	Liquid Fuel Sulfur Content (Owner Requested Limit) MR&R	Monitoring, recordkeeping, and reporting of third-party diesel fuel deliveries and sulfur content.	Yes	Records of third-party delivery receipts and copies of these records provided in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Liquid Fuel Sulfur Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 0.25 wt% limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
17.1	18 AAC 50.346(b)(4)	Insignificant Emissions Units Compliance Certification	Submit the compliance certification for insignificant emissions units based on reasonable inquiry.	Yes	Annual compliance certifications based on reasonable inquiry.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
17.3	Same as Condition 17.1	Insignificant Emissions Units with Actual Emissions > Significant Emissions Thresholds	Report in the Operating Report if actual emissions from the emissions unit become greater than any of the significant emissions thresholds.	Yes	When triggered, reporting is completed as required by this condition.
New (32.1 in proposed TVP03 permit)	40 C.F.R. 63.6665 & Table 8, Subpart ZZZZ 40 C.F.R. 63.1-63.15, Subpart A	NESHAP Subpart A General Provisions	Comply with the applicable provisions of 40 C.F.R. 63, Subpart A.	Yes	Compliance with applicable requirements of 40 C.F.R. 63, Subpart A is demonstrated by records kept on file.
New (39 in proposed TVP03 permit)	40 C.F.R. 63.6590(a)(1)(iii) & §63.6605(a), Subpart ZZZZ	NESHAP Subpart ZZZZ Requirements	Comply with the applicable provisions of 40 C.F.R. 63, Subpart ZZZZ at all times.	Yes	Compliance is demonstrated by records kept on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (39.1 in proposed TVP03 permit)	40 C.F.R. 63.6605(b), §63.6625(e), §63.6640(a), Table 6 (Item 9), Subpart ZZZZ	NESHAP Subpart ZZZZ Good Air Pollution Control Practice	At all times, operate and maintain this unit in a manner consistent with safety and good air pollution control practices. Comply with either: a. the manufacturer's emission-related written operation and maintenance instructions; or b. a maintenance plan developed by the Permittee which provides for the maintenance and operation of the engine in a manner consistent with good air pollution control practices.	Yes	Hilcorp complies with Conditions 39.1a and 39.1b. Records of operation and maintenance procedures are maintained on file.
New (39.2 in proposed TVP03 permit)	40 C.F.R. 63.6625(h) & Table 2d, Subpart ZZZZ	NESHAP Subpart ZZZZ Startup and Idle Time	Minimize the time spent at idle during startup and minimize the startup time not to exceed 30 minutes.	Yes	Records of operation and maintenance procedures are maintained on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (39.3 in proposed TVP03 permit)	40 C.F.R. 63.6603(a), §63.6625(i), Table 2d (Item 1), Table 2d, Footnote 1, Subpart ZZZZ	NESHAP Subpart ZZZZ Emissions Management Practices	Change the oil and filter and inspect and replace (if necessary) the air cleaner, all hoses and belts on the schedule required under these conditions. Optionally use an oil analysis program as described in 40 C.F.R. 63.6625(i) to extend the specified oil change requirement.	Yes	Records of operation and maintenance procedures are maintained on file.
New (40.1 in proposed TVP03 permit)	40 C.F.R. 63.6655(e), 75 FR 9654, Subpart ZZZZ	NESHAP Subpart ZZZZ Recordkeeping	Keep maintenance records to demonstrate that the engine is operated and maintained according to the Permittee's own maintenance plan (if maintenance is performed as allowed under new Condition 39.1b).	Yes	Records of operation and maintenance procedures are maintained on file.
New (40.2 in proposed TVP03 permit)	40 C.F.R. 63.6660, 40 C.F.R. 63.6665, Table 8, Subpart ZZZZ; 40 C.F.R. 63.10(b)(1), Subpart A	NESHAP Subparts A and ZZZZ Recordkeeping	Keep records readily available for expeditious inspection and review in a hard copy or electronic form for at least 5 years. All records may be retained off site.	Yes	Recordkeeping as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **28 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (41.1 in proposed TVP03 permit)	40 C.F.R. 63.6640(e), 40 C.F.R. 63.6650(f), Subpart ZZZZ	NESHAP Subparts A and ZZZZ Reporting	Include a report of NESHAP Subpart A and Subpart ZZZZ deviations in the Operating Report.	Yes	Any deviation from applicable requirements is reported in the Operating Report.
New (41.2 in proposed TVP03 permit)	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	NESHAP Subparts A and ZZZZ Permit Deviation Reporting	Notify ADEC of any deviations from any of the applicable NESHAP Subparts A and ZZZZ requirements.	Yes	Any deviation from applicable permit requirements is reported in a Permit Deviation report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **28 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	This emissions unit was manufactured prior to the April 1, 2006 applicability date of this rule (see 40 C.F.R. 60.4200(a)(2)(i)) and has not been modified or reconstructed after July 11, 2005 (see 40 C.F.R. 60.4200(a)(3)).
40 C.F.R. 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This subpart applies to spark ignition engines. This engine is a compression ignition engine.
40 C.F.R. 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines 40 C.F.R. 63.6600, §63.6601, and §63.6602 – Emission Limitations, Operating Limitations, and other Requirements at HAP Major Sources	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Tables 2a and 2c – Emission Limitations and Other Requirements at HAP Major Sources	There are no requirements in Tables 2a or 2c of Subpart ZZZZ that apply to this engine because it is an existing CI RICE located at an area source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Table 2b – Operating Limitations	There are no requirements in Table 2b of Subpart ZZZZ that apply to existing stationary CI RICE rated less than or equal to 500 bhp.
40 C.F.R. 63 Subpart ZZZZ Table 2d – CO Emission Limitations	There are no CO emission limits in Table 2d that apply to engines rated less than or equal to 300 bhp.
40 C.F.R.63 Subpart ZZZZ §63.6604 – Fuel Requirements	The requirement to comply with 40 C.F.R. 1090.305 does not apply to existing non-emergency engines located at area sources in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6604(d)]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **28 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6610 and §63.6611 – Testing and Initial Compliance Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6612 – Testing and Initial Compliance Requirements	There are no requirements in either Table 4 or Table 5 of Subpart ZZZZ that apply to this engine because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6615 – Subsequent Testing §63.6620 – Performance Tests and Procedures Table 3 – Subsequent Performance Tests Table 4 – Requirements for Performance Tests	There are no performance testing requirements that apply to this engine because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6625(a) & (b) – Monitoring, Installation, Collection, Operation, and Maintenance Requirements	These requirements do not apply to this engine because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6625(f) – Monitoring, Installation, Collection, Operation, and Maintenance Requirements	This is not an emergency engine.
40 C.F.R. 63 Subpart ZZZZ §63.6625(g) – Monitoring, Installation, Collection, Operation, and Maintenance Requirements	This requirement does not apply to CI RICE rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6630 – Initial Compliance Demonstration Table 5 – Initial Compliance with Emission Limitations, Operating Limitations, and Other Requirements	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to this engine.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **28 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6635 – Monitoring to Demonstrate Continuous Compliance	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to this engine.
40 C.F.R. 63 Subpart ZZZZ §63.6640(f) – Continuous Compliance Demonstration	This is not an emergency engine.
40 C.F.R. 63 Subpart ZZZZ §63.6645(a) – Notification Requirements 40 C.F.R. 63.8(e), (f)(4) & (f)(6), Subpart A – Monitoring Requirements 40 C.F.R. 63.9(b) – (e), (g) & (h), Subpart A – Notification Requirements	Per 40 C.F.R. 63.6645(a)(5), existing stationary RICE that are not subject to any numerical emission standards are not subject to the notification requirements of these sections.
40 C.F.R. 63 Subpart ZZZZ §63.6645(b) – (f) – Notification Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6645(h) – Notification Requirements	There are no performance testing or other initial compliance demonstration requirements that apply to this engine because there are no emission or operating limits that apply.
40 C.F.R. 63 Subpart ZZZZ §63.6640(b) and §63.6650(a) – (e) – Reporting Requirements	Compliance status reporting requirements only apply to CI RICE subject to numerical emissions or operating limits. There are no emissions or operating limits that apply to this engine.
40 C.F.R. 63 Subpart ZZZZ §63.6650(h) – Reporting Requirements for Certain Emergency Engines	This is not an emergency engine.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **28 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6655(a), (b), & (d) – Recordkeeping Requirements	There are no emission or operational limits that apply to this engine.
40 C.F.R. 63 Subpart ZZZZ §63.6655(f) – Recordkeeping Requirements	This engine is not classified as an emergency engine for purposes of Subpart ZZZZ. Therefore, it is not required to limit hours of operation per 40 C.F.R. 63.6640(f).
40 C.F.R. Subpart ZZZZ §63.6645(g) – Notification Requirements 40 C.F.R. 63.7, Subpart A – Performance Testing Requirements	There are no performance testing requirements that apply to this engine because there are no emission limits that apply.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	33, 34 // 1
2.	Date installation/construction commenced¹	Unknown
3.	Date installed	2002
4.	Emissions Unit serial number	64z35252, 64z35246
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Caterpillar 3306
7.	Type of combustion device	Firewater Pump Engine
8.	Rated design capacity (horsepower rating for engines)	231 hp
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	NA
10.	If used for power generation, electrical output (kW)	NA

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.
Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Diesel	12.1 gallons/hr (vendor data)

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
1, 18	18 AAC 50.055(a)(1)	Visible Emissions Standard	20% opacity averaged over any six consecutive minutes.	Yes	Reasonable Inquiry Actual emissions for EU IDs 33 and 34 classify these engines as insignificant.
1.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Visible Emissions Standard MR&R	If emissions units are insignificant based on actual emissions, annually certify compliance with the visible emissions standard based on reasonable inquiry. Otherwise conduct monitoring, recordkeeping and reporting as required under Conditions 2 – 4.	Yes	EU IDs 33 and 34 are insignificant based on annual estimates of actual emissions for fees and emissions inventory reports. Annual compliance certifications based on reasonable inquiry.
2, 2.1, 2.1a - 2.1e, 2.2, 2.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 60, Appendix A-4 (Method 9) 40 C.F.R. 71.6(a)(3)(i)	Visible Emissions Standard Monitoring	When Condition 2 is triggered, perform visible emissions monitoring as required under Condition 2.1 on the schedule outlined in Conditions 2.1a - 2.1e, or 2.2 and 2.3.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring under these conditions has not been triggered for EU IDs 33 and 34. [Note: We have requested that the smoke/no smoke plan language (TVP02 Conditions 2.2 and 2.3) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
3, 3.1a - 3.1c, 3.2	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(ii)	Visible Emissions Standard Recordkeeping	When Condition 3 is triggered, keep records as required by Conditions 3.1a - 3.1c or 3.2.	Yes	When triggered, recordkeeping is completed as required by these conditions. Monitoring and recordkeeping have not been triggered for EU IDs 33 and 34. [Note: We have requested that the smoke/no smoke plan language (TVP02 Condition 3.2) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4, 4.1	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Visible Emissions Standard Reporting	When Condition 4 is triggered, report as required by Condition 4.1.	Yes	When triggered, reporting is completed as required by these conditions. Monitoring and reporting have not been triggered for EU IDs 33 and 34. [Note: We have requested that the smoke/no smoke plan language (portions of TVP02 Condition 4.1) be removed from the permit. See Form E3 and the proposed TVP03 permit for details.]
4.2a	Same as Condition 4.1	Visible Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the visible emissions standard.	Yes	Any exceedance of an applicable standard is reported in an Excess Emissions report.
4.2b	Same as Condition 4.1	Visible Emissions Standard Permit Deviation Reporting	If any monitoring under Condition 2 was not performed when required, notify ADEC within three days of the monitoring deadline date.	Yes	When triggered, reporting will be completed as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
6, 19	18 AAC 50.055(b)(1)	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Reasonable Inquiry Actual emissions for EU IDs 33 and 34 classify these engines as insignificant.
6.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)	Particulate Matter Emissions Standard MR&R	If emissions units are insignificant based on actual emissions, annually certify compliance with the particulate matter emissions standard. Otherwise conduct monitoring, recordkeeping, and reporting as required under Conditions 7 and 8.	Yes	EU IDs 33 and 34 are insignificant based on annual estimates of actual emissions for fees and emissions inventory reports. Annual compliance certifications based on reasonable inquiry.
7, 7.1, 7.2, 7.3, 7.4	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(i)	Particulate Matter Emissions Standard Diesel-Fired Engine Monitoring	When Condition 7 is triggered, perform PM emissions monitoring as outlined in Conditions 7.1 - 7.4.	Yes	When triggered, monitoring is completed as required by these conditions. Monitoring has not been triggered for EU IDs 33 and 34.
8, 8.1, 8.2, 8.3	18 AAC 50.040(j) 18 AAC 50.326(j) 18 AAC 50.346(c) (Standard Operating Permit Condition IX) 40 C.F.R. 71.6(a)(3)(iii)	Particulate Matter Emissions Standard Diesel-Fired Engine Reporting	When Condition 8 is triggered, report as outlined in Conditions 8.1 - 8.3.	Yes	When triggered, reporting is completed as required by these conditions. Reporting has not been triggered for EU IDs 33 and 34.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
9, 20	18 AAC 50.055(c)	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	SO ₂ material balance and compliance with liquid fuel sulfur content limit of 0.25 wt% (TVP02 permit Condition 13). Records of third-party delivery receipts and copies of these records are provided in the Operating Report. Fuel delivery receipts and accompanying product analyses provided by the fuel supplier document that the liquid fuel sulfur content is below the limit.
9.1, 9.2	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Sulfur Compound Emissions Standard MR&R	Comply with the fuel sulfur content limit of 0.25 percent sulfur by weight (Condition 13). Monitor, record and report as required by Conditions 13.2 – 13.5.	Yes	Compliance with the liquid fuel 0.25 wt% sulfur content limit is demonstrated by data included in the Operating Reports.
9.3	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3)	Sulfur Compound Emissions Standard Excess Emissions Reporting	Notify ADEC of any exceedance of the Sulfur Compound Emissions Standard.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12, 12.1	Condition 9 of Minor Permit No. AQ0091MSS03 Rev. 2	NOx Emissions (Owner Requested Limit)	Limit the combined NOx emissions from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per rolling 12-month period (expressed as NO ₂) by limiting fuel consumption such that the equation in Condition 12.1 holds true.	Yes	Records demonstrating compliance with the NOx emissions limit are included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 12.2 through 12.8.
12.2	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring	Monitor diesel fuel use using either: a) a fuel meter with a minimum accuracy of plus or minus five percent; or b) measurement techniques and calculations approved by the Department.	Yes	Diesel fuel usage is monitored using a fuel meter meeting the requirements of this condition and is reported in the Operating Reports.
12.3	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Recordkeeping and Calculations	Maintain records of monthly (calendar) and rolling 12-month fuel use. Each calendar month use the rolling 12-month fuel use to calculate and record total annual NOx emissions from all units combined according to the equation presented in Condition 12.1.	Yes	Recordkeeping as required by this condition. Fuel use records and calculated emissions are included in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.4, 12.5	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Monitoring and Recordkeeping	Monitor and maintain records of the monthly (calendar) and rolling 12-month hours of operation.	Yes	Monitoring and recordkeeping as required by these conditions.
12.6, 12.6a, 12.6b	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) MR&R	If any one or more fuel meters did not function for any period of time when fuel was being supplied to any affected emissions unit, then: a) Use monthly (calendar) and rolling 12-month hours of operation to calculate combined monthly and combined rolling 12-month NOx emissions. Use maximum NOx emission rate in lb/hr listed in permit Section 11. b) Report rolling 12-month NOx emissions calculated under Condition 12.6a and monthly (calendar) hours of operation in the Operating Report.	Yes	When triggered, NOx emissions calculations for the affected emissions units are performed based on operating time and the resulting calculations and operating time data are reported in the Operating Reports.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
12.7	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Reporting	Report the combined 12-month consecutive NOx emissions and the rolling 12-month fuel usage in the Operating Report.	Yes	The required information is included in the Operating Reports.
12.8	Same as Conditions 12, 12.1	NOx Emissions (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 20.2 ton rolling 12-month NOx emission limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions Report.
13	Condition 10 of Minor Permit No. AQ0091MSS03 Rev. 1	Liquid Fuel Sulfur Content (Owner Requested Limit)	0.25% sulfur by weight.	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.2 through 13.6.
13.2, 13.3, 13.4, 13.5	Same as Condition 13	Liquid Fuel Sulfur Content (Owner Requested Limit) MR&R	Monitoring, recordkeeping, and reporting of third-party diesel fuel deliveries and sulfur content.	Yes	Records of third-party delivery receipts and copies of these records provided in the Operating Reports.
13.6	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a)(3) & (c)(6)	Liquid Fuel Sulfur Content (Owner Requested Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 0.25 wt% limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
17.1	18 AAC 50.346(b)(4)	Insignificant Emissions Units Compliance Certification	Submit the compliance certification for insignificant emissions units based on reasonable inquiry.	Yes	Annual compliance certifications.
17.3	Same as Condition 17.1	Insignificant Emissions Units with Actual Emissions > Significant Emissions Thresholds	Report in the Operating Report if actual emissions from EU ID 33 or 34 become greater than any of the significant emissions thresholds.	Yes	When triggered, reporting is completed as required by this condition.
New (32.1 in proposed TVP03 permit)	40 C.F.R. 63.6665 & Table 8, Subpart ZZZZ 40 C.F.R. 63.1-63.15, Subpart A	NESHAP Subpart A General Provisions	Comply with the applicable provisions of 40 C.F.R. 63, Subpart A.	Yes	Compliance with applicable requirements of 40 C.F.R. 63, Subpart A is demonstrated by records kept on file.
New (39 in proposed TVP03 permit)	40 C.F.R. 63.6590(a)(1)(iii) & §63.6605(a), Subpart ZZZZ	NESHAP Subpart ZZZZ Requirements	Comply with the applicable provisions of 40 C.F.R. 63, Subpart ZZZZ at all times.	Yes	Compliance is demonstrated by records kept on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (39.1 in proposed TVP03 permit)	40 C.F.R. 63.6605(b), §63.6625(e), §63.6640(a), Table 6 (Item 9), Subpart ZZZZ	NESHAP Subpart ZZZZ Good Air Pollution Control Practice	At all times, operate and maintain these units in a manner consistent with safety and good air pollution control practices. Comply with either: a. the manufacturer's emission-related written operation and maintenance instructions; or b. a maintenance plan developed by the Permittee which provides for the maintenance and operation of the engines in a manner consistent with good air pollution control practices.	Yes	Hilcorp complies with Conditions 39.1a and 39.1b. Records of operation and maintenance procedures are maintained on file.
New (39.2 in proposed TVP03 permit)	40 C.F.R. 63.6625(h) and Table 2d, Subpart ZZZZ	NESHAP Subpart ZZZZ Startup and Idle Time	Minimize the time spent at idle during startup and minimize the startup time not to exceed 30 minutes.	Yes	Records of operation and maintenance procedures are maintained on file.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (39.3 in proposed TVP03 permit)	40 C.F.R. 63.6603(a), §63.6625(i), Table 2d (Item 1), Table 2d, Footnote 1, Subpart ZZZZ	NESHAP Subpart ZZZZ Emissions Management Practices	Change the oil and filter and inspect and replace (if necessary) the air cleaner, all hoses and belts on the schedule required under these conditions. Optionally use an oil analysis program as described in 40 C.F.R. 63.6625(i) to extend the specified oil change requirement.	Yes	Records of operation and maintenance procedures are maintained on file.
New (40.1 in proposed TVP03 permit)	40 C.F.R. 63.6655(e), 75 FR 9654, Subpart ZZZZ	NESHAP Subpart ZZZZ Recordkeeping	Keep maintenance records to demonstrate that the engines are operated and maintained according to the Permittee's own maintenance plan (if maintenance is performed as allowed under new Condition 39.1b).	Yes	Records of operation and maintenance procedures are maintained on file.
New (40.2 in proposed TVP03 permit)	40 C.F.R. 63.6660, 40 C.F.R. 63.6665, Table 8, Subpart ZZZZ; 40 C.F.R. 63.10(b)(1), Subpart A	NESHAP Subparts A and ZZZZ Recordkeeping	Keep records readily available for expeditious inspection and review in hard copy or electronic form for at least 5 years. All records may be retained off site.	Yes	Recordkeeping as required by this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (41.1 in proposed TVP03 permit)	40 C.F.R. 63.6640(e), 40 C.F.R. 63.6650(f), Subpart ZZZZ	NESHAP Subparts A and ZZZZ Reporting	Include a report of NESHAP Subpart A and Subpart ZZZZ deviations in the Operating Report.	Yes	Any deviation from applicable requirements is reported in the Operating Report.
New (41.2 in proposed TVP03 permit)	18 AAC 50.040(j)(4) 18 AAC 50.326(j)(4) 40 C.F.R. 71.6(a)(3) & (c)(6)	NESHAP Subparts A and ZZZZ Permit Deviation Reporting	Notify ADEC of any deviations from any of the applicable NESHAP Subparts A and ZZZZ requirements.	Yes	Any deviation from applicable permit requirements is reported in a Permit Deviation report.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	These emissions units were manufactured prior to the April 1, 2006 applicability date of this rule (see 40 C.F.R. 60.4200(a)(2)(i)) and have not been modified or reconstructed after July 11, 2005 (see 40 C.F.R. 60.4200(a)(3)).
40 C.F.R. 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This subpart applies to spark ignition engines. These engines are compression ignition engines.
40 C.F.R. 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines 40 C.F.R. 63.6600, §63.6601, and §63.6602 – Emission Limitations, Operating Limitations, and other Requirements at HAP Major Sources	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Tables 2a and 2c – Emission Limitations and Other Requirements at HAP Major Sources	There are no requirements in Tables 2a or 2c of Subpart ZZZZ that apply to these engines because they are existing CI RICE located at an area source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Table 2b – Operating Limitations	There are no requirements in Table 2b of Subpart ZZZZ that apply to existing stationary CI RICE rated less than or equal to 500 bhp.
40 C.F.R. 63 Subpart ZZZZ Table 2d – CO Emission Limitations	There are no CO emission limits in Table 2d that apply to engines rated less than or equal to 300 bhp.
40 C.F.R.63 Subpart ZZZZ §63.6604 – Fuel Requirements	The requirement to comply with 40 C.F.R. 1090.305 does not apply to existing non-emergency engines located at area sources in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6604(d)]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6610 and §63.6611 – Testing and Initial Compliance Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6612 – Testing and Initial Compliance Requirements	There are no requirements in either Table 4 or Table 5 of Subpart ZZZZ that apply to these engines because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6615 – Subsequent Testing §63.6620 – Performance Tests and Procedures Table 3 – Subsequent Performance Tests Table 4 – Requirements for Performance Tests	There are no performance testing requirements that apply to these engines because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6625(a) & (b) – Monitoring, Installation, Collection, Operation, and Maintenance Requirements	These requirements do not apply to these engines because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6625(f) – Monitoring, Installation, Collection, Operation, and Maintenance Requirements	The Permittee has elected not to classify these as emergency engines under Subpart ZZZZ.
40 C.F.R. 63 Subpart ZZZZ §63.6625(g) – Monitoring, Installation, Collection, Operation, and Maintenance Requirements	This requirement does not apply to CI RICE rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6630 – Initial Compliance Demonstration Table 5 – Initial Compliance with Emission Limitations, Operating Limitations, and Other Requirements	These requirements apply only to CI RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to these engines.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6635 – Monitoring to Demonstrate Continuous Compliance	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6640(f) – Continuous Compliance Demonstration	The Permittee has elected not to classify these as emergency engines under Subpart ZZZZ.
40 C.F.R. 63 Subpart ZZZZ §63.6645(a) – Notification Requirements 40 C.F.R. 63.8(e), (f)(4) & (f)(6), Subpart A – Monitoring Requirements 40 C.F.R. 63.9(b)-(e), (g) & (h), Subpart A – Notification Requirements	Per 40 C.F.R. 63.6645(a)(5), existing stationary RICE that are not subject to any numerical emission standards are not subject to the notification requirements of these sections.
40 C.F.R. 63 Subpart ZZZZ §63.6645(b) – (f) – Notification Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6645(h) – Notification Requirements	There are no performance testing or other initial compliance demonstration requirements that apply to these engines because there are no emission or operating limits that apply.
40 C.F.R. 63 Subpart ZZZZ §63.6640(b) and §63.6650(a) – (e) – Reporting Requirements	Compliance status reporting requirements only apply to CI RICE subject to numerical emissions or operating limits. There are no emissions or operating limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6650(h) – Reporting Requirements for Certain Emergency Engines	These engines do not operate for the purpose specified in §63.6640(f)(4)(ii).

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **33, 34 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 63 Subpart ZZZZ §63.6655(a), (b), & (d) – Recordkeeping Requirements	There are no emission or operational limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6655(f) – Recordkeeping Requirements	These engines are not classified as emergency engines for purposes of Subpart ZZZZ. Therefore, they are not required to limit hours of operation per 40 C.F.R. 63.6640(f).
40 C.F.R. Subpart ZZZZ §63.6645(g) – Notification Requirements 40 C.F.R. 63.7, Subpart A – Performance Testing Requirements	There are no performance testing requirements that apply to these engines because there are no emission limits that apply.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)**Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	Nonroad Engines // 1
2.	Date installation/construction commenced ¹	Unknown
3.	Date installed	N/A
4.	Emissions Unit serial number	Various
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Various – See Form B
7.	Type of combustion device	Nonroad Internal Combustion Engines (various and multiple)
8.	Rated design capacity (horsepower rating for engines)	Various – See Form B
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	N/A
10.	If used for power generation, electrical output (kW)	Various – See Form B

- ¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,
- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
 - NSPS Subparts GG and KKKK, and NESHAP Subpart YYYY for turbines.
- Note that other regulations may apply in addition to the regulations cited.*

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Ultra Low Sulfur Diesel (ULSD)	Various

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **Nonroad Engines // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
10	Minor Permit No. AQ0091MSS03 Rev. 1, Condition 7	Ambient Air Quality Protection Limit for Nonroad Engines	Total cumulative rating of no more than 12,000 hp, except when written approval is obtained to increase this limit in accordance with Condition 11.	Yes	Compliance with the limit is demonstrated by records and information included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 10.1 through 10.3.
10.1	18 AAC 50.040(j) 18 AAC 50.326(j) 40 C.F.R. 71.6(a) & (c)(6)	Ambient Air Quality Protection Limit for Nonroad Engines Recordkeeping and Calculations	Maintain a written inventory of nonroad engines on the platform that includes the make, model, and rated capacity (BHp) of each unit. Each month calculate the total installed nonroad engine capacity by summing the rated capacity of each unit.	Yes	Recordkeeping as required by this condition. The monthly calculated cumulative nonroad engine capacity on the platform is included in the Operating Reports.
10.2	Same as Condition 10.1	Ambient Air Quality Protection Limit for Nonroad Engines Reporting	Include in the Operating Report the total installed nonroad engine capacity for each calendar month during the reporting period.	Yes	Reporting as required by this condition.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **Nonroad Engines // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
10.3	Same as Condition 10.1	Ambient Air Quality Protection Limit for Nonroad Engines Permit Deviation Reporting	Notify ADEC whenever the total rated capacity of nonroad engines on the platform exceeds 12,000 hp.	Yes	Any deviation from the applicable limit is reported in a Permit Deviation report.
11	Minor Permit No. AQ0091MSS03 Rev. 1, Condition 8	Ambient Air Quality Protection Limit for Nonroad Engines Request for Approval to Modify the Limit in Condition 10	To obtain written approval to increase the nonroad engine cumulative limit of 12,000 hp, submit a proposed threshold along with an ambient air quality demonstration that shows compliance with AAQS and increments for NO _x , SO ₂ , and particulate matter at the proposed threshold.	Yes	This condition has not been triggered. When triggered, a request for approval to increase the limit will be submitted in accordance with this condition.

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **Nonroad Engines // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
18 AAC 50.055(a)(1) – Fuel Burning Equipment Emission Standards: Visible Emissions 18 AAC 50.055(b)(1) – Fuel Burning Equipment Emission Standards: Particulate Matter 18 AAC 50.055(c) – Fuel Burning Equipment Emission Standards: Sulfur Compound Emissions	Nonroad (mobile) internal combustion engines are not included in the definition of fuel-burning equipment (see 18 AAC 50.990).
40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	These rules do not apply to nonroad engines.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S13, S14 // 1
2.	Date installation/construction commenced¹	1981
3.	Date installed	N/A - Spartan 151 Drill Rig equipment rotates on and off the platform
4.	Emissions Unit serial number	Various
5.	Special control requirements? [if yes, describe]	No
6.	Manufacturer and model number	Various – See Form B
7.	Type of combustion device	Nonroad Internal Combustion Engines
8.	Rated design capacity (horsepower rating for engines)	Various – See Form B
9.	Rated design capacity (heat input, MMBtu/hr rating for turbines)	N/A
10.	If used for power generation, electrical output (kW)	Various – See Form B

¹. See page 2 of the Form B instructions regarding installation/construction date and consult regulations under 40 C.F.R. 60 (NSPS) and 40 C.F.R. 63 (NESHAP) for applicability dates, e.g.,

- NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ for engines, and
- NSPS Subparts GG and KKKK, and NESHAP Subpart YYYYY for turbines.

Note that other regulations may apply in addition to the regulations cited.

11. Fuel usage: [for EACH fuel, enter]:

Fuel	Maximum hourly firing rate (specify units)
Ultra-Low Sulfur Diesel (ULSD)	Various

12.	Describe any specific modifications to the emissions unit that must be addressed in the permit: None

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S13, S14 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (13 in proposed TVP03 permit)	Minor Permit No. AQ0091MSS04, Condition 4	Ambient Air Quality Protection Limit for Drill Rig Nonroad Engines Liquid Fuel Sulfur Content	Limit the sulfur content of the liquid fuel burned by the Spartan Drill Rig emissions units to no more than 15 ppmw (i.e., burn ULSD fuel only).	Yes	Monitoring, recordkeeping, and reporting according to the requirements of Conditions 13.1 through 13.4.
New (13.1, 13.2, 13.3 in proposed TVP03 permit)	Same as Condition 13	Liquid Fuel Sulfur Content (Ambient Air Quality Protection Limit) MR&R	Monitoring, recordkeeping, and reporting of third-party diesel fuel deliveries and sulfur content.	Yes	Records of third-party delivery receipts and information included in the Operating Reports.
New (13.4 in proposed TVP03 permit)	Same as Condition 13	Liquid Fuel Sulfur Content (Ambient Air Quality Protection Limit) Excess Emissions Reporting	Notify ADEC of any exceedance of the 15 ppmw limit.	Yes	Any exceedance of the applicable limit is reported in an Excess Emissions report.
New (14, 14.1 in proposed TVP03 permit)	Minor Permit No. AQ0091MSS04, Condition 5	Ambient Air Quality Protection Limit for Drill Rig Nonroad Engines Cumulative Rated Capacity	Limit the cumulative rated capacity of drill rig nonroad engines at the Tyonek Platform to no more than 8,615 bHp.	Yes	Compliance with the limit is demonstrated by records and information included in the Operating Reports. Monitoring, recordkeeping, and reporting according to the requirements of Conditions 14.1a, 14.1b, and 14.1c.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B2

Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S13, S14 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (14.1a in proposed TVP03 permit)	Same as Condition 14	Ambient Air Quality Protection Limit for Drill Rig Nonroad Engines Recordkeeping and Calculations	When a change is made to the drill rig nonroad engine emissions unit inventory, calculate and record the cumulative drill rig nonroad engine rated capacity.	Yes	Recordkeeping as required by this condition.
New (14.1b in proposed TVP03 permit)	Same as Condition 14	Ambient Air Quality Protection Limit for Drill Rig Nonroad Engines Reporting	Include in the Operating Report the cumulative drill rig nonroad engine rated capacity for each month of the reporting period.	Yes	Reporting as required by this condition.
New (14.1c in proposed TVP03 permit)	Same as Condition 14	Ambient Air Quality Protection Limit for Drill Rig Nonroad Engines Permit Deviation Reporting	Notify ADEC whenever the cumulative drill rig nonroad engine rated capacity exceeds 8,615 bHp.	Yes	Any deviation from the applicable limit is reported in a Permit Deviation report.

FORM B2**Emissions Unit Detail Form - Internal Combustion Equipment (Engines and Turbines)****Permit Number:** **AQ0091TVP02** ☐**Emissions Unit ID No. // Operating Scenario:** **S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S13, S14 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
18 AAC 50.055(a)(1) – Fuel Burning Equipment Emission Standards: Visible Emissions 18 AAC 50.055(b)(1) – Fuel Burning Equipment Emission Standards: Particulate Matter 18 AAC 50.055(c) – Fuel Burning Equipment Emission Standards: Sulfur Compound Emissions	Nonroad (mobile) internal combustion engines are not included in the definition of fuel-burning equipment (see 18 AAC 50.990).
40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	These rules do not apply to nonroad engines.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B4

Emissions Unit Detail Form – Volatile Liquid Storage Tanks

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	TankIEUs // 1
2.	Date installation/construction commenced	Tyonek Platform Tanks – 1968 Spartan 151 Drill Rig Tanks - 1981 See Form B
3.	Date installed	Tyonek Platform Tanks – 1968 Spartan 151 Drill Rig Tanks – N/A
4.	Special control requirements? [if yes, describe]	N/A
5.	Rated capacity (gallons)	Various, See Form B
6.	Tank height (ft)	Various, See Storage Tank Details and Emissions Summary Table in Form Series D and Emission Master Tanks reports in Section 9 for tank specifications.
7.	Tank diameter (ft)	Various, See Storage Tank Details and Emissions Summary Table in Form Series D and Emission Master Tanks reports in Section 9 for tank specifications.
8.	Tank age (years)	Tyonek Platform Tanks – 55 Spartan 151 Drill Rig Tanks – 42 (Derived from commenced construction date)
9.	Submerged fill pipe?	N/A
10.	Type of tank (specify)	Various, See Storage Tank Details and Emissions Summary Table in Form Series D and Emission Master Tank reports in Section 9 for tank specifications.
11.	Underground?	No
	If underground, specify type of tube and vapor return.	
12.	Above ground vapor control information:	N/A
	Pipe material	
	Pipe size	
	Piping drainage (continuous drain downward or condensate collection tank – if condensate collection, attach a description)	
	Isolation valve installed in piping?	
13.	Pressure vacuum relief valves:	
	Vent pressure settings (psia)	
	Months in which relief valves removed (specify)	
14.	Pressure conservation vent? [if yes, specify pressure setting – psia]	

FORM B4

Emissions Unit Detail Form – Volatile Liquid Storage Tanks

Permit Number: **AQ0091TVP02**

15.	Fixed roof tanks:	Various, See Storage Tank Details and Emissions Summary Table in Form Series D and Emission Master Tanks reports in Section 9 for tank specifications.
	Roof color	
	Shell color	
	Average vapor space height (ft)	
	Shell condition (specify)	
16.	Floating roof tanks:	N/A
	Type of construction (specify)	
	Condition (specify)	
	Tank color	
	Deck type (specify)	
17.	External floating roof tanks, seal type (specify)	N/A
18.	Internal floating roof tanks:	N/A
	Seal type (specify)	
	Number of columns	
	Effective column diameter (ft)	
	Total deck seam length (ft)	
	Deck fitting types – access hatch	N/A
	 bolted cover, gasketed	
	 unbolted cover, gasketed	
	 unbolted cover, ungasketed	
	Deck fitting types - Automatic gauge float well	N/A
	 bolted cover, gasketed	
	 unbolted cover, gasketed	
	 unbolted cover, ungasketed	
	Deck fitting types – column well	N/A
	 Built up column – sliding cover, gasketed	
	 Built up column – sliding cover, ungasketed	
	 Pipe column – flexible fabric sleeve seal	
	 Pipe column – – sliding cover, gasketed	
	 Pipe column – – sliding cover, ungasketed	

FORM B4

Emissions Unit Detail Form – Volatile Liquid Storage Tanks

Permit Number: **AQ0091TVP02**

	Deck fitting types – ladder well	N/A
	sliding cover, gasketed	
	sliding cover, ungasketed	
	Deck fitting types – sample well or pipe	N/A
	Slotted pipe – sliding cover, gasketed	
	Slotted pipe – sliding cover, ungasketed	
	Sample well – slit fabric seal, 10% open area	
	Stub drain – 1-inch diameter	
	Deck fitting type – roof leg or hanger will	N/A
	Adjustable	
	Fixed	
	Deck fitting type – vacuum breaker	N/A
	Weighted mechanical actuation, gasketed	
	Weighted mechanical actuation, ungasketed	
19.	Maximum liquid loading rate (gal/hr)	Various, See Storage Tank Details and Emissions Summary Table in Form Series D and Emission Master Tanks reports in Section 9 for tank specifications.
20.	Submerged fill at out-loading (describe)	N/A
21.	Material(s) stored	Various, See Storage Tank Details and Emissions Summary Table in Form Series D and Emission Master Tanks reports in Section 9 for tank specifications.
	Type of material	
	Normal annual throughput (gal/yr)	
	Normal turnovers per year	
	Density (lbs/gal)	
	Molecular weight	
	Average storage temperature (°F)	
	Vapor pressure (psi)	

FORM B4

Emissions Unit Detail Form – Volatile Liquid Storage Tanks

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **TankIEUs // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/Pollutant	Limit/Standard/Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
None	None	None	None	N/A	N/A

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B4

Emissions Unit Detail Form – Volatile Liquid Storage Tanks

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **TankIEUs // 1**

Non-applicable Requirements Specific to Emissions Unit (**All insignificant storage tanks > 10,000 gallons, including those not storing a VOL**)

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
Storage Tanks w/ Capacity >10,000 gallons Diesel Storage (Tag nos. TK-112A and TK-112B) Diesel Storage for the Spartan 151 Drill Rig (Tanks #10 and #12) Produced Water Storage (Tag nos. TK-101B, TK-102A, TK-102B, TK-102C, TK-102D, TK-109, and TK-110) Glycol Storage (Tag nos. TK-111A and TK-111B) Water Storage (Tag nos. TK-101A, TK-104B, TK-105A, and TK-105B)	
40 C.F.R. 60 Subpart K - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	Vessels commenced construction prior to or after the effective dates of Subpart K (6/12/73 – 5/18/78).
40 C.F.R. 60 Subpart Ka - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	All vessels except the Spartan 151 Drill Rig diesel storage vessels: commenced construction prior to the effective dates of Subpart Ka (5/19/78 – 7/22/84). Spartan 151 Drill Rig diesel storage vessels: Each vessel storage capacity is below the Subpart Ka applicability threshold (40,000 gallons).
40 C.F.R. 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	Vessels commenced construction prior to the effective date of Subpart Kb (7/23/84).

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B5

Emissions Unit Detail Form - Miscellaneous Emissions Units

Permit Number: **AQ0091TVP02**

1.	Emissions Unit ID Number // Operating Scenario	40, 41, 42 // 1
2.	Date installation/construction commenced	Unknown
3.	Date installed	1968
4.	Emissions Unit serial number	36517, 36518, 36519
5.	Special control requirements? [if yes, describe]	No
6.	Description of process: Glycol Regenerator Reboiler Vents 1, 2, and 3. The glycol dehydration system removes the water that the glycol picks up from the gas in the absorber, cleans the glycol by heat and filtration, and returns the glycol to the absorber to collect more water and repeat the cycle. Water-rich triethylene glycol (TEG) from each glycol absorber flows to one of three glycol regenerators where it is heated and the absorbed water vapor boiled off. Each regenerator includes a reboiler (designed for 275,000 BTU/hr heat transfer rate) with a packed still column. The regenerated lean (dry) TEG is cooled and pumped back into the absorber. The Tyonek Platform glycol dehydration reboiler process vents are not captured and recycled back to the gas handling process. However, HAP emissions (actual and potential to emit) from the Tyonek Platform glycol dehydration unit process vents are zero or negligible because the field gas is composed of greater than 99.9% CH ₄ , C ₂ H ₆ , and N ₂ , and there are no HAP constituents in the gas. Since there is no HAP being absorbed by the TEG liquid desiccant, no HAP is generated during regeneration of the TEG. As a result, each TEG dehydration unit is exempt from the standards and provisions of 40 C.F.R. 63 NESHAP Subpart HH, except for the requirements set out at §§63.774(d)(1), 63.764(e)(1), 63.772(b)(2), and 63.764(j). The Tyonek Platform produces gas that is not evolved from black oil, so the "black oil exemption" from Subpart HH does not apply.	
7.	Continuous or batch process? [if batch, maximum batches per hour]	NA

8. Raw material usage: [for EACH raw material used, enter]:

Material	Maximum design capacity (lbs/batch or lbs/hr)
NA	NA

9. Production data: [for EACH product, enter]:

Product	Maximum design capacity (lbs/batch or lbs/hr)
NA	NA

10. Attach any additional information necessary to describe this process and its operating and usage parameters, both short-term and annual.

FORM B5

Emissions Unit Detail Form - Miscellaneous Emissions Units

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **40, 41, 42 // 1**

Applicable Requirements Specific to Emissions Unit

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
31	40 C.F.R. 63.1-63.16, Subpart A 40 C.F.R. 63.764(a) & Appendix to Subpart HH, Table 2	NESHAP Subpart A General Provisions	Comply with the applicable provisions of 40 C.F.R. 63, Subpart A.	Yes	Compliance with applicable requirements of 40 C.F.R. 63, Subpart A, is demonstrated by records kept on file.
32	40 C.F.R. 63.760(a), (b)(2), §63.760(f)(5)(ii), §63.764(e)(1)(ii), Subpart HH	NESHAP Subpart HH Monitoring to confirm benzene emissions are below Subpart HH small dehydrator threshold	Maintain a record of actual average benzene emissions from the glycol dehydration units vented to the atmosphere to demonstrate benzene emissions are less than 0.90 Mg/yr.	Yes	Emissions calculation records.
32.1	40 C.F.R. 63.772(b)(2)(i), Subpart HH	NESHAP Subpart HH Emissions Estimation Method	Use GRI-GLYCalc Version 3 or higher and the procedures presented in the associated Technical Reference Manual to calculate actual average benzene emissions. Inputs into the model shall be representative of actual operating conditions of the glycol dehydration units. Alternatively, comply with new Condition 33.1b.	Yes	Emissions calculation records.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM B5

Emissions Unit Detail Form - Miscellaneous Emissions Units

Permit Number: **AQ0091TVP02**Emissions Unit ID No. // Operating Scenario: **40, 41, 42 // 1****Applicable Requirements Specific to Emissions Unit**

Condition Number	Applicable Requirement Citation¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
New (33.1b in proposed TVP03 permit)	40 C.F.R. 63.772(b)(2)(ii), Subpart HH	NESHAP Subpart HH Emissions Estimation Method	As an alternative to Condition 32.1 (above), determine actual average benzene emissions through direct measurement using the methods in 40 C.F.R. 63.772(a)(1)(i) or (ii), or an alternative method according to 40 C.F.R. 63.7(f). Determine annual emissions by multiplying the mass rate by the number of hours the unit is operated per year.	Yes	Emissions calculation records.
32.2	40 C.F.R. 63.774(d)(1)(ii), Subpart HH	NESHAP Subpart HH Recordkeeping	Maintain records to show actual average annual benzene emissions.	Yes	Emissions calculation records.
New (34 in proposed TVP03 permit)	40 C.F.R. 63.764(j), Subpart HH	NESHAP Subpart HH Good Air Pollution Control Practice	At all times, operate and maintain these units in a manner consistent with safety and good air pollution control practices.	Yes	Records of operation and maintenance procedures are maintained on file.

FORM B5

Emissions Unit Detail Form - Miscellaneous Emissions Units

Permit Number: **AQ0091TVP02** ☐Emissions Unit ID No. // Operating Scenario: **40, 41, 42 // 1****Non-applicable Requirements Specific to Emissions Unit**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
(See Form E4 for a stationary source-wide permit shield pertaining to 40 C.F.R. 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities.)	

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

SECTION 3 - FORM SERIES C

Form C5 – Pollution Control Devices – Other Pollution Control Devices
(EU IDs 8, 9)

Tyonek Platform

**Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1**

HILCORP ALASKA, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)

P.O. Box 244027

Anchorage, AK 99524-4027

February 2023

FORM C5

Pollution Control Device Form - Other Pollution Control Devices

Permit Number: **AQ0091TVP02**

1.	Name	Catalytic converters (NSCR) for the Waukesha L-7042G engines (EU IDs 8 and 9)
2.	Emission Unit ID Number	NA
3.	Date installed	1992 (estimated)
4.	Manufacturer	Unknown
5.	Model number	Unknown
6.	Type of device (describe): Three-way catalyst with air fuel controller.	
7.	Rated efficiency (%)	(Subpart ZZZZ Table 6 Item 15.a.i requirement) >75% CO reduction, CO outlet concentration ≤270 ppm @ 15% O ₂ , or ≥30% THC reduction
8.	Date of most recent source test on control device	<u>NO_x</u> EU ID 8: April 28, 2015 EU ID 9: April 29, 2015. <u>CO</u> EU ID 8: April 29, 2022 EU ID 9: April 28, 2022. <u>VOCs</u> EU ID 8: December 12, 2013 EU ID 9: December 28, 2013
9.	Emission factor (result) of most recent source test	<u>EU ID 8</u> 0.46 g NO _x /bhp-hr and 0.33 lb NO _x /hr. <u>EU ID 9</u> 0.17 g NO _x /bhp-hr and 0.13 lb NO _x /hr. <u>CO outlet concentration - 2022 test</u> EU ID 8: 73.3 ppm @ 15% O ₂ EU ID 9: 25.8 ppm @15% O ₂
10.	Design inlet gas flow rate (acfm)	1,945 acfm (calculated using 40 CFR 60 Appendix A-1 Method 2, Equation 2-8). The measured inlet gas flow rate into the catalyst was 575 dry-scf/min during the 2022 source test.
11.	Describe control device operating limits	From Subpart ZZZZ, Table 6, Items 15.a.ii, 15.a.iii – 4-hour rolling average catalyst inlet temperature is to be maintained between 750°F and 1250°F; or The engine is to be shut down immediately if the catalyst inlet temperature exceeds 1250°F.
12.	Control device subject to Compliance Assurance Monitoring (CAM) under 40 C.F.R. Part 64?	No

FORM C5
Pollution Control Device Form - Other Pollution Control Devices
Control Device-Specific Applicable Requirements

Permit Number: **AQ0091TVP02**Control Device Name: **Catalytic converters (NSCR)
for the Waukesha L-7042G engines (EU IDs 8 and 9)**Emission Unit ID No.: **NA****Applicable Requirements Specific to Control Device**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Determine Compliance
New (36.4b and 36.4c in proposed TVP03 permit)	40 C.F.R. 63 Subpart ZZZZ Table 6, Items 15.a.ii & 15.a.iii	NESHAP Subpart ZZZZ Monitoring	Pertaining to the catalyst inlet temperature: a) maintain the 4-hour rolling average catalyst inlet temperature to within greater than or equal to 750 °F and less than or equal to 1250 °F; or b) Install equipment to automatically shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F and immediately shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F	Yes	Equipment is installed that automatically shuts down the affected engine if the catalyst inlet temperature exceeds 1250 °F.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM C5
Pollution Control Device Form - Other Pollution Control Devices
Control Device-Specific Applicable Requirements

Permit Number: **AQ0091TVP02**Control Device Name: **Catalytic converters (NSCR)
for the Waukesha L-7042G engines (EU IDs 8 and 9)**Emission Unit ID No.: **NA****Applicable Requirements Specific to Control Device**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/ Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Determine Compliance
New (36.5 in proposed TVP03 permit)	40 C.F.R. 63, Subpart ZZZZ Table 5, Item 14.a.i	NESHAP Subpart ZZZZ Compliance Demonstration Requirements	Pertaining to emissions controlled by this device for EU IDs 8 and 9: a) The average reduction of emissions of CO must be 75 percent or more, or b) The average CO concentration must be less than or equal to 270 ppmvd at 15 percent O ₂ , or c) The average reduction of emissions of THC must be 30 percent or more.	Yes	The results of periodic source testing, the most recent of which was completed in 2022. See Item 9 on page 1 of this form.

FORM C5**Pollution Control Device Form - Other Pollution Control Devices
Control Device-Specific Permit Shield Request**

Control Device Name:**Catalytic converters (NSCR) for
the Waukesha L-7042G engines
(EU IDs 8 and 9)****Permit Number:** **AQ0091TVP02****Emission Unit ID No.:** **NA****Non-applicable Requirements Specific to Control Device**

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
None	None

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

SECTION 4 - FORM SERIES D

Section Introduction

Table D1-1 (Form D1 Substitute) – Criteria Pollutants and GHG Potential Annual Emissions for Significant and Insignificant Emissions Units at the Tyonek Platform

Form D1-2 - Example Emission Calculations

Table D1-2 (Form D1 Substitute) – HAP Potential Annual Emissions Summary for Significant and Insignificant Emissions Units at the Tyonek Platform

Table D1-3 (Form D1 Substitute) – Potential Annual VOC and HAP Emissions for Volatile Organic Liquid Storage Tanks that are not Categorically Insignificant Emissions Units at the Tyonek Platform

Form D2 – Stationary Source Emission Summary

Tyonek Platform

Air Quality Operating Permit Renewal Application Permit No. AQ0091TVP02, Revision 1

HILCORP ALASKA, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)
P.O. Box 244027
Anchorage, AK 99524-4027

February 2023

Permit No.: **AQ0091TVP02**

Operating Scenario: **1**

Control Device ID: **NSCR for EU IDs 8 and 9**

Tables D1-1 and **D1-2** provide general emissions information for the Tyonek Platform stationary source as required under 40 CFR 71.5(c)(3). The spreadsheets used to create **Tables D1-1** and **D1-2** are included in the ZIP folder (i.e., "Section 10") emailed to the Department with the application.

Table D1-1 provides the criteria pollutant and greenhouse gas (GHG) potential annual emissions summary for the Tyonek Platform¹. The basis for the criteria pollutant and GHG potential annual emissions estimates is provided with emission calculation examples at the end of **Table D1-1**.

Table D1-2 provides a summary of the hazardous air pollutant (HAP) emissions estimates for the Tyonek Platform.

Table D1-3 provides details regarding volatile organic compound (VOC) and HAP emissions estimates for tanks storing a volatile organic liquid that are not categorically insignificant emissions units (IEUs) at the Tyonek Platform. VOC and HAP emissions from tanks were estimated using Mitchell Scientific's Emission Master Tanks software, version 8.4.4.22, which incorporates the calculation methods found in AP-42 Chapter 7, Section 7.1 (06/2020). Electronic copies of **Table D1-3** and the detailed storage tank calculation reports generated by the software are included in the ZIP folder (i.e., "Section 10") emailed to the Department with the application. The storage tank calculation reports are also included in Section 9 of the PDF version of the application.

Emissions from nonroad engines (NREs) are not included in the application since emissions from NREs are not used when determining the classification (major or minor) of a stationary source under AS 46.14.130 (ref. 18 AAC 50.100). In addition, per documentation provided by the Department, emissions from NREs are not subject to fees.

¹ We have included GHG emissions estimates using EPA's 11/29/13 amendment to the global warming potential for methane (CH₄) and nitrous oxide (N₂O) [78 FR 71909]. However, the 6/23/14 Supreme Court decision indicates that GHG emissions are no longer to be used to determine Title V permit applicability. As such, GHG emission notes regarding Title V permit applicability should not be included in the Statement of Basis for permit no. AQ0091TVP03.

Table D1-1 (Form D1 Substitute): Criteria Pollutants and GHG Potential Annual Emissions Summary for Emissions Units at Tyonek Platform

Permit No.: AQ0091TVP02
Operating Scenario: 1
Control Devices: NSCR for EU IDs 8 and 9

EU ID	Tag No.	Emissions Unit Description	Rating/Size	Heat Consumption (0 deg F for turbines) (MMBtu/hr)		Hours of Operation (hrs/yr)	Annual Throughput	Fuel Type	Fuel Heating Value			NO _x	CO	PM ₁₀	VOC	SO ₂	N ₂ O	CO ₂	CH ₄	CO ₂ e	CO ₂ e		
				LHV	HHV				LHV	HHV	(units)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tonnes/yr)	(tonnes/yr)	(tonnes/yr)	(tonnes/yr)	(tonnes/yr)	(tonnes/yr)	
GAS-FIRED TURBINES																							
1	TY-C-4101A	Solar Centaur T-4700 Turbine #1	4,700	hp (ISO)	46.3	51.5	15,752 (combined)	805.0 (combined limit)	MMscf	NG	906	1,007	Btu/scf	243.9	44.5	2.68	4.59	13.6	0.0811	43,012	0.811	43,057	47,461
2	TY-C-4101B	Solar Centaur T-4700 Turbine #2	4,700	hp (ISO)	46.3	51.5				NG	906	1,007	Btu/scf										
3	TY-C-4102A	Solar Taurus 60 T-7300S Turbine #3	7,170	hp (ISO)	61.4	68.2	8,760	593.7	MMscf	NG	906	1,007	Btu/scf	27.2	43.8	1.97	1.69	10.0	0.0597	31,700	0.597	31,732	34,979
4	TY-C-4102B	Solar Taurus 60 T-7300S Turbine #4	7,170	hp (ISO)	61.4	68.2	8,760	593.7	MMscf	NG	906	1,007	Btu/scf	27.2	43.8	1.97	1.69	10.0	0.0597	31,700	0.597	31,732	34,979
GAS-FIRED ENGINES & HEATERS																							
8	TY-G-3201A	Waukesha L-7042G Generator Engine #1	810	hp		5.7	8,760	49.6	MMscf	NG	906	1,007	Btu/scf	15.6	15.0	0.485	7.82	0.836	0.0050	2,649	0.050	2,652	2,923
9	TY-G-3201B	Waukesha L-7042G Generator Engine #4	810	hp		5.7	8,760	49.6	MMscf	NG	906	1,007	Btu/scf	15.6	15.0	0.485	7.82	0.836	0.0050	2,649	0.050	2,652	2,923
10	Gas Heater	BS&B Glycol Heater #1	11.1	MMBtu/hr		11.1	8,760	195.0	MMscf	NG	906	1,007	Btu/scf	9.63	8.09	0.732	0.529	3.29	0.0196	10,419	0.196	10,430	11,497
~~11~~	~~Gas Heater~~	~~Glycol Heater #2~~	~~11.1~~	~~MMBtu/hr~~	<del></del>	~~11.1~~	~~8,760~~	~~195.0~~		~~NG~~	~~906~~	~~1,007~~	~~Btu/scf~~										
12	Gas Heater	BS&B Glycol Heater #3	11.1	MMBtu/hr		11.1	8,760	(combined limit)		NG	906	1,007	Btu/scf										
DIESEL-FIRED ENGINES																							
20	TY-G-3502A	Caterpillar D-398 Standby Generator Engine #1	795	hp		5.5	2,250	89,778	gal	Diesel		137,000	Btu/gal	20.2	3.00	0.140	0.180	1.57	0.0074	901	0.037	904	997
21	TY-G-3502B	Caterpillar D-398 Standby Generator Engine #2	795	hp		5.5	2,250	89,778	gal	Diesel		137,000	Btu/gal		3.00	0.140	0.180	1.57	0.0074	901	0.037	904	997
24	TY-CR-0001	Caterpillar C9.3 Crane Engine	350	hp		2.4	8,760	150,672	gal	Diesel		137,000	Btu/gal		0.31	0.019	0.438	2.64	0.0124	1,512	0.062	1,517	1,672
25	TY-CR-0002	John Deere 6135HF485F Crane Engine	500	hp		3.5	8,760	223,380	gal	Diesel		137,000	Btu/gal		15.8	0.90	0.90	3.91	0.0184	2,242	0.092	2,249	2,480
28	TY-C-0015	John Deere 4039DF001 Air Compressor Engine	80	hp		0.6	8,760	37,230	gal	Diesel		137,000	Btu/gal		2.34	0.771	0.865	0.652	0.0031	374	0.015	375	413
33	TY-P-2809A	Caterpillar 3306 Firewater Engine #1	231	hp		1.7	6,547	79,216	gal	Diesel		137,000	Btu/gal		3.44	0.831	0.894	1.39	0.0065	795	0.033	798	879
34	TY-P-2809B	Caterpillar 3306 Firewater Engine #2	231	hp		1.7	6,547	79,216	gal	Diesel		137,000	Btu/gal		3.44	0.831	0.894	1.39	0.0065	795	0.033	798	879
FLARES & FLARE PILOTS (IEU)																							
37	TY-V-0006	HP & LP Flare Pilots (IEU)	0.125	MMBtu/hr			8,760	1.1	MMscf	NG	906	1,007	Btu/scf	0.037	0.15	0.015	Note 1	0.018	0.001	58	0.001	59	65
38	TY-V-0005	HP Safety Flare - routine	583.3	MMBtu/hr			8,760	252.0 (combined limit)	MMscf	NG	906	1,007	Btu/scf	8.63	35.4	3.39	Note 1	4.25	0.230	13,542	96	16,016	17,654
39	TY-V-0007	LP Safety Flare - routine	53.3	MMBtu/hr			8,760			NG	906	1,007	Btu/scf				Note 1						
VENTS																							
40	TY-H-2611	Glycol Regenerator #1 Reboiler Vent	2020	scfh			8,760							---	---	---	Note 1	---	---	Note 1	Note 1	Note 1	Note 1
41	TY-H-2612	Glycol Regenerator #2 Reboiler Vent	2020	scfh			8,760							---	---	---	Note 1	---	---	Note 1	Note 1	Note 1	Note 1
42	TY-H-2613	Glycol Regenerator #3 Reboiler Vent	2020	scfh			8,760							---	---	---	Note 1	---	---	Note 1	Note 1	Note 1	Note 1
INSIGNIFICANT EMISSIONS UNITS (OTHER THAN EU ID 37)																							
--	TY-H-2611	Glycol Regenerator Reboiler #1	0.275	MMBtu/hr		0.275	8,760	2.39	MMscf	NG	906	1,007	Btu/scf	0.111	0.047	0.009	0.006	0.040	0.0002	128	0.002	128	141
--	TY-H-2612	Glycol Regenerator Reboiler #2	0.275	MMBtu/hr		0.275	8,760	2.39	MMscf	NG	906	1,007	Btu/scf	0.111	0.047	0.009	0.006	0.040	0.0002	128	0.002	128	141
--	TY-H-2613	Glycol Regenerator Reboiler #3	0.275	MMBtu/hr		0.275	8,760	2.39	MMscf	NG	906	1,007	Btu/scf	0.111	0.047	0.009	0.006	0.040	0.0002	128	0.002	128	141
--	Various	Tyonek Platform Unregulated/IEU Tanks	Various					Various	gal								0.016						
S12	---	Spartan 151 Drill Rig Unregulated/IEU Diesel Fuel Storage Tanks #10 through #13	Various					Various	gal								0.008						
SIGNIFICANT EMISSIONS UNITS (w/o NREs)													368	237	15.3	28.5	55.9	0.5220	143,191	98.823	145,817	160,734	
INSIGNIFICANT EMISSIONS UNITS													0.37	0.29	0.04	0.04	0.14	0.0018	442	0.008	443	488	
STATIONARY SOURCE TOTAL													368	237	15.4	28.6	56.1	0.5238	143,633	98.831	146,259	161,222	

Notes:

(1) Gas (wet gas) produced from the Beluga/Tyonek Pool is primarily composed of methane with a lesser fraction of ethane, carbon dioxide and nitrogen, and negligible (near zero) VOC content (non-methane, non-ethane C3+ hydrocarbons). Organic hazardous air pollutant (HAP) compounds include certain VOCs with six or more carbon atoms (C6+), and the C6+ fraction in the fluids (gas and liquid phase) produced from the Beluga/Tyonek Pool is zero or trace. These light hydrocarbons and inert gases are soluble in water and triethylene glycol. It follows that emissions from the glycol regenerator process vents and produced water tanks are composed of GHGs (methane and carbon dioxide) with zero or near zero VOC. The treated (dehydrated) gas and any flare gas are similarly devoid of VOCs. For these reasons, VOC and HAP emissions from the flares, glycol regenerator process vents, and produced water tanks are zero or negligible. Note: Glycol regenerator process vent gas is routed through TK-109 and the LP knockout drum to the LP flare. Produced water tanks (categorical IEUs) also vent to the flare.

(2) Bureau of Ocean Energy Management's (BOEM) web-based emissions reporting tool, the Outer Continental Shelf Air Quality System (OCS AQs).

Emission Factors and Example Calculations – Criteria Pollutants:

GAS-FIRED TURBINES

EU IDs 1 and 2

Methodology Demonstrated: NO_x, CO, PM₁₀, SO₂, and VOC emissions from EU IDs 1 and 2 are based on a combined fuel consumption limit of 805 million standard cubic feet (MMscf) per 12-month period and the following:

NO_x: NSPS Subpart GG limit of 165 ppmv at 15% oxygen on a dry basis

CO: 0.122 lb/MMBtu [LHV] (vendor data)

PM₁₀: 0.0066 lb/MMBtu [HHV] (AP-42 Table 3.1-2a, 4/00)

SO₂: sulfur mass balance and a fuel gas H₂S limit of 200 ppmv

VOC: 0.0126 lb/MMBtu [LHV] (vendor data)

NO_x Example Calculation: $(165 \text{ ppmv NO}_x) * (1.194\text{E-}07 \text{ lb/dscf-ppmv}) * (9,582 \text{ dscf/MMBtu [LHV]}) * (20.9\% / (20.9\% - 15\%)) = 0.6687 \text{ lb NO}_x/\text{MMBtu [LHV]}$
 $(0.6687 \text{ lb NO}_x/\text{MMBtu [LHV]}) * (906 \text{ Btu/scf [LHV]}) * (805 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{243.9 \text{ tons NO}_x/\text{yr}}$ (EU IDs 1 & 2 combined)

CO Example Calculation: $(0.122 \text{ lb CO/MMBtu [LHV]}) * (906 \text{ Btu/scf [LHV]}) * (805 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{44.5 \text{ tons CO/yr}}$ (EU IDs 1 & 2 combined)

SO₂ Example Calculation: $(200 \text{ scf H}_2\text{S}/10^6 \text{ scf}) * (\text{lb-mole H}_2\text{S}/379.6 \text{ scf H}_2\text{S}) * (\text{lb-mole SO}_2/\text{lb-mole H}_2\text{S}) * (64 \text{ lb SO}_2/\text{lb-mole SO}_2) = 33.72 \text{ lb SO}_2/\text{MMscf}$
 $(33.72 \text{ lb SO}_2/\text{MMscf}) * (805 \text{ MMscf/year}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{13.6 \text{ tons SO}_2/\text{yr}}$ (EU IDs 1 & 2 combined)

PM₁₀ Example Calculation: $(0.0066 \text{ lb PM/MMBtu [HHV]}) * (1,007 \text{ Btu/scf [HHV]}) * (805 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{2.68 \text{ tons PM}_{10}/\text{yr}}$ (EU IDs 1 & 2 combined)

EU IDs 3 and 4 (calculation shown for EU ID 3)

Methodology Demonstrated: NO_x, CO, PM₁₀, SO₂, and VOC emissions from EU IDs 3 and 4 are based on the following:

NO_x: 6.2 lb/hr (BACT limit)

CO: 0.163 lb/MMBtu [LHV] (2010 source test result plus 10%)

PM₁₀: 0.0066 lb/MMBtu [HHV] (AP-42 Table 3.1-2a, 4/00)

SO₂: sulfur mass balance and a fuel gas H₂S limit of 200 ppmv

VOC: 0.0063 lb/MMBtu [LHV] (vendor data)

NO_x Example Calculation: $(6.2 \text{ lb NO}_x/\text{hr}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{27.2 \text{ tons NO}_x/\text{yr}}$

CO Example Calculation: $(0.163 \text{ lb CO/MMBtu [LHV]}) * (61.4 \text{ MMBtu/hr [LHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{43.8 \text{ tons CO/yr}}$

SO₂ Example Calculation: $(200 \text{ scf H}_2\text{S}/10^6 \text{ scf}) * (\text{lb-mole H}_2\text{S}/379.6 \text{ scf H}_2\text{S}) * (\text{lb-mole SO}_2/\text{lb-mole H}_2\text{S}) * (64 \text{ lb SO}_2/\text{lb-mole SO}_2) = 33.72 \text{ lb SO}_2/\text{MMscf}$
 $(33.72 \text{ lb SO}_2/\text{MMscf}) * (\text{scf}/906 \text{ Btu [LHV]}) * (61.4 \text{ MMBtu/hr [LHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{10.0 \text{ tons SO}_2/\text{yr}}$

PM₁₀ Example Calculation: $(0.0066 \text{ lb PM/MMBtu [HHV]}) * (61.4 \text{ MMBtu/hr [LHV]}) * (1,007 \text{ Btu [HHV]}/906 \text{ Btu [LHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{1.97 \text{ tons PM}_{10}/\text{yr}}$

GAS-FIRED ENGINES

EU IDs 8 and 9

Methodology Demonstrated: Although EU IDs 8 and 9 are not subject to NSPS Subpart JJJJ, the Subpart JJJJ emission standards in Table 1 for Non-Emergency SI Natural Gas Engines ≥500 hp (manufactured after July 1, 2007) were used to estimate NO_x and VOC emissions because they assume the use of a three-way catalyst for rich burn engines.

EFs: 2.0 g NO_x/hp-hr (3.57 lb NO_x/hr); 1.0 g VOC/hp-hr (1.8 lb VOC/hr)

NO_x Example Calculation: $(2.0 \text{ g NO}_x/\text{hp-hr}) * (810 \text{ hp}) * (1 \text{ lb}/453.59 \text{ g}) = 3.57 \text{ lb NO}_x/\text{hr}$
 $(3.57 \text{ lb NO}_x/\text{hr}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{15.6 \text{ tons NO}_x/\text{yr}}$

FormD1_2 TYK_Example Calculations_(Final).docx

CO emissions estimates are based on the CO compliance demonstration level of 270 ppmvd at 15% O₂ in NESHAP Subpart ZZZZ.

CO Example Calculation: $(270 \text{ ppmv CO}) * (7.267\text{E-}08 \text{ lb/dscf-ppmv}) * (8,621 \text{ dscf/MMBtu [HHV]}) * (20.9\% / (20.9\% - 15\%)) = 0.60 \text{ lb CO/MMBtu [HHV]}$
 $(0.60 \text{ lb CO/MMBtu [HHV]}) * (5.7 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{15.0 \text{ tons CO/yr}}$

PM₁₀ emissions are based on PM₁₀ filterable and PM condensable emission factors from AP-42 Table 3.2-3 (7/00).

EFs: $0.00991 \text{ lb PM/MMBtu (condensable)} + 0.0095 \text{ lb PM}_{10}\text{/MMBtu (filterable)} = 0.0194 \text{ lb PM}_{10}\text{/MMBtu}$

PM₁₀ Example Calculation: $(0.0194 \text{ lb PM}_{10}\text{/MMBtu [HHV]}) * (5.7 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{0.485 \text{ ton PM}_{10}\text{/yr}}$

SO₂ emissions are based on a sulfur mass balance and a fuel gas H₂S content limit of 200 ppmv.

SO₂ Example Calculation: $(200 \text{ scf H}_2\text{S}/10^6 \text{ scf}) * (\text{lb-mole H}_2\text{S}/379.6 \text{ scf H}_2\text{S}) * (\text{lb-mole SO}_2\text{/lb-mole H}_2\text{S}) * (64 \text{ lb SO}_2\text{/lb-mole SO}_2) = 33.72 \text{ lb SO}_2\text{/MMscf}$
 $(33.72 \text{ lb SO}_2\text{/MMscf}) * (\text{scf}/1,007 \text{ Btu [HHV]}) * (5.7 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{0.836 \text{ ton SO}_2\text{/yr}}$

GAS-FIRED HEATERS

EU IDs 10 and 12

Methodology Demonstrated: NO_x, CO, PM₁₀, and VOC emissions from EU IDs 1 and 2 are based on the combined fuel consumption ORL of 195 MMscf per 12-month period and emission factors from AP-42 Tables 1.4-1 and 1.4-2 (7/98). SO₂ emissions are based on a sulfur mass balance and a fuel gas H₂S content limit of 200 ppmv.

EFs: 100 lb NO_x/MMscf; 84 lb CO/MMscf; 7.6 lb PM₁₀/MMscf; 5.5 lb VOC/MMscf

NO_x Example Calculation: $(100 \text{ lb NO}_x\text{/MMscf}) * (\text{scf}/1,020 \text{ Btu [HHV]}) * (1,007 \text{ Btu/scf [HHV]}) * (195 \text{ MMscf/year}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{9.63 \text{ tons NO}_x\text{/yr}}$

SO₂ Example Calculation: $(200 \text{ scf H}_2\text{S}/10^6 \text{ scf}) * (\text{lb-mole H}_2\text{S}/379.6 \text{ scf H}_2\text{S}) * (\text{lb-mole SO}_2\text{/lb-mole H}_2\text{S}) * (64 \text{ lb SO}_2\text{/lb-mole SO}_2) = 33.72 \text{ lb SO}_2\text{/MMscf}$
 $(33.72 \text{ lb SO}_2\text{/MMscf}) * (195 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{3.29 \text{ tons SO}_2\text{/yr}}$

Glycol Regenerator Reboilers (IEUs)

Methodology Demonstrated: NO_x, CO, PM₁₀, and VOC emissions from the glycol regenerator reboilers are based on emission factors from AP-42 Tables 1.4-1 and 1.4-2 (7/98). SO₂ emissions are based on a sulfur mass balance and a fuel gas H₂S concentration of 200 ppmv. Calculations assume continuous operation.

EFs: 94 lb NO_x/MMscf (<0.3 MMBtu/hr); 40 lb CO/MMscf (<0.3 MMBtu/hr); 7.6 lb PM₁₀/MMscf; 5.5 lb VOC/MMscf

NO_x Example Calculation: $(94 \text{ lb NO}_x\text{/MMscf}) * (\text{scf}/1,020 \text{ Btu [HHV]}) * (0.275 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{0.11 \text{ ton NO}_x\text{/yr}}$

SO₂ Example Calculation: $(200 \text{ scf H}_2\text{S}/10^6 \text{ scf}) * (\text{lb-mole H}_2\text{S}/379.6 \text{ scf H}_2\text{S}) * (\text{lb-mole SO}_2\text{/lb-mole H}_2\text{S}) * (64 \text{ lb SO}_2\text{/lb-mole SO}_2) = 33.72 \text{ lb SO}_2\text{/MMscf}$
 $(33.72 \text{ lb SO}_2\text{/MMscf}) * (\text{scf}/1,007 \text{ Btu [HHV]}) * (0.275 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{0.04 \text{ ton SO}_2\text{/yr}}$

DIESEL-FIRED ENGINES

EU IDs 20, 21, 24, 25, 28, 33, and 34

NO_x emissions from EU IDs 20, 21, 24, 25, 28, 33, and 34 combined are equal to the NO_x ORL of 20.2 tons per 12-month period.

EU IDs 20, 21, 24, 25, 28, 33, and 34 (calculation shown for EU ID 33)

Methodology Demonstrated: The NO_x emission rate (lb/gal) was used to calculate the maximum annual hours of operation under the NO_x ORL.

Example Calculation: $(20.2 \text{ tons NO}_x\text{/yr}) * (2,000 \text{ lbs/ton}) * (\text{gal}/0.51 \text{ lb NO}_x) * (\text{hr}/12.1 \text{ gal}) = \mathbf{6,546.75 \text{ hrs/yr}}$

EU IDs 20, 21, 24, 25, 28, 33, and 34 (calculation shown for EU ID 33)

Methodology Demonstrated: Annual throughput is based on fuel consumption (gal/hr) and maximum annual hours of operation under the NO_x ORL.

Example Calculation: $(12.1 \text{ gal/hr}) * (6,546.75 \text{ hrs/yr}) = \mathbf{79,216 \text{ gal/yr}}$

EU IDs 20, 21, 24, 25, 28, 33, and 34 (calculation shown for EU ID 33)

Methodology Demonstrated: SO₂ emissions are based on a sulfur mass balance and a liquid fuel sulfur content limit of 0.25 wt%.

Example Calculation: (0.25 lb S/100 lb fuel) * (2 lb SO₂/lb S) * (7.0 lb/gal) * (79,216 gal/yr) * (1 ton/2,000 lbs) = **1.39 tons SO₂/yr**

EU IDs 20, 21, 24, 28, 33, and 34 (calculation shown for EU IDs 20 and 28)

Methodology Demonstrated: CO, PM₁₀, and VOC emissions are based on maximum annual hours of operation under the NO_x ORL and the following:

Vendor Data (EU IDs 20 & 21): 2.67 lb CO/hr; 0.124 lb PM/hr; 0.16 lb VOC/hr

Vendor Data (EU ID 24): 0.07 lb CO/hr; 0.0044 lb PM/hr; 0.10 lb VOC/hr

AP-42, Table 3.3-1 (EU ID 28): 6.68E-03 lb CO/hp-hr; 2.20E-03 lb PM₁₀/hp-hr; 2.47E-03 TOC lb/hp-hr (assumed to be VOC)

Vendor Data (EU IDs 33 & 34): 1.05 lb CO/hr; 0.254 lb PM/hr; 0.273 lb VOC/hr

Example Calculation: (2.67 lb CO/hr) * (2,250 hrs/yr) * (1 ton/2,000 lbs) = **3.00 tons CO/yr (EU ID 20)**

Example Calculation: (2.20E-03 lb PM₁₀/hp-hr) * (80 hp) * (8,760 hrs/yr) * (1 ton/2,000 lbs) = **0.771 ton PM₁₀/yr (EU ID 28)**

EU ID 25

Methodology Demonstrated: EU ID 25 is a model year 2008 non-emergency CI ICE rated at 500 hp (373 kW) that meets Tier 3 emission standards in Table 3 to Appendix I of 40 CFR Part 1039. CO, PM₁₀, and VOC emissions from this engine are based on maximum annual hours of operation under the NO_x ORL and Tier 3 emission standards multiplied by the not-to-exceed (NTE) multiplier of 1.25 found in 40 CFR 60.4212(c). The Tier 3 emission standard is 4.0 g/kW-hr for NO_x+NMHC. Individual emission factors for NO_x and NMHC (assumed to be equal to VOC) were determined using a NO_x/NMHC ratio of 95% to 5%. The 95% NMHC and 5% NO_x split is based on the June 28, 2004 policy from the California Air Resources Board titled "CARB Emission Factors for CI Diesel Engines – Percent HC in Relation to NMHC + NO_x."

CO EF: 4.375 g/kW-hr [Tier 3 emission standard (3.5 g/kW-hr) * NTE multiplier (1.25)]

PM EF: 0.25 g/kW-hr [Tier 3 emission standard (0.20 g/kW-hr) * NTE multiplier (1.25)]

VOC EF: 0.25 g/kW-hr [Tier 3 emission standard (4.0 g NO_x+NMHC/kW-hr) * 0.05 NMHC/(NO_x+NMHC) * NTE multiplier (1.25)]

Example Calculation: (4.375 g CO/kW-hr) * (1 lb/453.59 g) * (1 kW/1.341 hp) * (500 hp) * (8,760 hrs/yr) * (1 ton/2,000 lbs) = **15.8 tons CO/yr**

FLARE PILOTS, FLARES AND OTHER EMISSION SOURCES

EU ID 37 (Flare Pilots)

Methodology Demonstrated: NO_x, CO, and PM₁₀ emissions are based on emission factors from AP-42 Tables 13.5-1 and 13.5-2 (2/18) and a flare pilot rating of 0.125 MMBtu/hr. SO₂ emissions are based on a sulfur mass balance and a fuel gas H₂S content limit of 200 ppmv.

EFs: 0.068 lb NO_x/MMBtu [HHV]; 0.31 lb CO/MMBtu [LHV]; 40 µg PM/L of exhaust (exh)

NO_x Example Calculation: (0.068 lb NO_x/MMBtu [HHV]) * (0.125 MMBtu/hr [HHV]) * (8,760 hrs/yr) * (1 ton/2,000 lbs) = **0.037 ton NO_x/yr**

CO Example Calculation: (0.31 lb CO/MMBtu [LHV]) * (906 LHV / 1,007 HHV) * (0.125 MMBtu/hr [HHV]) * (8,760 hrs/yr) * (1 ton/2,000 lbs) = **0.15 ton CO/yr**

PM₁₀ Example Calculation: (40 µg/L-exh) * (g/10⁶ µg) * (1 lb/453.59 g) * (28.317 L-exh/scf exh) * (385.3 scf exh/lb-mole exh) = 9.62E-04 lb/lb-mole exh
(9.62E-04 lb/lb-mole exh) * (10.6 lb-mole exh/lb-mole fuel) * (lb-mole fuel/379.6 scf fuel) * (10⁶ scf/MMscf) = 26.87 lb/MMscf

(26.87 lb/MMscf) * (scf/1,007 Btu [HHV]) * (0.125 MMBtu/hr [HHV]) * (8,760 hrs/yr) * (1 ton/2,000 lbs) = **0.015 ton PM/yr**

SO₂ Example Calculation: (200 scf H₂S/10⁶ scf) * (lb-mole H₂S/379.6 scf H₂S) * (lb-mole SO₂/lb-mole H₂S) * (64 lb SO₂/lb-mole SO₂) = 33.72 lb SO₂/MMscf
(33.72 lb SO₂/MMscf) * (scf/1,007 Btu [HHV]) * (0.125 MMBtu/hr [HHV]) * (8,760 hrs/yr) * (1 ton/2,000 lbs) = **0.018 ton SO₂/yr**

FormD1_2 TYK_Example Calculations_(Final).docx

EU IDs 38 and 39 (flares; combined)

Methodology Demonstrated: NO_x, CO, and PM₁₀ emissions from EU IDs 38 and 39 are based on the combined throughput ORL of 252 MMscf per 12-month period and emission factors from AP-42 Tables 13.5-1 and 13.5-2 (2/18). SO₂ emissions are based on a sulfur mass balance and a fuel gas H₂S content limit of 200 ppmv.

EFs: 0.068 lb NO_x/MMBtu [HHV]; 0.31 lb CO/MMBtu [LHV]; 40 µg PM/L of exhaust

NO_x Example Calculation: $(0.068 \text{ lb NO}_x/\text{MMBtu [HHV]} * (1,007 \text{ Btu/scf [HHV]}) * (252 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{8.63 \text{ tons NO}_x/\text{yr}}$

CO Example Calculation: $(0.31 \text{ lb CO/MMBtu [LHV]} * (906 \text{ Btu/scf [LHV]}) * (252 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{35.4 \text{ tons CO/yr}}$

PM₁₀ Example Calculation: $(40 \text{ µg/L-exh}) * (g/10^6 \text{ µg}) * (1 \text{ lb}/453.59 \text{ g}) * (28.317 \text{ L-exh/scf exh}) * (385.3 \text{ scf exh/lb-mole exh}) = 9.62\text{E-}04 \text{ lb/lb-mole exh}$
 $(9.62\text{E-}04 \text{ lb/lb-mole exh}) * (10.6 \text{ lb-mole exh/lb-mole fuel}) * (\text{lb-mole fuel}/379.6 \text{ scf fuel}) * (10^6 \text{ scf/MMscf}) = 26.87 \text{ lb/MMscf}$
 $(26.87 \text{ lb/MMscf}) * (252 \text{ MMscf/yr}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{3.39 \text{ tons PM/yr}}$

SO₂ Example Calculation: $(200 \text{ scf H}_2\text{S}/10^6 \text{ scf}) * (\text{lb-mole H}_2\text{S}/379.6 \text{ scf H}_2\text{S}) * (\text{lb-mole SO}_2/\text{lb-mole H}_2\text{S}) * (64 \text{ lb SO}_2/\text{lb-mole SO}_2) = 33.72 \text{ lb SO}_2/\text{MMscf}$
 $(33.72 \text{ lb SO}_2/\text{MMscf}) * (252 \text{ MMscf/year}) * (1 \text{ ton}/2,000 \text{ lbs}) = \mathbf{4.25 \text{ tons SO}_2/\text{yr}}$

EU ID 37 (Flare Pilots), EU IDs 38 – 39 (Flares), 40 – 42 (Glycol Regenerator Process Vents), and Produced Water Tanks (IEUs)

VOC Emissions:

Gas (wet gas) produced from the Beluga/Tyonek Pool is primarily composed of methane with a lesser fraction of ethane, carbon dioxide and nitrogen, and negligible (near zero) VOC content (non-methane, non-ethane C₃+ hydrocarbons). Organic hazardous air pollutant (HAP) compounds include certain VOCs with six or more carbon atoms (C₆+), and the C₆+ fraction in the fluids (gas and liquid phase) produced from the Beluga/Tyonek Pool is zero or trace. These light hydrocarbons and inert gases are soluble in water and triethylene glycol (TEG). It follows that emissions from the glycol regenerator process vents and produced water tanks are composed of GHGs (methane and carbon dioxide) with zero or near zero VOC. The treated (dehydrated) gas and any flare gas are similarly devoid of VOCs. For these reasons, VOC and HAP emissions from flaring (including the flare pilots), gas treating process vents, and produced water tanks are zero or negligible.

Glycol regenerator process vent gas is routed through TK-109 and the low-pressure (LP) knockout drum to the LP flare. The produced water tanks also vent to the flare.

Unregulated Storage Tanks (excluding produced water tanks)

Tank emissions were estimated using Mitchell Scientific's Emission Master Tanks software, version 8.4.4.22. Emission Master Tanks incorporates the calculation methods found in AP-42 Chapter 7, Section 7.1. Tank physical characteristics, operating parameters, conditions, throughput, content information, and potential annual VOC and HAP emissions estimates are provided in Table D1-3. Detailed storage tank calculation reports generated by the software are provided in Sections 9 and 10 (electronic files in a separate ZIP folder) of the application.

Emission Factors and Example Calculations – Greenhouse Gases (GHG):

EU IDs 1 – 4, 8 – 10, 12, 20, 21, 24, 25, 28, 33, 34, 40 – 42, and glycol regenerator reboilers (IEUs) (calculations shown for EU IDs 1, 2, 3, 8, 10, 12, 24, and glycol regenerator reboilers (IEUs))

Methodology Demonstrated: Greenhouse gas emissions estimates (metric tons per year) are calculated using emission factors from 40 CFR Part 98, Subpart C, Tables C-1 and C-2. Carbon dioxide equivalent emissions (CO₂e) are calculated by multiplying the mass emissions of each GHG by its global warming potential, published in Table A-1 to Subpart A of 40 CFR Part 98, and summing the results.

EFs (Natural Gas): 53.06 kg CO₂/MMBtu; 0.001 kg CH₄/MMBtu; 0.0001 kg N₂O/MMBtu

EFs (Distillate Fuel): 73.25 kg CO₂/MMBtu; 0.003 kg CH₄/MMBtu; 0.0006 kg N₂O/MMBtu

Global Warming Potentials: CO₂ = 1; CH₄ = 25; N₂O = 298

Turbine EU IDs 1 and 2 (combined) (natural gas-fired)

Example Calculation: $(0.001 \text{ kg CH}_4/\text{MMBtu}) * (805 \text{ MMscf/yr}) * (1,007 \text{ Btu/scf [HHV]}) * (0.001 \text{ tonne/kg}) = \mathbf{0.811 \text{ tonne CH}_4/\text{yr}}$
 CO₂e Example Calculation: $(43,012 \text{ tonnes CO}_2/\text{yr}) + (0.811 \text{ tonne CH}_4/\text{yr} * 25) + (0.0811 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{43,057 \text{ tonnes CO}_2/\text{yr}}$
 $(43,057 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{47,461 \text{ tons CO}_2/\text{yr}}$

Turbine EU ID 3 (natural gas-fired)

Example Calculation: $(61.4 \text{ MMBtu/hr [LHV]}) * (1,007 \text{ Btu [HHV]}/906 \text{ Btu [LHV]}) = 68.2 \text{ MMBtu/hr [HHV]}$
 $(0.001 \text{ kg CH}_4/\text{MMBtu}) * (68.2 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (0.001 \text{ tonne/kg}) = \mathbf{0.597 \text{ tonne CH}_4/\text{yr}}$
 CO₂e Example Calculation: $(31,700 \text{ tonnes CO}_2/\text{yr}) + (0.597 \text{ tonne CH}_4/\text{yr} * 25) + (0.0597 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{31,732 \text{ tonnes CO}_2/\text{yr}}$
 $(31,732 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{34,979 \text{ tons CO}_2/\text{yr}}$

Engine EU ID 8 (natural gas-fired)

Example Calculation: $(53.06 \text{ kg CO}_2/\text{MMBtu}) * (5.7 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (0.001 \text{ tonne/kg}) = \mathbf{2,649 \text{ tonnes CO}_2/\text{yr}}$
 CO₂e Example Calculation: $(2,649 \text{ tonnes CO}_2/\text{yr}) + (0.05 \text{ tonne CH}_4/\text{yr} * 25) + (0.005 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{2,652 \text{ tonnes CO}_2/\text{yr}}$
 $(2,652 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{2,923 \text{ tons CO}_2/\text{yr}}$

Heater EU IDs 10 and 12 (combined) (natural gas-fired)

Example Calculation: $(0.001 \text{ kg CH}_4/\text{MMBtu}) * (195 \text{ MMscf/yr}) * (1,007 \text{ Btu/scf [HHV]}) * (0.001 \text{ tonne/kg}) = \mathbf{0.196 \text{ tonne CH}_4/\text{yr}}$
 CO₂e Example Calculation: $(10,419 \text{ tonnes CO}_2/\text{yr}) + (0.196 \text{ tonne CH}_4/\text{yr} * 25) + (0.0196 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{10,430 \text{ tonnes CO}_2/\text{yr}}$
 $(10,430 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{11,497 \text{ tons CO}_2/\text{yr}}$

Glycol Regenerator Reboilers #1 through #3 (IEUs) (natural gas-fired)

Example Calculation: $(0.001 \text{ kg CH}_4/\text{MMBtu}) * (0.275 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (0.001 \text{ tonne/kg}) = \mathbf{0.002 \text{ tonne CH}_4/\text{yr}}$
 CO₂e Example Calculation: $(128 \text{ tonnes CO}_2/\text{yr}) + (0.002 \text{ tonne CH}_4/\text{yr} * 25) + (0.0002 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{128 \text{ tonnes CO}_2/\text{yr}}$
 $(128 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{141 \text{ tons CO}_2/\text{yr}}$

Engine EU ID 24 (liquid fuel-fired)

Example Calculation: $(73.25 \text{ kg CO}_2/\text{MMBtu}) * (2.36 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (\text{tonne}/1,000 \text{ kg}) = \mathbf{1,512 \text{ tonnes CO}_2/\text{yr}}$
 CO₂e Example Calculation: $(1,512 \text{ tonnes CO}_2/\text{yr}) + (0.062 \text{ tonne CH}_4/\text{yr} * 25) + (0.0124 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{1,517 \text{ tonnes CO}_2/\text{yr}}$
 $(1,517 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ ton/tonne}) = \mathbf{1,672 \text{ tons CO}_2/\text{yr}}$

Flare Pilots EU ID 37

Methodology Demonstrated: Greenhouse gas emissions estimates (metric tons per year) for EU ID 37 are based on a flare pilot rating of 0.125 MMBtu/hr and flare pilot emission factors from the Bureau of Ocean Energy Management's (BOEM) web-based emissions reporting tool - the Outer Continental Shelf Air Quality System (OCS AQS). Carbon dioxide equivalent emissions are estimated using global warming potentials found in Table A-1 to Subpart A of Part 98 (CO₂=1; CH₄=25; and N₂O=298).

EFs: 120,000 lb CO₂/MMscf; 2.3 lb CH₄/MMscf; 2.2 lb N₂O/MMscf

Example Calculation: $(120,000 \text{ lb CO}_2/\text{MMscf}) * (\text{scf}/1,020 \text{ Btu [HHV]}) = 117.65 \text{ lb/MMBtu [HHV]}$
 $(117.65 \text{ lb/MMBtu [HHV]}) * (0.125 \text{ MMBtu/hr [HHV]}) * (8,760 \text{ hrs/yr}) * (1 \text{ tonne}/2,204.62 \text{ lbs}) = \mathbf{58 \text{ tonnes CO}_2/\text{yr}}$
 CO₂e Example Calculation: $(58 \text{ tonnes CO}_2/\text{yr}) + (0.001 \text{ tonne CH}_4/\text{yr} * 25) + (0.001 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{59 \text{ tonnes CO}_2/\text{yr}}$
 $(59 \text{ tonnes CO}_2/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{65 \text{ tons CO}_2/\text{yr}}$

Flare EU IDs 38 and 39

Methodology Demonstrated: Greenhouse gas emissions estimates (metric tons per year) for EU IDs 38 and 39 are based on the combined throughput limit of 252 MMscf per 12-month period and emission factors and calculation methodology for combustion flares (not including pilot) found in BOEM's OCS AQS. The CH₄ emissions estimate is based on the flared gas (FG) CH₄ content (99.6 mole% CH₄) and a flare combustion efficiency of 98%. The CO₂ and N₂O emissions estimates are based on 117.65 lb CO₂/MMBtu and 0.002 lb N₂O/MMBtu emission factors. Carbon dioxide equivalent emissions are estimated using global warming potentials found in Table A-1 to Subpart A of Part 98 (CO₂=1; CH₄=25; and N₂O=298).

CO₂ Example Calculation: $(117.65 \text{ lb CO}_2/\text{MMBtu} [\text{HHV}]) * (1,007 \text{ Btu/scf} [\text{HHV}]) * (252 \text{ MMscf/yr}) * (1 \text{ tonne}/2,204.62 \text{ lbs}) = \mathbf{13,542 \text{ tonnes CO}_2/\text{yr}}$

CH₄ Example Calculation: $(0.996 \text{ lb-mole CH}_4/\text{lb-mole FG}) * (16.04 \text{ lb CH}_4/\text{lb-mole CH}_4) * (\text{lb-mole FG}/379.6 \text{ scf FG}) * (10^6 \text{ scf/MMscf}) = 42,086 \text{ lb CH}_4/\text{MMscf}$
 $(42,086 \text{ lb CH}_4/\text{MMscf}) * (1 - (98/100)) = 842 \text{ lb CH}_4/\text{MMscf} (98\% \text{ control})$
 $(842 \text{ lb CH}_4/\text{MMscf}) * (252 \text{ MMscf/yr}) * (1 \text{ tonne}/2,204.62 \text{ lb}) = \mathbf{96.2 \text{ tonnes CH}_4/\text{yr}}$

CO₂e Example Calculation: $(13,542 \text{ tonnes CO}_2/\text{yr}) + (96.2 \text{ tonnes CH}_4/\text{yr} * 25) + (0.230 \text{ tonne N}_2\text{O}/\text{yr} * 298) = \mathbf{16,016 \text{ tonnes CO}_2\text{e}/\text{yr}}$
 $(16,016 \text{ tonnes CO}_2\text{e}/\text{yr}) * (1.1023 \text{ tons/tonne}) = \mathbf{17,654 \text{ tons CO}_2\text{e}/\text{yr}}$

Table D1-2 (Form D1 Substitute): HAP Potential Annual Emissions Summary for Significant and Insignificant Emissions Units at Tyonek Platform

Permit No.: AQ0091TVP02

Operating Scenario: 1

Control Devices: NSCR for EU IDs 8 and 9

Fuel Gas Lower Heating Value (LHV) =

906 Btu/scf

Fuel Gas Higher Heating Value (HHV) =

1,007 Btu/scf

Diesel Fuel Higher Heating Value (HHV) =

137,000 Btu/gal

Emissions Unit Tag Number	TY-C-4101A & TY-C-4101B	TY-C-4102A	TY-C-4102B	TY-G-3201A	TY-G-3201B	Gas Heater	Gas Heater	TY-G-3502A	TY-G-3502B	TY-CR-0001	TY-CR-0002	TY-C-0015	TY-P-2809A	TY-P-2809B	TY-V-0006	TY-V-0005 & TY-V-0007
Emissions Unit ID	1 and 2	3	4	8	9	10	12	20	21	24	25	28	33	34	37	38 and 39
Description / Mfg / Model	Solar Centaur T-4700 Turbines #1 and #2	Solar Taurus 60 T-7300S Turbine #3	Solar Taurus 60 T-7300S Turbine #4	Waukesha L-7042G Generator Engine #1	Waukesha L-7042G Generator Engine #4	BS&B Glycol Heater #1	BS&B Glycol Heater #3	Caterpillar D-398 Standby Generator Engine #1	Caterpillar D-398 Standby Generator Engine #2	Caterpillar C9.3 Crane Engine	John Deere 613SHF485F Crane Engine	John Deere 4039DF001 Air Compressor Engine	Caterpillar 3306 Firewater Engine #1	Caterpillar 3306 Firewater Engine #2	HP & LP Flare Pilots (IEUs) ^[1]	HP & LP Safety Flares ^[1]
Category	Combustion Turbine	Combustion Turbine	Combustion Turbine	RICE	RICE	Process Heater	Process Heater	RICE	RICE	RICE	RICE	RICE	RICE	RICE	Flare	Flare
Power	4,700 hp (ISO) (each)	7,170 hp (ISO)	7,170 hp (ISO)	810 hp	810 hp	NA	NA	795 hp	795 hp	350 hp	500 hp	80 hp	231 hp	231 hp	NA	NA
Heat Rate				7,000 Btu/hp-hr	7,000 Btu/hp-hr	NA	NA	6,918 Btu/hp-hr	6,918 Btu/hp-hr	6,733 Btu/hp-hr	7,000 Btu/hp-hr	7,278 Btu/hp-hr	7,176 Btu/hp-hr	7,176 Btu/hp-hr	NA	NA
Heat Consumption	46.3 MMBtu/hr (LHV) (each) 51.5 MMBtu/hr (HHV) (each)	61.4 MMBtu/hr (LHV) 68.2 MMBtu/hr (HHV)	61.4 MMBtu/hr (LHV) 68.2 MMBtu/hr (HHV)	5.7 MMBtu/hr (HHV)	5.7 MMBtu/hr (HHV)	11.1 MMBtu/hr (HHV)	11.1 MMBtu/hr (HHV)	5.5 MMBtu/hr (HHV)	5.5 MMBtu/hr (HHV)	2.4 MMBtu/hr (HHV)	3.5 MMBtu/hr (HHV)	0.6 MMBtu/hr (HHV)	1.7 MMBtu/hr (HHV)	1.7 MMBtu/hr (HHV)	0.125 MMBtu/hr (HHV)	583.3 and 53.3 MMBtu/hr (HHV)
Load Basis for CT EF	>80%	>80%	>80%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fuel	NG	NG	NG	NG	NG	NG	NG	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	NG	NG
Annual Hours or Throughput	805 MMscf/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	2,250 hr/yr	2,250 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	6,547 hr/yr	6,547 hr/yr	8,760 hr/yr	252.0 MMscf/yr
HAP																
1,1,2,2-Tetrachloroethane																
1,1,2-Trichloroethane																
1,3-Butadiene	1.743E-04	1.285E-04	1.285E-04							4.036E-04	5.994E-04	9.971E-05	2.122E-04	2.122E-04		
1,3-Dichloropropene																
1,4-Dichlorobenzene																
2,2,4-Trimethylpentane	1.482E-01	1.093E-01	1.093E-01													
Acetaldehyde	1.621E-02	1.196E-02	1.196E-02	6.966E-02	6.966E-02	3.586E-02	3.586E-02	1.559E-04	1.559E-04	7.916E-03	1.176E-02	1.956E-03	4.162E-03	4.162E-03		
Acrolein	2.594E-02	1.913E-03	1.913E-03	6.566E-02	6.566E-02			4.876E-05	4.876E-05	9.547E-04	1.418E-03	2.359E-04	5.019E-04	5.019E-04		
Antimony																
Arsenic	5.540E-05	4.086E-05	4.086E-05													
Benzene	4.864E-03	3.587E-03	3.587E-03	3.945E-02	3.945E-02	1.001E-04	1.001E-04	4.802E-03	4.802E-03	9.630E-03	1.430E-02	2.379E-03	5.063E-03	5.063E-03		
Beryllium	9.233E-06	6.809E-06	6.809E-06													
Cadmium	1.847E-05	1.362E-05	1.362E-05													
Carbon Tetrachloride																
Chlorobenzene																
Chloroform																
Chromium	7.571E-04	5.584E-04	5.584E-04													
Cobalt	1.477E-04	1.090E-04	1.090E-04													
Cumene																
Dibutylphthalate																
Ethylbenzene	1.297E-02	9.565E-03	9.565E-03	6.192E-04	6.192E-04	1.702E-02	1.702E-02									
Ethylene Dibromide																
Ethylene Dichloride (1,2-Dichloroethane)																
Ethylene Glycol																
Ethylidene Dichloride (1,1-Dichloroethane)																
Formaldehyde	2.878E-01	2.122E-01	2.122E-01	5.118E-01	5.118E-01	3.575E-03	3.575E-03	4.882E-04	4.882E-04	1.218E-02	1.809E-02	3.009E-03	6.403E-03	6.403E-03		
HCl																
Lead	3.139E-04	2.315E-04	2.315E-04													
Manganese	1.616E-03	1.192E-03	1.192E-03													
Mercury	2.493E-04	1.839E-04	1.839E-04	2.836E-04	2.836E-04					3.111E-06	4.620E-06	7.686E-07	1.635E-06	1.635E-06		
Methanol																
Methylene Chloride																
n-Hexane	1.390E-01	1.025E-01	1.025E-01													
Nickel	5.632E-04	4.154E-04	4.154E-04													
Phenol	1.017E-02	7.497E-03	7.497E-03													
Phosphorus	6.020E-03	4.440E-03	4.440E-03													
POM (Total)	3.390E-02	2.500E-02	2.500E-02	5.944E-03	5.944E-03	5.628E-05	5.628E-05	1.309E-03	1.309E-03	1.735E-03	2.576E-03	4.286E-04	9.120E-04	9.120E-04		
[POM] PAH (Unspecified)	8.917E-04	6.576E-04	6.576E-04	3.520E-03	3.520E-03											
[POM] 2-Methylnaphthalene	1.200E-04	8.852E-05	8.852E-05													
[POM] 3-Methylcholanthrene																
[POM] 7,12-Dimethylbenz(a)anthracene																
[POM] Acenaphthene																
[POM] Acenaphthylene																
[POM] Anthracene																
[POM] Benz(a)anthracene	1.216E-03	8.967E-04	8.967E-04													
[POM] Benzo(a)pyrene																
[POM] Benzo(b)fluoranthene																
[POM] Benzo(e)pyrene																
[POM] Benzo(g,h,i)perylene																
[POM] Benzo(k)fluoranthene																
[POM] Biphenyl	3.052E-02	2.251E-02	2.251E-02													
[POM] CDD/CDF																
[POM] Chrysene	9.233E-05	6.809E-05	6.809E-05													
[POM] Dibenz(a,h)anthracene																
[POM] Fluoranthene	4.864E-04	3.587E-04	3.587E-04													
[POM] Fluorene																
[POM] Indeno(1,2,3-cd)pyrene																
[POM] Naphthalene	5.269E-04	3.886E-04	3.886E-04	2.424E-03	2.424E-03											
[POM] Perylene																
[POM] Phenanthrene	4.617E-05	3.405E-05	3.405E-05													
[POM] Pyrene																
Propionaldehyde	7.987E-02	5.890E-02	5.890E-02													
Propylene Dichloride (1,2-Dichloropropane)																
Propylene Oxide	1.175E-02	8.668E-03	8.668E-03													
Selenium	2.770E-05	2.043E-05	2.043E-05													
Styrene																
Tetrachloroethylene																
Toluene	5.269E-02	3.886E-02	3.886E-02	1.393E-02	1.393E-02	1.621E-04	1.621E-04	1.739E-03	1.739E-03	4.221E-03	6.270E-03	1.043E-03	2.219E-03	2.219E-03		
Trichloroethylene																
Vinyl Chloride																
Vinylidene Chloride																
Xylenes(m,p,o)	2.594E-02	1.913E-02	1.913E-02	4.868E-03	4.868E-03	1.702E-02	1.702E-02	1.194E-03	1.194E-03	2.941E-03	4.369E-03	7.268E-04	1.546E-03	1.546E-03		
TOTAL	0.836	0.616	0.616	0.811	0.811	0.258	0.258	0.010	0.010	0.040	0.059	0.010	0.021	0.021	0.000	0.000

Significant Emissions Units	4.38 tons/yr	Tons/yr					
Insignificant Emissions Units	0.02 tons/yr						
Stationary Source Total	4.40 tons/yr	Turbines	Heaters	RICE (All Fuels)	Flares ^[1]	Vents ^[1]	Tanks
Maximum Single HAP	1.79 tons/yr	2.07	0.54	1.79	0.000	0.000	0.005
							Check
							4.40

Note:

[1] Gas (wet gas) produced from the Beluga/Tyonek Pool is primarily composed of methane with a lesser fraction of ethane, carbon dioxide and nitrogen, and negligible (near zero) VOC content (non-methane, non-ethane C3+ hydrocarbons). Organic HAP compounds include certain VOCs with six or more carbon atoms (C6+), and the C6+ fraction in the fluids (gas and liquid phase) produced from the Beluga/Tyonek Pool is zero or trace. These light hydrocarbons and inert gases are soluble in water and triethylene glycol. It follows that emissions from the glycol regeneration process vents (EU IDs 40 - 42) and produced water tanks are composed of GHGs (methane and carbon dioxide) with zero or near zero VOC. The treated (dehydrated) gas and any flare gas are similarly devoid of VOCs. For these reasons, VOC and HAP emissions from the flares, flare pilots, glycol regeneration process vents, and produced water tanks are zero or negligible.

Hilcorp Alaska, LLC

Operating Permit Renewal Application Amendment

Tyonek Platform

Permit No. AQ0091TVP02

Table D1-2 (Form D1 Substitute): HAP Potential Annual Emissions Summary for Significant and Insignificant Emissions Units at Tyonek Platform

Permit No.: AQ0091TVP02
Operating Scenario: 1
Control Devices: NSCR for EU IDs 8 and 9

Emissions Unit Tag Number	TY-H-2611, TY-H-2612, & TY-H-2613	---	Various	TY-H-2611	TY-H-2612	TY-H-2613	SIGNIFICANT EMISSIONS UNITS	INSIGNIFICANT EMISSIONS UNITS	STATIONARY SOURCE TOTAL
Emissions Unit ID	40 - 42	S12	---	---	---	---			
Description / Mfg / Model	Glycol Regenerator Reboiler Vents #1, #2, & #3 ^[1]	Spartan 151 Drill Rig Diesel Fuel Tanks #10 through #13 (IEUs)	Tyonek Platform Unregulated Tanks (IEUs)	Glycol Regenerator Reboiler #1 (IEU)	Glycol Regenerator Reboiler #2 (IEU)	Glycol Regenerator Reboiler #3 (IEU)			
Category	GDU Process Vent	Tank	Tank	Process Heater	Process Heater	Process Heater			
Power	NA	NA	NA	NA	NA	NA			
Heat Rate	NA	NA	NA	NA	NA	NA			
Heat Consumption	NA	NA	NA	0.275 MMBtu/hr (HHV)	0.275 MMBtu/hr (HHV)	0.275 MMBtu/hr (HHV)			
Load Basis for CT EF	NA	NA	NA	NA	NA	NA			
Fuel	NA	NA	NA	NG	NG	NG	HAP		
Annual Hours or Throughput	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr	8,760 hr/yr			
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	0.001	0.000	0.001
1,1,2-Trichloroethane	---	---	---	---	---	---	0.001	0.000	0.001
1,3-Butadiene	---	---	---	4.123E-04	4.123E-04	4.123E-04	0.068	0.001	0.070
1,3-Dichloropropene	---	---	---	---	---	---	0.001	0.000	0.001
1,4-Dichlorobenzene	---	---	---	1.417E-06	1.417E-06	1.417E-06	0.000	0.000	0.000
2,2,4-Trimethylpentane	---	5.693E-05	1.088E-04	4.577E-04	4.577E-04	4.577E-04	0.404	0.002	0.405
Acetaldehyde	---	---	---	8.884E-04	8.884E-04	8.884E-04	0.281	0.003	0.284
Acrolein	---	---	---	---	---	---	0.141	0.000	0.141
Antimony	---	---	---	---	---	---	0.000	0.000	0.000
Arsenic	---	---	---	2.362E-07	2.362E-07	2.362E-07	0.000	0.000	0.000
Benzene	---	5.708E-05	1.090E-04	2.480E-06	2.480E-06	2.480E-06	0.137	0.000	0.137
Beryllium	---	---	---	1.417E-08	1.417E-08	1.417E-08	0.000	0.000	0.000
Cadmium	---	---	---	1.299E-06	1.299E-06	1.299E-06	0.000	0.000	0.000
Carbon Tetrachloride	---	---	---	---	---	---	0.001	0.000	0.001
Chlorobenzene	---	---	---	---	---	---	0.001	0.000	0.001
Chloroform	---	---	---	---	---	---	0.001	0.000	0.001
Chromium	---	---	---	1.653E-06	1.653E-06	1.653E-06	0.002	0.000	0.002
Cobalt	---	---	---	9.919E-08	9.919E-08	9.919E-08	0.000	0.000	0.000
Cumene	---	3.435E-05	6.561E-05	---	---	---	0.000	0.000	0.000
Dibutylphthalate	---	---	---	---	---	---	0.000	0.000	0.000
Ethylbenzene	---	7.069E-05	1.353E-04	4.216E-04	4.216E-04	4.216E-04	0.067	0.001	0.069
Ethylene Dibromide	---	---	---	---	---	---	0.001	0.000	0.001
Ethylene Dichloride (1,2-Dichloroethane)	---	---	---	---	---	---	0.001	0.000	0.001
Ethylene Glycol	---	---	---	---	---	---	0.000	0.000	0.000
Ethylidene Dichloride (1,1-Dichloroethane)	---	---	---	---	---	---	0.001	0.000	0.001
Formaldehyde	---	---	---	8.857E-05	8.857E-05	8.857E-05	1.790	0.000	1.790
HCl	---	---	---	---	---	---	0.000	0.000	0.000
Lead	---	---	---	5.904E-07	5.904E-07	5.904E-07	0.001	0.000	0.001
Manganese	---	---	---	4.487E-07	4.487E-07	4.487E-07	0.004	0.000	0.004
Mercury	---	---	---	3.070E-07	3.070E-07	3.070E-07	0.001	0.000	0.001
Methanol	---	---	---	1.161E-03	1.161E-03	1.161E-03	0.246	0.003	0.250
Methylene Chloride	---	---	---	---	---	---	0.002	0.000	0.002
n-Hexane	---	7.963E-04	1.521E-03	2.126E-03	2.126E-03	2.126E-03	0.516	0.009	0.524
Nickel	---	---	---	2.480E-06	2.480E-06	2.480E-06	0.002	0.000	0.002
Phenol	---	---	---	1.289E-07	1.289E-07	1.289E-07	0.025	0.000	0.025
Phosphorus	---	---	---	---	---	---	0.015	0.000	0.015
POM (Total)	---	2.372E-06	4.622E-06	1.394E-06	1.394E-06	1.394E-06	0.105	0.000	0.105
[POM] PAH (Unspecified)	---	---	---	---	---	---	0.009	0.000	0.009
[POM] 2-Methylnaphthalene	---	---	---	2.834E-08	2.834E-08	2.834E-08	0.000	0.000	0.000
[POM] 3-Methylcholanthrene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] 7,12-Dimethylbenz(a)anthracene	---	---	---	1.889E-08	1.889E-08	1.889E-08	0.000	0.000	0.000
[POM] Acenaphthene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] Acenaphthylene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] Anthracene	---	---	---	2.834E-09	2.834E-09	2.834E-09	0.000	0.000	0.000
[POM] Benz(a)anthracene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.003	0.000	0.003
[POM] Benzo(a)pyrene	---	---	---	1.417E-09	1.417E-09	1.417E-09	0.000	0.000	0.000
[POM] Benzo(b)fluoranthene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] Benzo(e)pyrene	---	---	---	---	---	---	0.000	0.000	0.000
[POM] Benzo(g,h,i)perylene	---	---	---	1.417E-09	1.417E-09	1.417E-09	0.000	0.000	0.000
[POM] Benzo(k)fluoranthene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] Biphenyl	---	5.714E-08	1.095E-07	5.697E-07	5.697E-07	5.697E-07	0.076	0.000	0.076
[POM] CDD/CDF	---	---	---	---	---	---	0.000	0.000	0.000
[POM] Chrysene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] Dibenz(a,h)anthracene	---	---	---	1.417E-09	1.417E-09	1.417E-09	0.000	0.000	0.000
[POM] Fluoranthene	---	---	---	3.543E-09	3.543E-09	3.543E-09	0.002	0.000	0.002
[POM] Fluorene	---	---	---	3.306E-09	3.306E-09	3.306E-09	0.001	0.000	0.001
[POM] Indeno(1,2,3-cd)pyrene	---	---	---	2.126E-09	2.126E-09	2.126E-09	0.000	0.000	0.000
[POM] Naphthalene	---	2.315E-06	4.512E-06	7.203E-07	7.203E-07	7.203E-07	0.011	0.000	0.011
[POM] Perylene	---	---	---	---	---	---	0.000	0.000	0.000
[POM] Phenanthrene	---	---	---	2.008E-08	2.008E-08	2.008E-08	0.002	0.000	0.002
[POM] Pyrene	---	---	---	5.904E-09	5.904E-09	5.904E-09	0.000	0.000	0.000
Propionaldehyde	---	---	---	---	---	---	0.198	0.000	0.198
Propylene Dichloride (1,2-Dichloropropane)	---	---	---	---	---	---	0.001	0.000	0.001
Propylene Oxide	---	---	---	---	---	---	0.029	0.000	0.029
Selenium	---	---	---	2.834E-08	2.834E-08	2.834E-08	0.000	0.000	0.000
Styrene	---	---	---	3.975E-04	3.975E-04	3.975E-04	0.033	0.001	0.034
Tetrachloroethylene	---	---	---	---	---	---	0.000	0.000	0.000
Toluene	---	3.397E-04	6.488E-04	4.015E-06	4.015E-06	4.015E-06	0.178	0.001	0.179
Trichloroethylene	---	---	---	---	---	---	0.000	0.000	0.000
Vinyl Chloride	---	---	---	---	---	---	0.000	0.000	0.000
Vinylidene Chloride	---	---	---	---	---	---	0.000	0.000	0.000
Xylenes(m,p,o)	---	2.846E-04	5.442E-04	4.216E-04	4.216E-04	4.216E-04	0.121	0.002	0.124
TOTAL	0.000	0.002	0.003	0.006	0.006	0.006	4.38	0.02	4.40
Maximum Single HAP =							1.79	0.01	1.79
Significant Emissions Units	4.38 tons/yr								
Insignificant Emissions Units	0.02 tons/yr								
Stationary Source Total	4.40 tons/yr								
Maximum Single HAP	1.79 tons/yr								

Table D1-3 (Form D1 Substitute): Storage Tank Details and Emissions Summary for Tyonek Platform

Permit No.: AQ0091TVP02
Operating Scenario: 1
Control Devices: None

Storage Tank Details ¹									
Tank Identification									
EU ID	---	---	---	---	---	S12 (#10)	S12 (#11)	S12 (#12)	S12 (#13)
Tag No.	TK-107	TK-111A	TK-111B	TK-112A	TK-112B	---	---	---	---
Description	AC Generator Diesel Tank	Triethylene Glycol Tank	Dowfrost (Propylene Glycol) Tank	Diesel Storage Beam Tank	Diesel Storage Beam Tank	Spartan 151 Drill Rig Diesel Fuel Tank #10	Spartan 151 Drill Rig Diesel Fuel Tank #11	Spartan 151 Drill Rig Diesel Fuel Tank #12	Spartan 151 Drill Rig Diesel Fuel Tank #13
Type of Tank ²	HFRT	VFRT	VFRT	VFRT	VFRT	HFRT	HFRT	HFRT	HFRT
Control Device	uncontrolled	uncontrolled	uncontrolled	uncontrolled	uncontrolled	uncontrolled	uncontrolled	uncontrolled	uncontrolled
IEU Classification	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)	18 AAC 50.326(e)
Tank Contents and Temperature									
Material Stored	diesel	triethylene glycol	propylene glycol	diesel	diesel	diesel	diesel	diesel	diesel
Mixture in Emission Master Tanks ³	diesel no. 1	triethylene glycol	propylene glycol	diesel no. 1	diesel no. 1	diesel no. 1	diesel no. 1	diesel no. 1	diesel no. 1
Tank Temperature	indoors (65 °F)	ambient	ambient	ambient	ambient	ambient	ambient	ambient	ambient
Meteorological Data Location	Homer, AK	Homer, AK	Homer, AK	Homer, AK	Homer, AK	Homer, AK	Homer, AK	Homer, AK	Homer, AK
Tank Dimensions, Volume, and Throughput									
Shell Height or Length (ft)	20.0	32.0	32.0	54.7	54.7	18.0	5.0	17.0	9.0
Effective Height (ft)	2.4					14.1	3.9	13.4	7.1
Diameter (ft)	3.0	10.0	10.0	14.0	14.0	18.0	5.0	17.0	9.0
Effective Diameter (ft)	8.7					20.3	5.6	19.2	10.2
Max. Liquid Height (ft)	2.4	31.0	31.0	53.7	53.7	14.1	3.9	13.4	7.1
Tank Volume (gal)	1,050	18,900	18,900	63,000	63,000	32,943	646	28,663	3,305
Working Volume (gal)	1,050	18,213	18,213	61,838	61,838	32,943	646	28,663	3,305
Design Capacity (gal)	1,058	18,801	18,801	62,989	62,989	34,264	734	28,865	4,283
Net Throughput (gal/yr)	4,200	218,557	218,557	742,050	742,050	395,316	7,752	343,956	39,660
Turnovers per year	4.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Paint Characteristics									
Shell Color/Shade	yellow	gray/medium	gray/medium	gray/medium	gray/medium	gray/medium	gray/medium	gray/medium	gray/medium
Shell Condition	average	average	average	average	average	average	average	average	average
Roof Color/Shade		gray/medium	gray/medium	gray/medium	gray/medium				
Roof Condition		average	average	average	average				
Roof Characteristics									
Type		dome	dome	dome	dome				
Height (ft)		1.34	1.34	1.88	1.88				
Dome Roof Radius (ft)		10.0	10.0	14.0	14.0				
Slope (ft/ft) [Cone Roof]									
Breather Vent Settings									
Vacuum Setting (psig)		-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
Pressure Setting (psig)		0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Emissions Summary ³									
Potential Annual VOC Emissions									
VOC Working Losses (lb)	1.73E-01	4.30E-03	1.73E-01	8.68	8.68	4.62	0.090	4.022	0.464
VOC Breathing Losses (lb)	0.00E+00	3.45E-03	1.40E-01	7.05	7.05	3.68	0.079	3.098	0.460
Total VOC Emissions (tpy)	8.63E-05	3.88E-06	1.56E-04	7.87E-03	7.87E-03	4.15E-03	8.46E-05	3.56E-03	4.62E-04
Potential Annual HAP Emissions ⁴									
2,2,4-Trimethylpentane (tpy)				5.43E-05	5.43E-05	2.87E-05			
benzene (tpy)	3.37E-07			5.44E-05	5.44E-05	2.87E-05	5.84E-07	2.47E-05	3.15E-06
biphenyl (tpy)	5.80E-10			5.44E-08	5.44E-08	2.87E-08	5.87E-10	2.46E-08	3.20E-09
cumene (tpy)	2.13E-07			3.27E-05	3.27E-05	1.73E-05	3.52E-07	1.49E-05	1.90E-06
ethylbenzene (tpy)	4.38E-07			6.75E-05	6.75E-05	3.56E-05	6.85E-07	3.05E-05	3.95E-06
napthalene (tpy)	1.78E-08			2.25E-06	2.25E-06	1.21E-06	2.45E-08	9.43E-07	1.33E-07
n-hexane (tpy)	4.20E-06			7.59E-04	7.59E-04	4.00E-04	8.10E-06	3.44E-04	4.41E-05
toluene (tpy)	1.80E-06			3.24E-04	3.24E-04	1.71E-04	3.51E-06	1.47E-04	1.89E-05
xylenes (tpy)	1.80E-06			2.71E-04	2.71E-04	1.43E-04	2.79E-06	1.23E-04	1.59E-05
Total HAP Emissions (tpy)	9.12E-06	0.000	0.000	1.56E-03	1.56E-03	8.25E-04	1.66E-05	7.09E-04	9.12E-05

Total	Spartan 151 Drill Rig	Tyonek Platform	Stationary Source
VOC (tpy)	8.26E-03	1.60E-02	2.42E-02
2,2,4-Trimethylpentane (tpy)	5.69E-05	1.09E-04	1.66E-04
benzene (tpy)	5.71E-05	1.09E-04	1.66E-04
biphenyl (tpy)	5.71E-08	1.09E-07	1.67E-07
cumene (tpy)	3.44E-05	6.56E-05	1.00E-04
ethylbenzene (tpy)	7.07E-05	1.35E-04	2.06E-04
napthalene (tpy)	2.32E-06	4.51E-06	6.83E-06
n-hexane (tpy)	7.96E-04	1.52E-03	2.32E-03
toluene (tpy)	3.40E-04	6.49E-04	9.88E-04
xylenes (tpy)	2.85E-04	5.44E-04	8.29E-04
HAP (tpy)	1.64E-03	3.14E-03	4.78E-03

Notes:

1) Details for tanks not storing a volatile organic liquid (VOL) (TK-101A, TK-104B, TK-105A, and TK-105B) and produced water tanks (TK-101B, TK-102A, TK-102B, TK-102C, TK-102D, TK-109, and TK-110) are not provided in this table since emissions from these tanks are zero or negligible. Produced water tank vapors containing zero or negligible VOCs and HAPs are routed to a flare.

2) HFRT = Horizontal Fixed Roof Tank, VFRT = Vertical Fixed Roof Tank

3) VOC and HAP emissions estimates were generated by Mitchell Scientific's Emission Master Tanks software, version 8.4.4.22, which incorporates the calculation methods found in AP-42 Chapter 7, Section 7.1 (6/2020).

4) HAP emissions from tanks storing diesel fuel are based on the default HAP profile for diesel in Table A-1 of the *Emissions Estimation Protocol for Petroleum Refineries*, Version 3, prepared by RTI International for the US EPA, April 2015.

FORM D2

Stationary Source Emission Summary – Significant Emissions Units

Permit Number: **AQ0091TVP02**

1.	Applicable Emissions Unit IDs (list)	1, 2, 3, 4, 8, 9, 10, 12, 20, 21, 24, 25, 28, 33, 34, 37, 38, 39, 40, 41, 42, IEUs, and unregulated tanks
2.	Applicable Operating Scenario ID number	1

3. Pollutants/Emissions (Significant Emissions Units):

Pollutant Name	Pollutant Emission Status under Title V (Major / Minor)	Expected Actual Annual Emissions (after controls/limitations) (tons/year)	Potential Annual Emissions (before controls/limitations) (tons/year)	Potential Annual Emissions (after controls/limitations) (tons/year)
NO _x	Major	--	--	368
CO	Major	--	--	237
PM-10	Minor	--	--	15.3
SO ₂	Minor	--	--	55.9
VOC (includes VOC HAPs)	Minor	--	--	28.5
HAP Total	Minor (area)	--	--	4.38
CO ₂ e	N/A	--	--	160,734
<i>(List individual HAPs >0.1 tpy)</i>				
2,2,4-Trimethylpentane	Minor (area)	--	--	0.40
Acetaldehyde	Minor (area)	--	--	0.28
Acrolein	Minor (area)	--	--	0.14
Benzene	Minor (area)	--	--	0.14
Formaldehyde	Minor (area)	--	--	1.79
Methanol	Minor (area)	--	--	0.25
n-Hexane	Minor (area)	--	--	0.52
POM	Minor (area)	--	--	0.11
Propional[dehyde]	Minor (area)	--	--	0.20
Toluene	Minor (area)	--	--	0.18
Xylenes	Minor (area)	--	--	0.12

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SECTION 5 - FORM SERIES E

- Form E1** – Stationary Source-Wide Applicable Requirements
- Form E3** – Title V Condition Change Request
- Form E4** – Stationary Source-Wide Permit Shield Request

Tyonek Platform

**Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1**

HILCORP ALASKA, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)
P.O. Box 244027
Anchorage, AK 99524-4027

February 2023

FORM E1
Stationary Source-Wide Applicable Requirements

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
17.1 (20.4a in proposed TVP03 permit)	18 AAC 50.346(b)(4) [Standard Permit Condition V] [Pertinent to all insignificant emissions units not identified in any B series forms of the application.]	Insignificant Emissions Units Compliance Certification	Submit the compliance certification for insignificant emissions units based on reasonable inquiry.	Yes	Submittal of the annual Compliance Certification Reports according to the required procedures.
17.3 (20.4c in proposed TVP03 permit)	Same as Condition 17.1 [Pertinent to all insignificant emissions units not identified in any B series forms of the application.]	Insignificant Emissions Units with Actual Emissions > Significant Emissions Thresholds	Report in the Operating Report if actual emissions from any insignificant emissions unit exceed any of the significant emissions thresholds.	Yes	Reasonable inquiry.
18 (20.1 in proposed TVP03 permit)	18 AAC 50.055(a)(1) [Pertinent to all insignificant emissions units not identified in any B series forms of the application.]	Visible Emissions Standard	20% opacity averaged over any 6 consecutive minutes.	Yes	Reasonable inquiry.
19 (20.2 in proposed TVP03 permit)	18 AAC 50.055(b)(1) [Pertinent to all insignificant emissions units not identified in any B series forms of the application.]	Particulate Matter Emissions Standard	0.05 grains PM per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.	Yes	Reasonable inquiry.

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
20 (20.3 in proposed TVP03 permit)	18 AAC 50.055(c) [Pertinent to all insignificant emissions units not identified in any B series forms of the application.]	Sulfur Compound Emissions Standard	Sulfur compound emissions, expressed as SO ₂ , of 500 ppm averaged over three hours.	Yes	Reasonable inquiry.
21, 21.1	18 AAC 50.040(a)(1) 40 C.F.R. 60.7(a)(1), Subpart A	NSPS Subpart A, Notification	When triggered, notify EPA and the Department of the date that construction or reconstruction of an affected facility commenced. Notification is due no later than 30 days after the event.	Yes	When triggered, notification will be sent, and records of notification will be kept as required.
21, 21.2	18 AAC 50.040(a)(1) 40 C.F.R. 60.7(a)(3), Subpart A	NSPS Subpart A, Notification	When triggered, notify EPA and the Department of the actual date of initial startup of an affected facility. Notification is due no later than 15 days after the event.	Yes	When triggered, notification will be sent, and records of notification will be kept as required.

FORM E1

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Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
21, 21.3	18 AAC 50.040(a)(1) 40 C.F.R. 60.7(a)(4), Subpart A	NSPS Subpart A, Notification	When triggered, notify EPA and the Department of any physical or operational change to an existing facility that results in an increase in emissions of an air pollutant to which an NSPS standard applies (except as exempted). Notification is due 60 days or as soon as practicable before the change is commenced.	Yes	When triggered, notification will be sent, and records of notification will be kept as required.
21, 21.4	18 AAC 50.040(a)(1) 40 C.F.R. 60.15(d), Subpart A	NSPS Subpart A, Notification	When triggered, notify EPA and the Department of any proposed replacement of the components of an existing facility that results in reconstruction of the facility, thus making it an NSPS-affected facility. Notification is due 60 days or as soon as practicable before construction of the replacements is commenced.	Yes	When triggered, notification will be sent, and records of notification will be kept as required.

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Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
33	18 AAC 50.345(e)	Standard Permit Term	Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.	N/A	None required. Advisory condition.
34	18 AAC 50.345(f)	Standard Permit Term	The permit may be modified, reopened, revoked and reissued, or terminated for cause.	N/A	None required. Advisory condition.
35	18 AAC 50.345(g)	Standard Permit Term	The permit does not convey any property rights of any sort, nor any exclusive privilege.	N/A	None required. Advisory condition.
36	18 AAC 50.400; 18 AAC 50.403	Administration Fees	Pay all assessed permit administration fees.	Yes	Fees are paid on time.
37, 38	18 AAC 50.410; 18 AAC 50.346(b)(1) [Standard Permit Condition I]	Emission Fees	Emissions fees must be paid based on assessable PTE or projected actual annual emissions. If Hilcorp wishes to pay fees based on actual emissions, emissions estimates must be submitted to the Department by March 31.	Yes	Fees are paid on time based on estimated actual annual emissions.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
40	18 AAC 50.045(a)	Dilution of Emissions	Do not dilute emissions to comply with the permit.	Yes	Annual Compliance Certification Reports. Emissions are not diluted or concealed.
41	18 AAC 50.045(d); 18 AAC 50.346(c) [Standard Permit Condition X]	Reasonable Precautions to Prevent Fugitive Dust	Take reasonable precautions to prevent particulate matter from being emitted.	Yes	Annual Compliance Certification Reports. No active complaints.
41.1, 41.2	Same as Condition 41	Reasonable Precautions to Prevent Fugitive Dust Recordkeeping and Reporting	Keep records of complaints, additional precautions taken to address complaints or potential problems identified by the Department and to prevent future dust problems. Report according to Condition 43.	Yes	Recordkeeping and reporting as required by this condition.
42	18 AAC 50.055(g)	Stack Injection	Do not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions.	Yes	Annual Compliance Certification Reports. Unauthorized materials are not released.

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Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
43, 17.2	18 AAC 50.110; 18 AAC 50.346(a) [Standard Permit Condition II] 18 AAC 50.346(b)(4) [Standard Permit Condition V]	Air Pollution Prohibited	Do not permit any emission that is injurious to human health or welfare, animal or plant life, or property, or that would unreasonably interfere with enjoyment of life or property.	Yes	Monitoring, recordkeeping and reporting as required by Conditions 43.1 through 43.5. No active complaints.
43.1b	Same as Condition 43	Air Pollution Prohibited Monitoring/ Investigation	As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, investigate the complaint to identify emissions that may have caused or are causing a violation of Condition 43.	Yes	Monitoring (investigation) is completed when required. No active complaints.
43.2	Same as Condition 43	Air Pollution Prohibited Monitoring/ Actions	Initiate and complete corrective action necessary to eliminate any identified violation of Condition 43 caused by emissions from the stationary source as soon as practicable	Yes	Monitoring (corrective action) is completed when required. No active complaints.
43.3	Same as Condition 43	Air Pollution Prohibited Recordkeeping	Keep records of emissions complaints, a summary of any investigation, and corrective actions.	Yes	Recordkeeping as required by this condition. No active complaints.

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Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
43.1a, 43.4, 43.5	Same as Condition 43	Air Pollution Prohibited Reporting	Report according to Condition 64 if emissions present a potential threat to human health or safety. In each Operating Report, include a brief summary of complaints received, corrective actions and the timing of such actions. Notify the Department of a complaint that is attributable to stationary source emissions within 24 hours after receiving the complaint, unless corrective action has been initiated within 24 hours of receiving the complaint.	Yes	Reporting, including documentation of complaints in Operating Reports, as required by this condition. No active complaints.
44	18 AAC 50.235(a)	Emissions in excess of a Technology-Based Emission Standard	Take all reasonable steps to minimize emissions when an unavoidable emergency, malfunction or non-routine repair causes emissions in excess of a technology-based emission standard.	Yes	Monitoring, recordkeeping, and reporting as required by Condition 64.

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Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
45 (42 in proposed TVP03 permit)	18 AAC 50.040(b)(1) & (b)(2)(F) 40 C.F.R. 61, Subparts A & M, & Appendix A	Asbestos NESHAP	Comply with applicable asbestos NESHAP requirements in 40 C.F.R. 61 Subpart M (§61.145 and §61.150) and corresponding general provisions of 40 C.F.R. 61 Subpart A and Appendix A.	Yes	Records are kept of any demolition or renovation of equipment that contains asbestos and of the disposal of any asbestos. Work practices are in place and used when necessary. When triggered, notification is sent, and records of notification are kept.
46 (43.1 in proposed TVP03 permit)	18 AAC 50.040(d) 40 C.F.R. 82, Subpart F	Protection of Stratospheric Ozone - Refrigerant Recycling and Disposal	Comply with applicable provisions of the protection of stratospheric ozone rules in 40 C.F.R. 82, Subpart F- recycling and emission reduction of refrigerants. (40 C.F.R. 82.154, §82.156, §82.161, and §82.166)	Yes	Recordkeeping as required by this condition and contractor certification and training.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
47, 47.1 (44 in proposed TVP03 permit)	18 AAC 50.040(c)(1); 18 AAC 50.040(j) 40 C.F.R. 63.1(b), 63.1(c)(5), 63.5(b)(4), 63.6(c)(1) & 63.9(b)(1), Subpart A	NESHAPs Applicability Determinations	Determine NESHAP applicability. Keep records of non-applicability onsite for 5 years after the determination. If the stationary source becomes affected by an applicable subpart of 40 C.F.R. 63, notify the Department and the Administrator. Comply with such standard by the compliance date established by the Administrator in the applicable subpart.	Yes	Records of applicability determinations performed as required. When triggered, notification is sent, and records of notification are kept.
48 (48.1 - 48.3) (43.2 in proposed TVP03 permit)	18 AAC 50.040(d) 40 C.F.R. 82.174(b) - (d), Subpart G	Protection of Stratospheric Ozone Halon (Significant New Alternatives Policy Program)	Comply with applicable prohibitions found in 40 C.F.R. 82, Subpart G – Significant New Alternatives Policy Program (Halon).	Yes	Recordkeeping as required by this condition and contractor certification and training.
49 (49.1 - 49.5) (43.3 in proposed TVP03 permit)	18 AAC 50.040(d) 40 C.F.R. 82.270(b) - (f), Subpart H	Protection of Stratospheric Ozone Halon Emissions Reduction	Comply with applicable prohibitions found in 40 C.F.R. 82, Subpart H – Halon Emissions Reduction.	Yes	Recordkeeping as required by this condition and contractor certification and training.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
50	18 AAC 50.065	Open Burning Requirements	Do not conduct open burning at the stationary source.	Yes	Open burning is not conducted at this stationary source.
51	18 AAC 50.220(a); 18 AAC 50.345(k)	Source Testing	Conduct source tests as requested by the Department.	Yes	Source tests are conducted upon request.
52, 52.1	18 AAC 50.220(b)	Source Testing Operating Conditions	Conduct source testing at points that characterize actual discharge into ambient air.	Yes	When source testing is triggered, tests are completed as required by this condition.
52, 52.2	18 AAC 50.220(b)	Source Testing Operating Conditions	Conduct source testing at the maximum burn rate or operating capacity of the emissions unit or another rate determined by the Department.	Yes	When source testing is triggered, tests are completed as required by this condition.
53 (53.1, 53.2, 53.3)	18 AAC 50.220(c)(1)(A), (B) & (C) 40 C.F.R. 60 40 C.F.R. 61 40 C.F.R. 63	Source Testing Reference Test Methods	Conduct source testing in accordance with reference test methods in 40 C.F.R. 60, 61, and 63.	Yes	When source testing is triggered, tests are completed as required by these conditions.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
53.4	18 AAC 50.220(c)(1)(D)	Source Testing Reference Test Methods	Conduct source testing for visibility in accordance with procedures in Reference Method 9.	Yes	When source testing is triggered, tests are completed as required by this condition.
53.5	18 AAC 50.220(c)(1)(E) 40 C.F.R. 60, Appendix A	Source Testing Reference Test Methods	Conduct source testing for emissions of total PM, sulfur compounds, nitrogen compounds, CO, Pb, VOCs, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases in accordance with 40 C.F.R. 60, Appendix A.	Yes	When source testing is triggered, tests are completed as required by this condition.
53.6	18 AAC 50.220(c)(1)(F) 40 C.F.R. 51, Appendix M	Source Testing Reference Test Methods	Conduct PM-10 source testing in accordance with 40 C.F.R. 51, Appendix M, Methods 201 or 201A and 202.	Yes	When source testing is triggered, tests are completed as required by this condition.
53.7	18 AAC 50.220(c)(2) 40 C.F.R. 63, Appendix A, Method 301	Source Testing Reference Test Methods	Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63, Appendix A, Method 301.	Yes	When use of alternative methods is intended for source testing, approval from the Department is obtained.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
54	18 AAC 50.220(c)(3)	Source Testing Excess Air Requirements	Include only the volume of gases formed from combustion of fuel, plus excess air volume normal for the specific emissions unit type corrected to standard conditions when determining the standard exhaust gas volume during source testing.	Yes	When source testing is triggered, test results are evaluated as required by this condition.
56	18 AAC 50.345(l)	Source Testing Test Deadline Extension	A source testing deadline may be extended if approved in writing by the Department's appropriate division director or designee.	Yes	When source testing is triggered test, deadline extensions may be requested. Records of source test deadline extensions granted by the Department are maintained on file.
57, 55	18 AAC 50.345(a); 18 AAC 50.345(m)	Source Testing Test Plans	Submit a test plan to the Department within 60 days after a requested source test and at least 30 days prior to scheduled testing. This requirement does not apply when the exhaust is observed for visible emissions under Method 9.	Yes	When source testing is triggered, test plans are submitted as required by this condition.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
58, 55	18 AAC 50.345(a); 18 AAC 50.345(n)	Source Testing Test Notification	Notify the Department in writing at least 10 days prior to conducting source tests. This requirement does not apply when the exhaust is observed for visible emissions under Method 9.	Yes	When source testing is triggered, test notifications are submitted as required by this condition.
59, 55	18 AAC 50.345(a); 18 AAC 50.345(o)	Source Testing Test Reports	Certify and submit two copies of source test results to the Department within 60 days after completing a source test. Provide preliminary results in a shorter period of time if requested by the Department in writing. This requirement does not apply when the exhaust is observed for visible emissions under Method 9.	Yes	When source testing is triggered, test reports are submitted as required by this condition.
New (67 in proposed TVP03 permit)	18 AAC 50.220(f)	Source Testing Particulate Matter Calculations	Determine the 3-hour average PM concentration using the average of three one-hour source test runs.	Yes	When PM source testing is triggered, tests are completed as required by this condition.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
60 (60.1, 60.2)	40 C.F.R. 60.7(f), Subpart A; 40 C.F.R. 71.6(a)(3)(ii)(B)	Recordkeeping Requirements	Keep records of all reports, certifications, and monitoring required by the Title V permit for at least 5 years after date of collection.	Yes	Recordkeeping as required by this condition.
61	18 AAC 50.205; 18 AAC 50.345(j); 18 AAC 50.346(b)(10) [Standard Permit Condition XVII]	Certification of Submittals	Any permit application, report, affirmation, or compliance certification submitted to the Department and required by the permit must be certified by including the signature of a responsible official.	Yes	Records documenting that submitted documents are certified as required.
62	18 AAC 50.346(b)(10) [Standard Permit Condition XVII]	Submittal of Reports	Unless otherwise directed by the Department or other conditions of the permit, send the original and one copy of reports, compliance certifications, and other documents required by this permit to the Department.	Yes	Records documenting submittal of documents as required by this condition.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
63	18 AAC 50.200; 18 AAC 50.345(i)	Information Requests	Upon request, furnish the Department with any information needed to determine whether cause exists to modify, revoke and reissue, or terminate the Title V permit or to determine compliance with the Title V permit. Upon request, furnish the Department with copies of records required to be kept by the permit.	Yes	Records documenting submittal of information request responses as required by this condition.
64 (64.1, 64.2, 64.3)	18 AAC 50.235(a)(2); 18 AAC 50.240(c); 18 AAC 50.346(b)(2) & (3) [Standard Permit Conditions III and IV]	Excess Emissions and Permit Deviation Reports	Report all emissions or operations that exceed or deviate from the requirements of the Title V permit according to the deadlines given in Condition 64.1 for various forms of excess emissions and permit deviations. Report using the form provided by the Department. Provide additional written details if requested by the Department.	Yes	Excess Emissions and Permit Deviation Reports are submitted in accordance with the requirements of these conditions and copies are included with the Operating Reports. No outstanding or unreported excess emissions or permit deviations at the time of submittal of this permit renewal application.

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Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
65 (65.1 - 65.4)	18 AAC 50.240(c); 18 AAC 50.346(b)(6) [Standard Permit Condition VII]	Operating Reports	Submit quarterly to the Department one original and one copy of an Operating Report. Include all information required to be in the Operating Reports by other conditions of the Title V permit. Address excess emissions (EE) and permit deviations (PD) that occurred during the reporting period. Address additional testing or monitoring that has been triggered during the reporting period.	Yes	Records of quarterly Operating Reports submitted to the Department in accordance with Conditions 65.1 through 65.4.
66 (66.1 - 66.3)	18 AAC 50.205; 18 AAC 50.345(j); 40 C.F.R. 71.6(c)(5)	Annual Compliance Certification	By March 31, submit one original and one copy of an annual compliance certification report to the Department. Certify the stationary source compliance status over the preceding calendar year. Submit one copy to EPA.	Yes	Records of annual Compliance Certification Reports submitted to the Department and EPA in accordance with Conditions 66.1 through 66.3.

FORM E1

Stationary Source-Wide Applicable Requirements

Permit Number: **AQ0091TVP02****Stationary Source-Wide Applicable Requirements**

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
67 (67.1 and 67.2)	40 C.F.R. 71.6(c)(6)	NSPS and NESHAP Reports	Include a copy of any NSPS and NESHAPs reports submitted to EPA during the reporting period with the Operating Report. Upon request, provide the Department copies of waivers and other documents provided to the Permittee by EPA.	Yes	Records of NSPS and NESHAP reports provided to the Department with the quarterly Operating Reports as applicable.
New (Condition 76 in the proposed TVP03 permit) (76.1 – 76.5)	18 AAC 50.346(b)(8) [Standard Permit Condition XV]; 18 AAC 50.200; 40 C.F.R. 51.15, §51.30(a)(1) & (b)(1), Appendix A to Subpart A of 40 C.F.R. 51	Emission Inventory Reporting	Submit to the Department annual or triennial reports of actual emissions of criteria pollutants by emissions unit as required based on the stationary source potential emissions for the previous calendar year. Include all required data elements for each emissions unit.	Yes	Records of Emission Inventory reports submitted to the Department with data as required. Triennial Emission Inventory Reports are currently required (effective in 2021 for the calendar year 2020 report).
68	40 C.F.R. 71.6(a)(8)	Emissions Trading	No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.	N/A	None required. Advisory condition.

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Stationary Source-Wide Applicable Requirements

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
69 (69.1 - 69.4)	40 C.F.R. 71.6(a)(12)	Off Permit Changes	Changes to the stationary source that are not addressed or prohibited by this permit may be made without permit revision if contemporaneous written notice is provided to EPA and the Department of each such change as specified in Conditions 69.1 and 69.2. Keep a record describing changes made that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from the changes.	Yes	Records of required notification submittal as required by these conditions. Recordkeeping as required by these conditions.

FORM E1
Stationary Source-Wide Applicable Requirements

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
70 (70.1 - 70.3)	40 C.F.R. 71.6(a)(13)	Operational Flexibility	Changes to the permitted stationary source may be made without requiring a permit revision if the changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under this permit. Notify EPA and the Department in writing no less than 7 days in advance of the proposed change and include the information required by Condition 70.2.	Yes	Records of required notification submittal as required by these conditions.
71	40 C.F.R. 71.5(a)(1)(iii); 40 C.F.R. 71.7(b) & (c)(1)(ii)	Permit Renewal	Submit an application to renew Title V permit between 6 and 18 months before expiration of current Title V permit. The renewal application must be deemed complete before the permit expiration date.	Yes	Records of required permit renewal application submittal as required by this condition.

FORM E1
Stationary Source-Wide Applicable Requirements

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
72, 73, 73.1, 73.2 (Replaced by new Condition 77 in proposed TVP03 permit. [77.1 – 77.4])	18 AAC 50.346(b)(7) [Standard Permit Condition XIV]; 40 C.F.R. 71.10(d)(1)	Permit Applications and Submittals	Submit applications to renew or modify the operating permit to the Department and EPA.	Yes	Records of permit renewal and modification application submittals to the Department and EPA as required under these conditions.
74 (74.1 and 74.2)	18 AAC 50.345(b)	General Compliance Requirements	Compliance with permit terms and conditions is considered to be compliance with those requirements that are included and specifically identified in the permit or determined in writing in the permit to be inapplicable.	N/A	None required. Advisory condition.
75	18 AAC 50.345(c)	General Compliance Requirements	Comply with each permit term and condition.	Yes	Compliance status is based on the status of compliance with all other permit conditions.
76	18 AAC 50.345(d)	General Compliance Requirements	It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.	N/A	None required. Advisory condition.

FORM E1
Stationary Source-Wide Applicable Requirements

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Applicable Requirements

Condition Number	Applicable Requirement Citation ¹	Parameter/ Pollutant	Limit/Standard/ Requirement	Currently in Compliance?	Monitoring, Recordkeeping and Reporting Methods Used to Demonstrate Compliance
77 (77.1 – 77.4)	18 AAC 50.345(h)	General Compliance Requirements	Allow the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator, to take the actions outlined in this condition.	Yes	Inspections are allowed as required by this condition.
78 (83.1 in the proposed TVP03 permit)	40 C.F.R. 71.5(c)(8)(iii)(A)	Compliance Schedule	Continue to comply with applicable requirements.	Yes	Compliance status is based on the status of compliance with all other permit conditions.
New (86 in the proposed TVP03 permit)	40 C.F.R. 71.5(c)(8)(iii)(B)	Compliance Schedule	Comply with applicable requirements that become effective during the permit term on a timely basis.	Yes	Monitoring, recordkeeping, and reporting as required by any applicable requirements that become effective during the permit term.

FORM E3

Title V Condition Change Request

Permit Number: **AQ0091TVP02 Rev. 1**

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
General Permit-Wide Edits	Revise	In addition to the condition-specific edits documented below, the attached redline/strikeout markup of the permit and Statement of Basis includes the following edits we have made throughout the document. These edits are intended to make the permit and Statement of Basis consistent with the approach used by the Department in more recently issued Title V permits: - Change “condition” to “Condition” (capitalize) when referring to a specific condition number. - Change “federal” to “Federal” (capitalize), but do not change “federally” to “Federally.” - Change “federally approved” to “federally-approved.” - Change “state” to “State” (capitalize) - Change “Administrative approval” to “administrative approval” (remove capitalization) - Remove the dates from most citations. An exception is when citing a Title I permit. - Change “emission unit” to “emissions unit” to match the term used in regulation.	
Cover Page	Revise	In the paragraph that identifies citations listed in the permit, the Department typically uses the phrase "within the effective version of 18 AAC 50 at permit issuance." We ask that the Department instead use the phrase "within 18 AAC 50 dated <DATE, Register no.>." This eliminates the need for the reader to research what version of 18 AAC 50 was in effect at the time of permit issuance and provides the specific applicable version of 18 AAC 50 that applies to the permit.	See permit markup item 1)
Cover Page	Revise	Permit AQ0091MSS01 Rev. 1 has been rescinded by permit AQ0091MSS03. We ask that the Department incorporate the appropriate terms and conditions of permit AQ0091MSS03 Rev. 1 (or Rev. 2 if it is issued prior to issuance of permit AQ0091TVP03) and permit AQ0091MSS04 into the renewed Tyonek Title V permit and update the permit citations accordingly.	See permit markup item 2)

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Title V Condition Change Request

Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Cover Page	Revise	Make general updates associated with a permit renewal using information found in the ADEC Title V permit template.	See permit markup item 3)
List of Abbreviations Used in Permit	Revise	General updates associated with a permit renewal using information found in recent ADEC Title V permit template.	See permit markup item 4)
Section 1	Revise	Update this section to match information provided in Form A1.	See permit markup item 5)
Citations at the end of Section 1	Revise	Typographical correction	See permit markup item 6)
Section 2 Introductory paragraph	Revise	Insert a reference to new Table B, which we propose be added to Section 2 to document the emissions unit inventory of the Spartan 151 drill rig, which is authorized to operate on the Tyonek Platform by Minor Permit AQ0091MSS04.	See permit markup item 7)
Section 2 (Table A – Emissions Unit Inventory)	Revise	Make general updates to Table A to match the emissions unit information provided in Form B of the application.	See permit markup item 8)
Section 2 (Table A – Emissions Unit Inventory)	Revise	Remove "boilers" from the second heading. There are no boilers (as defined by NESHAP Subpart JJJJJ) at the stationary source.	See permit markup item 9)
Section 2 (Table A – Emissions Unit Inventory)	Remove	EU ID 11 has been removed from service. Remove all references to this unit throughout the permit and Statement of Basis as shown in the markup of the permit/ Statement of Basis document.	See permit markup item 10)
Section 2 (Table A – Emissions Unit Inventory)	Revise	EU IDs 24 and 25 have been replaced. Update the engine information for EU IDs 24 and 25 to match that provided in Form B of the application.	See permit markup item 11)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Section 2 (Table A – Emissions Unit Inventory)	Remove	We propose replacing Note (1) with information provided within the table to document where MMBtu/hr ratings are based on HHV and where they are based on LHV. Delete Note (2), which is no longer necessary with the passing of another generation of the operating permit. Retain and revise Note (3) (which will become Note (1)) to continue documenting why EU IDs 13 - 15 are not carried forward to the operating permit from the relevant minor source permit.	See permit markup item 12)
Section 2 Citations following Table A	Revise	Remove the citation to 40 CFR 51.166(b). It is unnecessary.	See permit markup item 13)
Section 2 (Table B [New] – Spartan 151 Drill Rig Emissions Unit Inventory)	Add	Insert new Table B to display the emissions unit inventory of the Spartan 151 drill rig. These units have applicable requirements that have been carried forward from Minor Permit AQ0091MSS04 into the proposed TVP03 permit included with this application. We suggest using the presentation of Table B in the Granite Point Platform Operating Permit AQ0066TVP04 as a "go-by" for the Tyonek Platform operating permit.	See permit markup item 14)
1 through 5	Revise	Update Conditions 1 through 5 to generally match Condition 1 of Standard Permit Condition (SPC) VIII and Conditions 1 through 5 of SPC IX as revised July 22, 2020. Differences between our proposed version of these conditions compared to the corresponding conditions in SPC IX are primarily stationary source-specific references to new permit Table C, which provides the operating time thresholds above which the liquid fuel fired emissions units subject to this standard are no longer considered IEUs and removal of the option to use the "smoke/no-smoke" method to assess compliance with the VE standard (because we are not interested in using that option). In addition, where our existing permit language has the same meaning as the language of the SPC, we may not have changed our permit language to exactly match the SPC.	See permit markup item 15)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
1.2, 1.3	Revise	Condense permit Condition 1.2 and former Condition 1.3 since all of the listed emissions units typically operate at levels below the insignificant emissions unit thresholds. Added reference to new Table C, which identifies the annual operating hours that cause each individual unit to be considered significant emissions units. This provides the Permittee with a value to monitor against to ensure visible emissions monitoring is completed when required.	See permit markup item 16)
1.4, 1.5 [New]	Revise	Separate the flare pilots emissions unit (EU ID 37) from the flare emissions units (EU IDs 38 and 39) and make it subject to the SIP standard MR&R that applies to insignificant emissions units, thereby creating new Conditions 1.4 and 1.5. The flare pilots are not flares, so should not be subject to the visible emissions MR&R found in permit Condition 5. In addition, EU ID 37 is an insignificant emissions unit based on size (18 AAC 50.326(g)(5)) and potential emissions (18 AAC 50.326(e)). It also has no emissions unit-specific limits or other requirements.	See permit markup item 17)
Table C [New] (Significant Emissions Units Thresholds)	Revise	Insert new Table C and link to permit Condition 1.2 to provide a tool for monitoring when a visible emissions observation is triggered for listed emissions units, which tend to have limited operation. This will ensure monitoring is completed within the required time frame. ADEC has used this approach for other Title V permits. It is easier to determine the trigger for conducting RM 9 monitoring using operating time than to use the IEU emissions thresholds that were stated in the Tyonek TVP02 permit.	See permit markup item 18)
2, 3, 4, 5	Revise	Update existing Conditions 2 through 5 to generally match Conditions 2 through 5 of Standard Permit Condition IX as revised July 22, 2020 without including provisions for using the "smoke/no-smoke" plan. Hilcorp does not intend to use the smoke/no-smoke plan to demonstrate compliance with the visible emissions standard. Where our existing permit language has the same meaning as the language of the SPC, we may not have changed our permit language to exactly match the SPC.	See permit markup item 19)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Heading that precedes Condition 2	Revise	Change "Emission Unit" to "Fuel-Burning Equipment" because the monitoring, recordkeeping, and reporting (MR&R) described in Conditions 2 through 5 applies specifically to "fuel-burning equipment." Nonroad engines, which are liquid fuel-fired emissions units at the stationary source, are not "fuel-burning equipment" as defined in 18 AAC 50.990(39). As such, they are not subject to the visible emissions standard and are, therefore, also not subject to the MR&R found in Conditions 2 through 4.	See permit markup item 20)
4.1 [New]	Add, Revise	We propose inserting Condition 4.1 of Standard Permit Condition IX (as revised July 22, 2020) into the TYK operating permit as new Condition 4.1. However, we added "if applicable" to the condition because the reporting required by this condition is only relevant if there are any emissions units at the source that have been subject to ongoing periodic Method 9 observations during the term of a previous permit. Otherwise, there should be no need to include the required information in an operating report.	See permit markup item 21)
Heading that precedes Condition 5	Revise	Remove EU ID 37 from this heading. The flare pilots (EU ID 37) are not flares and should not be subject to the visible emissions MR&R that applies to flares.	See permit markup item 22)
5.7 [New]	Add, Revise	Condition 6.4 of the proposed TVP03 permit, as updated to incorporate the provisions of Condition 6 of Standard Permit Condition IX as revised July 22, 2020, states that for flares subject to the particulate matter standard, the Permittee shall comply with Condition 6 of the operating permit. Therefore, new Condition 5.7 of the TYK operating permit should instruct the Permittee to certify compliance with both the visible emissions standard and the particulate matter standard based on reasonable inquiry if no VE observations are completed during the period covered by the compliance certification report. Therefore, our proposed Condition 5,7 differs from Condition 5.7 of SPC IX.	See permit markup item 23)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
6 through 8 (to become Conditions 6 through 9)	Revise	Update existing Conditions 6 through 8 and add a new Condition 8 to generally match Condition 2 of Standard Permit Condition VIII and Conditions 6 through 9 of Standard Permit Condition IX as revised July 22, 2020. Where our existing permit language has the same meaning as the language of the SPC, we may not have changed our permit language to exactly match the SPC.	See permit markup item 24)
6.4, 6.5 [New]	Revise	Separate the flare pilots emissions unit (EU ID 37) from the flare emissions units (EU IDs 38 and 39) and make it subject to the SIP standard MR&R that applies to insignificant emissions units, thereby creating new Conditions 6.4 and 6.5. The flare pilots are not flares, so should not be subject to the visible emissions/ particulate matter MR&R found in permit Condition 5. In addition, EU ID 37 is an insignificant emissions unit based on size (18 AAC 50.326(g)(5)) and potential emissions (18 AAC 50.326(e)). It also has no emissions unit-specific limits or other requirements.	See permit markup item 25)
Condition 8 [New]	Add, Revise	We do not propose adding Condition 8.1 of Standard Permit Condition IX to this condition because all stack diameters of liquid fuel fired fuel burning equipment at TYK have been reported to the Department.	See permit markup item 26)
Footnote 3 (Footnote 6 in the proposed TVP03 permit)	Revise	Update the citation date or delete the phrase “effective 7/1/07” entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.	See permit markup item 27)
Footnote 4 (Footnote 7 in the proposed TVP03 permit)	Revise	Edit this footnote to add a sentence to clarify that an exceedance of the liquid fuel sulfur content limit does not necessarily mean that the SIP sulfur compound standard has been exceeded.	See permit markup item 28)
9.3	Revise	Replace Condition 9.3 with the corresponding provisions of Standard Permit Condition XI that are not addressed under Conditions 13.2 through 13.5 of the TVP02 permit (Conditions 16.2 through 16.5 of the proposed TVP03 permit). The inserted conditions spell out when and how to determine if the fuel combusted causes sulfur compound emissions to exceed the standard.	See permit markup item 29)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
2 nd citation following Condition 9.3	Revise	Correct typographical error.	See permit markup item 30)
Footnote 5 (Footnote 8 in the proposed TVP03 permit)	Revise	Update the citation date or delete the phrase "effective 7/1/07" entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted. Also, while the definition of "natural gas" is the same in 40 CFR 60.41b and 40 CFR 60.41c, we suggest referring to 40 CFR 60.41b in this footnote to be consistent with the reference to 40 CFR 60.41b in the previous footnote that provides the definition for "oil".	See permit markup item 31)
Footnote 6 (Footnote 9 in the proposed TVP03 permit)	Revise	Edit Footnote 6 (Footnote 9 in the proposed permit) to include a brief note on when excess emissions reporting required under Condition 9.6 could be applicable.	See permit markup item 32)
9.5	Revise	Correct typographical error.	See permit markup item 33)
2 nd citation following Condition 9.6	Revise	Correct typographical error.	See permit markup item 34)
Header preceding Condition 10, Footnote 10 [New]	Revise header, Add Footnote 10	Update to reflect the language used by the Department in other Title V permits, including the addition of new Footnote 10.	See permit markup item 35)
Citation following Condition 10	Revise	Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.	See permit markup item 36)
2 nd citation following Condition 10.3	Revise	Correct typographical error.	See permit markup item 37)

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Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Citation following Condition 11	Revise	Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.	See permit markup item 38)
13 [New]	Add	Add this new condition to carry forward the provisions of Minor Permit AQ0091MSS04, Condition 4 that apply to the Spartan 151 Drill Rig when operating at the Tyonek Platform.	See permit markup item 39)
14 [New]	Add	Add this new condition to carry forward the provisions of Minor Permit AQ0091MSS04, Condition 5 that apply to the Spartan 151 Drill Rig when operating at the Tyonek Platform.	See permit markup item 40)
12.1 (equation)	Revise	Update to match the equation provided in our 12/20/2022 application to revise Minor Permit AQ0091MSS03, Rev 1.	See permit markup item 41)
12.3, 12.4	Revise	Former Condition 12.4 appears in the minor permit before former Condition 12.3; therefore, we ask that the Department change the condition order in the Title V permit to be consistent with the minor permit. In addition, this will result in the monitoring conditions being grouped together and the recordkeeping conditions being grouped together.	See permit markup item 42)
12.6a	Revise	Revise to match Condition 9.7a and Table 2 from Minor Permit AQ0091MSS03, Rev. 1, and change the maximum NOx emission rate for EU ID 25 from 1.48 lb/hr to 3.9 lb/hr as documented on page D-2 of our 12/20/2022 application to revise Minor Permit AQ0091MSS03, Rev 1.	See permit markup item 43)
12.6b	Revise	Revise as shown to clarify the reporting requirement.	See permit markup item 44)
12.7	Revise	Revise as shown to clarify the reporting requirement.	See permit markup item 45)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
1 st citation following Condition 12.8	Revise	Update the citation to refer to Minor Permit AQ0091MSS03, Revision 2, which we anticipate will be issued in response to our 12/20/2022 application to revise Minor Permit AQ0091MSS03, Revision 1. Permit AQ0091MSS03 replaced Minor Permit AQ0091MSS01.	See permit markup item 46)
3 rd citation following Condition 12.8	Revise	Correct typographical error.	See permit markup item 47)
13	Revise	List the specific emissions units that are subject to the liquid fuel 0.25 wt% sulfur content limit to distinguish the liquid fuel sulfur content limit in this condition from the ULSD fuel sulfur content limit that applies to the Spartan 151 drill rig emissions units. Also, correct the units associated with the natural gas limit from "ppm" to "ppmv". See Condition 10 of permit no. AQ0091MSS03.	See permit markup item 48)
13.1	Revise	Remove the year designations from the approved analytical methods shown in this condition. The corresponding condition in Minor Permit AQ0091MSS03, Rev. 1 (Condition 10.2) does not include the year designations. This is appropriate because the methods are occasionally updated, and labs typically update their processes to match the latest version of the methods. Removing the year designations means that there is no question as to whether or not using an updated version of the method to conduct the fuel analyses is acceptable.	See permit markup item 49)
Footnote 7 (Footnote 11 in the proposed TVP03 permit)	Remove	Delete this footnote. The error mentioned in the note was corrected upon issuance of Minor Permit AQ0091MSS03, so the note is no longer relevant.	See permit markup item 50)
13.2, 13.3	Revise	Update the permit condition language to more closely reflect the language found in Standard Permit Condition XI. Insert "received" as noted in the permit markup to add clarity to the conditions/ requirement.	See permit markup item 51)

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13.5	Revise	Revise as shown to clarify the reporting requirement.	See permit markup item 52)
1 st citation following Condition 13.6	Revise	Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.	See permit markup item 53)
3 rd citation following Condition 13.6	Revise	Correct typographical error.	See permit markup item 54)
14a, 14b, 14c	Revise	Add clarity by revising the language to change "per 12-month period" to "per rolling 12-month period" in the limit description for EU IDs 1 and 2 and EU IDs 38 and 39 to match the limit description for EU IDs 10 and 12. Also, delete the reference to EU ID 11, which is no longer in service.	See permit markup item 55)
Footnote 8 (Footnote 12 in the proposed TVP03 permit)	Remove	Delete this footnote. The error mentioned in the note has been corrected in Minor Permit AQ0091MSS03, Revision 1, so the note is no longer relevant.	See permit markup item 56)
14.1, 14.2, 14.3	Revise	Reformat and reorganize these conditions to add clarity to the permit. Also, update the language to match the language of Minor Permit AQ0091MSS03, Rev. 1, Conditions 11.2 and 11.3.	See permit markup item 57)
1 st citation following Condition 14.3	Revise	Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.	See permit markup item 58)
3 rd citation following Condition 14.3	Revise	Correct typographical error.	See permit markup item 59)
Footnote 9 (Footnote 13 in the proposed TVP03 permit)	Remove	Delete this footnote. The error mentioned in the note has been corrected in Minor Permit AQ0091MSS03, Revision 1, so the note is no longer relevant.	See permit markup item 60)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
15.5	Revise	Revise as shown to clarify the reporting requirement.	See permit markup item 61)
15.5	Revise	Reformat and reorganize this condition to add clarity to the permit.	See permit markup item 62)
15.5 Footnote 14 [New]	Add	Add new Footnote 14 to document a change made to this condition when carried forward from Minor Permit no. AQ0091MSS03, Rev 1, Condition 12.	See permit markup item 63)
1 st citation following Condition 15.6	Revise	Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.	See permit markup item 64)
16.1	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 65)
16.3	Remove	Permit condition can be removed since this one-time requirement has been fulfilled.	See permit markup item 66)
1 st citation following Condition 16.3	Revise	Insert the specific permit condition in the citation section of each permit condition carried forward from a pre-construction permit.	See permit markup item 67)
3 rd citation following Condition 16.3	Revise	Correct typographical error.	See permit markup item 68)
17	Revise	Include EU IDs 20 and 21 here since they, too, could qualify as IEUs for purposes of the SIP limits based on operating time.	See permit markup item 69)
17	Revise	Add EU ID 37 to this condition. EU ID 37 is an insignificant emissions unit based on size and potential emissions. It also has no emissions unit-specific limits or other requirements.	See permit markup item 70)

FORM E3

Title V Condition Change Request

Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
17, 18, 19, 20	Revise	Update to reflect the language and layout used by the Department in other Title V permits and in Standard Permit Condition V as revised July 22, 2020. Note: there are no incinerators at the Tyonek Platform, so the reference to an incinerator and the citation to 18 AAC 50.050(a) are not included in our proposed version of these conditions.	See permit markup item 71)
Footnote 11 (Footnote 16 in the proposed TVP03 permit)	Revise	Update the citation date or delete the phrase “effective 7/1/07” entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted. Also, update the footnote to follow the language used in other Title V permits.	See permit markup item 72)
Footnote 12 (Footnote 17 in the proposed TVP03 permit)	Revise	Update the citation date or delete the phrase “effective 7/1/07” entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted. Also, update the footnote to follow the language used in other Title V permits.	See permit markup item 73)
Citation following Condition 21	Revise	Update to match the citation used in other Title V permits.	See permit markup item 74)
21.1	Revise	Revise to match the language of 40 CFR 60.7(a)(1).	See permit markup item 75)
21.3d	Revise	Revise as shown to clarify the condition.	See permit markup item 76)
21.4	Revise	Revise to match the language of 40 CFR 60.15(d).	See permit markup item 77)
Citation following Condition 21.4	Revise	Make this change for consistency within the permit.	See permit markup item 78)

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Title V Condition Change Request

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
21.4g	Revise	Revise to clarify.	See permit markup item 79)
22	Revise	Revise to clarify and correct grammatical error.	See permit markup item 80)
23	Revise	Update to reflect the language used by the Department in more recent Title V permits. These changes add clarity and correct the condition referenced to which the exception applies.	See permit markup item 81)
2 nd citation following Condition 23	Revise	Update to match the citation used in other Title V permits. The Subpart GG citation is appropriate here.	See permit markup item 82)
23, 23.1	Revise	There is no CEMS at this source, so the deleted text is not applicable. Update to reflect the language used by the Department in other Title V permits including the edit to original permit Footnote 13 and the addition of new Footnote 19. Also, include the requirement of 40 CFR 60.7(c)(4), which applies to the EEMSP reports.	See permit markup item 83)
24	Revise	Update to reflect the language used by the Department in more recent Title V permits. These changes add clarity.	See permit markup item 84)
26	Revise	Revise to match the language of 40 CFR 60.11(d).	See permit markup item 85)
28	Revise	Add a reference to the condition that addresses Subpart IIII standards. The engines subject to Subpart IIII are also subject to 40 CFR 60.12.	See permit markup item 86)
29	Revise	Modify to reflect that the Subpart GG standard is compared to ISO corrected emissions.	See permit markup item 87)

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Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
29a	Revise and Move	Update to reflect the language used by the Department in other Title V permits. This condition is now replaced by new Condition 75.2 of the proposed permit provided with this application.	See permit markup item 88)
29.2a	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 89)
29.2b	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 90)
29.2b(ii)	Revise	All other references of this type in the permit regarding a deadline for source testing are to the permit effective date. We ask for consistency.	See permit markup item 91)
29.2b(ii)(C)	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 92)
29.2c(i), 29.2c(ii)	Revise	Update to reflect the language used by the Department in more recent Title V permits. Also, correct the referenced rule citation for the portion of Subpart GG that pertains to load.	See permit markup item 93)
29.2c(iii)(C)(2)	Revise	Correct grammatical error.	See permit markup item 94)
29.2c(iii)(D)	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 95)
29.2c(iv)	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 96)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
29.3	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 97)
29.3(a)(iii), 29.3(b)	Revise	Update to reflect the language used by the Department in more recent Title V permits. Since source testing here is referenced by Condition 18.1 of the proposed TVP03 permit, all discussions pertaining to compliance with a limit should also point to Condition 18.1 of the proposed permit.	See permit markup item 98)
29.4	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 99)
29.4a, 29.4b	Revise	We ask that the Department consistently refer to these reports as “Operating Reports”, not “Stationary Source Operating Reports”.	See permit markup item 100)
29.4c(ii)	Revise	Update to reflect the language used by the Department in more recent Title V permits.	See permit markup item 101)
30.1a	Revise	Add a reference to Condition 30.1c. The provisions in Condition 30.1c are also exceptions to the monitoring required by this condition.	See permit markup item 102)
30.1a	Revise	Simplify the permit by referring to the permit condition that lists the required methods instead of referring to an outside document. The citation following Condition 30.2 includes the reference to 40 CFR 60.335(b)(10).	See permit markup item 103)
30.1b	Revise	Change language to reflect its use in the context of the permit instead of the Subpart GG rule.	See permit markup item 104)
30.1b	Revise	Replace the term "turbine" with "by an affected emissions unit" to be consistent with language in NSPS rule.	See permit markup item 105)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Footnote 16 (Footnote 24 in the proposed TVP03 permit)	Revise	Revise to correct and clarify the sentence regarding the exemption that pertains to a demonstration that the fuel gas burned by affected turbines meets the definition of natural gas under §60.331(u).	See permit markup item 106)
30.1d(i)	Revise	Change to bold font to clarify the permit.	See permit markup item 107)
30.1d(i)	Revise	Change language to reflect its use in the context of the permit instead of the Subpart GG rule.	See permit markup item 108)
30.1d(i)	Revise	Make the change noted here to clarify the permit.	See permit markup item 109)
30.1d(ii)	Revise	Change to bold font to clarify the permit.	See permit markup item 110)
30.1d(ii)	Revise	Change language to reflect its use in the context of the permit instead of the Subpart GG rule.	See permit markup item 111)
30.2	Revise	Update to reflect the language used by the Department in other Title V permits	See permit markup item 112)
Citations [New] following Condition 30.2	Add	These citations are appropriate as the basis for the language in this condition.	See permit markup item 113)
30.2a	Revise	Requested changes will make the permit condition match the language of the rule. Also, use bold formatting as shown to clarify the permit.	See permit markup item 114)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Citation [New] following Condition 30.2a	Add	This citation is appropriate as the basis for the language in this condition.	See permit markup item 115)
30.2b	Revise	The cross referenced conditions should be expanded since fuel analyses could be done under both of the conditions shown in our proposed revision.	See permit markup item 116)
Citation following Condition 30.2b	Revise	The revised citation is appropriate as the basis for this condition.	See permit markup item 117)
30.3	Revise	Revise to add clarity.	See permit markup item 118)
30.4	Revise	Update to reflect the language used by the Department in other Title V permits	See permit markup item 119)
31 [New]	Add	These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 60 Subpart IIII for EU IDs 24 and 25.	See permit markup item 120)
31	Revise	Revise to combine appropriate language pertaining to Part 63 NESHAP Subpart A with respect to Subpart ZZZZ as well as the existing permit language that addresses Subpart A with respect to Subpart HH. We also propose to add a new heading that helps to distinguish the Subpart HH section from Subpart A and new conditions pertaining to Subpart ZZZZ.	See permit markup item 121)
32	Revise	We propose to replace the rule citation shown here with a reference to the permit condition that contains the cited rule requirements. We prefer this approach when the applicable requirement is stated in a permit condition.	See permit markup item 122)
Citation that follows Condition 32	Revise	Our proposed change to this citation will make it consistent with other citations in the permit that state the specific NSPS or NESHAP rule.	See permit markup item 123)

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Citation that follows Condition 32.1	Revise	Our proposed change to this citation will make it consistent with other citations in the permit that state the specific NSPS or NESHAP rule.	See permit markup item 124)
33.1b [New]	Add	NESHAP Subpart HH allows for direct measurement of benzene emissions from dehydration units. The proposed addition includes the provision of 40 CFR 63.772(b)(2)(ii) as an option for determining actual benzene emissions.	See permit markup item 125)
34 [New]	Add	Add the good air pollution control practices provision of Subpart HH under 40 CFR 63.764(j) to the permit. The provision applies to EU IDs 40 through 42.	See permit markup item 126)
35 [New]	Add	This is our proposed condition pertaining to the applicable requirement of 40 CFR 63 Subpart ZZZZ for EU IDs 24 and 25. These engines are classified for purposes of Subpart ZZZZ as new RICE at an area source of HAP emissions.	See permit markup item 127)
36, 37, 38 [New]	Add	These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 63 Subpart ZZZZ for EU IDs 8 and 9. These engines are classified for purposes of Subpart ZZZZ as existing SI RICE at an area source of HAP emissions.	See permit markup item 128)
39, 40, 41 [New]	Add	These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 63 Subpart ZZZZ for EU IDs 20, 21, 28, 33, and 34. These engines are classified for purposes of Subpart ZZZZ as existing non-emergency engines located at an area source of HAP emissions not accessible by the Federal Aid Highway System.	See permit markup item 129)
42, 43, 44 [New]	Revise and Move	Update to match the layout, permit location, and language of other Title V permits. (These were Conditions 45 – 49 of the TVP02 permit, except we have removed 40 CFR 61.152 from the condition because §61.152 does not apply. Air cleaning equipment is not used at the Tyonek Platform.)	See permit markup item 130)
36 and 1 st citation following Condition 36	Revise	Remove the references to 18 AAC 50.405, which has been repealed.	See permit markup item 131)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
2 nd citation following Condition 36	Revise	Update to match the current date of the Alaska Statutes.	See permit markup item 132)
37 & 38	Revise	Update Conditions 37 and 38 to match Standard Permit Condition I as revised July 22, 2020, excluding the condition that pertains to a new stationary source that has not commenced construction or operation on or before March 31 as such a provision is not applicable to the Tyonek Platform and excluding the statement that fees are assessed for each pollutant emitted in quantities greater than 10 tons per year. That provision has been removed from 18 AAC 50.410 as of September 7, 2022. We also request that Condition 37.2 be revised to change "based upon the most representative information available" to "based upon representative information available." For emissions estimation purposes related to fees, it should not matter to the Department if emissions estimates are grossly overestimated (thus resulting in higher fees) or are more accurately estimated using "the most representative information available" as long as the emissions are not grossly underestimated. None of the approved methods listed in Condition 37.2 would provide grossly underestimated emissions estimates. AP-42, which is one of the options presented in this condition, is considered representative and is widely regarded as providing very conservative (i.e., high) emissions estimates -- significantly above actual emissions -- that are useful when making a first pass at estimating whether or not permit emissions thresholds have been exceeded. Use of this approved approach should be allowed regardless of whether or not a more "representative" method may be available. All of the emissions estimation methods listed in Condition 37.2 are approved for use. The Permittee should not be required to attempt to determine which of the approved emissions estimation methods is "the most representative." Determining whether a particular method used to estimate emissions is "the most representative" for each pollutant and each emissions unit requires supporting calculations, data for comparison, and a qualitative judgement that one estimation method is, in fact, more representative of actual emissions than another. This is an unnecessary added burden to both the Permittee and the Department.	See permit markup item 133)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
37.1	Revise	Revise the stationary source assessable PTE to match the updated information provided in this permit renewal application.	See permit markup item 134)
38.1	Revise	We propose expanding the options for submittal of actual emissions beyond those specifically stated in Standard Permit Condition I. Our proposed changes to this condition do not modify the existing language in SPC I (proposed Conditions 50.1 and 50.1a), but simply add to the condition the information found in the current version of the SPC I submission instructions (proposed Conditions 50.1b and 50.1c). Reliance on a web page with submittal instructions that can be changed without a public process is problematic. Therefore, we request that this condition be revised to explicitly list the submittal instructions on the web page that the Permittee is directed to in this condition thereby assuring consistent submittal instructions throughout the permit term. This request is based on consideration of the following issues: 1) The web page instructions at issue are subject to change without notice. Therefore, the requirement to submit estimates in accordance with instructions on the web page creates an added burden and results in a potential compliance trap for the Permittee putting the Permittee at risk of administrative permit deviations. 2) A permit condition relying on instructions posted on a web page that can be changed without notice means that the permit is also subject to change without notice. We are concerned that information on the web page is not static and can be revised without notification or a public process. 3) The web page instructions need to be revised to correct inconsistencies. For example, the web page explicitly requires an E-signer and submittal via the AOS portal. However, the AOS portal allows for submittal options that do not require an E-signer. This implies that the "Print Document" feature under "Report Options" within the AOS portal cannot be used because it does not require an E-signer. We request that the Department revise the web page instructions to allow for all submittal options that are available using the AOS Portal, not just the E-signer option.	See permit markup item 135)

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39	Revise	Update the list of emissions units to which this requirement applies. Emissions units 8, 9, 20 and 21 are covered under GAPCP in NESHAP Subpart ZZZZ, so the State GAPCP rule no longer applies to these units. Emissions unit 11 has been removed from service. Emissions unit 37 is an insignificant emissions unit. The State's standard Good Air Pollution Control Practices condition does not apply to IEUs.	See permit markup item 136)
41	Revise	Update Condition 41 and the associated rule citations to match Standard Permit Condition X as revised July 22, 2020.	See permit markup item 137)
42	Revise	Update Condition 42 to reflect the language used by the Department in other Title V permits, and to match 18 AAC 50.055(g).	See permit markup item 138)
43	Revise	Update Condition 43 to match Standard Permit Condition II as revised July 22, 2020.	See permit markup item 139)
44	Revise	Update the list of identified conditions to include all technology-based emissions standards that apply.	See permit markup item 140)
45 - 49	Revise and Move	Update and move to new permit location to match other Title V permits. (These are now new permit Conditions 42, 43, and 44.)	See permit markup item 141)
53.4	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 142)
55	Revise	We request additional language be included to increase clarity and removal of the reference to use of the smoke/no smoke plan. All such references should be removed from the permit since we will not use the smoke/no smoke plan.	See permit markup item 143)
59	Revise	Revise to match the language of 18 AAC 50.345(o).	See permit markup item 144)

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67 [New]	Add	Add this condition, which is found in other Title V permits.	See permit markup item 145)
61	Revise	Update Condition 61 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition XVII.	See permit markup item 146)
62	Revise	Update Condition 62 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition XVII.	See permit markup item 147)
63	Revise	Update to reflect the capitalization used by the Department in other Title V permits.	See permit markup item 148)
64	Revise	Update Condition 64 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition III.	See permit markup item 149)
Citation following Condition 64.2	Revise	This citation should be changed from the one found in Standard Permit Condition III because it should pertain specifically and only to the Notification Form described in Condition 64.2. The revised citation references the appropriate regulatory bases for use of SPC IV (the Notification Form) in a permit.	See permit markup item 150)
65	Revise	Update Condition 65 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition VII. Our request includes removal of the quarterly operating report submittal schedule found in the current permit. We would like to change the reporting period for the Tyonek Platform to match the reporting periods found in the Title V permits of other Hilcorp Cook Inlet sources.	See permit markup item 151)
65.4	Revise	The provisions of this condition apply equally to a permit that has been revised during the reporting period as well as to a permit that has been renewed. Our proposed revisions to the condition make this clear.	See permit markup item 152)

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66	Revise	Update to include a footnote and to reflect the language used by the Department in other Title V permits.	See permit markup item 153)
66.2	Revise	The provisions of this condition apply equally to a permit that has been revised during the reporting period as well as to a permit that has been renewed. Our proposed revisions to the condition make this clear.	See permit markup item 154)
66.3	Revise	Update the listed EPA address for compliance certification report submittals.	See permit markup item 155)
67	Revise	Update to reflect the language used by the Department in other recently issued Title V permits.	See permit markup item 156)
76 [New]	Add	Add this new condition to incorporate ADEC's Standard Permit Condition XV except do not include the portion of SPC XV that pertains to stationary sources located in Nonattainment Areas. This does not apply to the Tyonek Platform stationary source and will not apply during the permit term. Based on the potential emissions for this stationary source, reporting is required every 3 years.	See permit markup item 157)
77 [New]	Add	Insert this condition and footnote to incorporate ADEC's Standard Permit Condition XIV according to the manner used by the Department in other Title V permits.	See permit markup item 158)
69	Revise	Correct grammatical error.	See permit markup item 159)
Citation following Condition 69	Revise	We propose moving this citation to follow all sub-conditions to this condition to match the layout used by the Department in other Title V permits.	See permit markup item 160)
69.4	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 161)

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Citation following Condition 69.4	Move	Move from above.	See permit markup item 162)
70.1, 70.2	Revise	Revise to improve clarity (as done by the Department in other Title V permits) and to change “facility” to “stationary source” per current ADEC policy and definitions.	See permit markup item 163)
71	Revise	Update to reflect the language used by the Department in other Title V permits. Include place holders for appropriate dates tied to the effective date of the renewed permit that results from this application.	See permit markup item 164)
72, 73	Remove	Update to reflect the layout used by the Department in other Title V permits. These conditions are replaced by new Condition 77, above.	See permit markup item 165)
75 83.1 [New]	Revise	Update to reflect the language and layout used by the Department in other Title V permits. New Condition 83.1 replaces TVP02 permit Condition 78.	See permit markup item 166)
77	Revise	Correct punctuation errors.	See permit markup item 167)
78	Move	Move to become new Condition 83.1 to match the permit layout used by the Department in other Title V permits. See comment above.	See permit markup item 168)
86 [New]	Add	Add this condition, which is found in other Title V permits.	See permit markup item 169)
Section 10 introduction	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 170)

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80	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 171)
Table B (Permit Shields Granted)	Revise	Update Table B, which is proposed permit Table D, to include the permit shield requests made in the various B Series Forms and Form E4 included with this permit renewal application and reorganize the table as proposed with the intent of adding clarity. Also, - Remove permit shields for rules that clearly do not apply to oil and gas facilities. Such shields are unnecessary; - Remove permit shields for rules that are not potentially applicable because there are no emissions units at the source that could potentially be affected by the rule; - Reformat and make corrections to the 40 CFR 63 Subpart HH permit shield to clarify the shield; - Enhance the table to show all rule titles.	See permit markup item 172)
Table B (Permit Shields Granted)	Revise	We ask that the Department delete the statement in the permit shield table for the NSPS Subpart IIII shield regarding the potential non-applicability of the shield with respect to future reconstruction, modification, or replacement of an emissions unit. This statement will be replaced with the proposed new language to be added to Condition 88 of the marked up permit.	See permit markup item 173)
Table B (Permit Shields Granted)	Remove	Hilcorp withdraws the request for the permit shield associated with 40 CFR 61, Subpart A.	See permit markup item 174)
Table B (Permit Shields Granted)	Remove	Remove open burning permit shield since there is a permit condition for open burning in the permit even though the rationale provided with the permit shield is correct (no open burning occurs at Tyonek Platform).	See permit markup item 175)

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Section 11, Stationary Source Emissions, Table C, NO _x Emissions Data	Remove	Delete Section 11 (Table C). This table is no longer referenced by the permit as it is not included in Minor Permit AQ0091MSS03, Revision 1, so there is no attachment from the MSS03 permit to be carried forward.	See permit markup item 176)
Section 12 Visible Emission Forms	Revise	Replace these forms with the current version ADEC is using for recently issued Title V permits.	See permit markup item 177)
Section 13 ADEC Notification Form	Revise	Replace this form with the current version ADEC is using for recently issued Title V permits.	See permit markup item 178)
The following proposed changes apply to the <u>Statement of Basis</u>			
Statement of Basis, Cover Page	Revise	Update the Statement of Basis cover page as appropriate.	See permit markup item 179)
Statement of Basis, Stationary Source Identification, 2 nd paragraph	Revise	Edit the second paragraph to provide additional clarifying details regarding the transfer of ownership from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC and subsequent revision of the TVP02 operating permit.	See permit markup item 180)
Statement of Basis, Stationary Source Identification, 3 rd paragraph	Revise	Insert language describing the applicable NAICS code for the stationary source.	See permit markup item 181)
Statement of Basis, Stationary Source Identification, 4 th paragraph	Revise	Update this paragraph to document the current basic processes that occur at the stationary source.	See permit markup item 182)

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Statement of Basis, Emissions Unit Inventory and Description 2 nd paragraph	Revise	Update the emissions unit inventory description to account for shutdown of EU ID 11 (one of the natural gas-fired heaters), add a reference to the three glycol regenerator vents, which are part of the significant emissions unit inventory, and include a discussion and reference to permit Table B to address the Spartan Drill Rig emissions units that are authorized under permit AQ0091MSS04 and carried forward to the TVP03 permit.	See permit markup item 183)
Statement of Basis, Emissions Unit Inventory and Description, 3 rd paragraph	Revise	Update the final paragraph of this section of the Statement of Basis to include a reference to permit Table B (the Spartan 151 Drill Rig EU inventory table) and to reflect the language used by the Department in other Title V permits.	See permit markup item 184)
Statement of Basis, Emissions Footnote 1	Revise	Correct the reference typographical error in Footnote 1 and update the referenced effective date of the current Alaska statutes.	See permit markup item 185)
Statement of Basis, Table D (Emissions Summary)	Revise	Update Table D (now Table E) to match the emissions information provided in this permit renewal application. Also, add CO2e column and add text to clarify the “total” column as done in other Title V permits.	See permit markup item 186)
Statement of Basis, Table D Notes (Emissions Summary)	Add	Add new language used in other Title V permits.	See permit markup item 187)
Statement of Basis, Emissions, 1 st paragraph after Table D	Revise	Update to reflect the language used by the Department in other Title V permits and to remove the caveat regarding assessable emissions applying to pollutants with emissions greater than 10 tpy. This assessable emissions floor was removed in a recent change to the air regulations in 18 AAC 50.	See permit markup item 188)
Statement of Basis, Emissions, 2 nd paragraph after Table D	Revise	Update to clarify this language, add relevant emission calculation procedures used in our application, and to remove outdated information.	See permit markup item 189)

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Statement of Basis, Emissions, 3 rd and 4 th paragraphs [New] after Table D	Add	Add applicable new language to document the methods used to estimate GHG emissions and an update on how HAP emissions were calculated.	See permit markup item 190)
Statement of Basis, Emissions, 3 rd paragraph after Table D	Move	We propose moving this language to become part of new Note (b) to original Statement of Basis Table D (now shown as Table E in the markup of the permit Statement of Basis).	See permit markup item 191)
Statement of Basis Emissions Footnote 2	Revise	Correct the reference typographical error in Footnote 2.	See permit markup item 192)
Statement of Basis, Basis for Requiring an Operating Permit	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 193)
Statement of Basis, Current Air Quality Permits, heading	Revise	Change the heading to this section of the Statement of Basis, which describes both past and current air quality permits for the stationary source.	See permit markup item 194)
Statement of Basis, Current Air Quality Permits, Footnote 3 [New]	Revise	Add new Footnote 3 to the heading for the Current Air Quality Permits section to provide clarifying information regarding use of the term "the Permittee" in this section of the Statement of Basis.	See permit markup item 195)
Statement of Basis, Current Air Quality Permits, Previous Air Quality Permit to Operate	Revise	Insert the specific permit number being referenced in the concluding sentence of this section of the Statement of Basis. Also, there remains only one stationary source-specific requirement of permit 9623-AA007 that is still in effect. Add language to clarify that only the currently applicable requirements are carried forward from this permit to the Title V operating permit.	See permit markup item 196)

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Statement of Basis, Title I (Construction and Minor) Permits 2 nd paragraph	Revise	Correct grammatical error.	See permit markup item 197)
Statement of Basis, Title I (Construction and Minor) Permits, 4 th paragraph	Revise	Add a note to remind the reader that EU ID 11 has been removed from service.	See permit markup item 198)
Statement of Basis, Title I (Construction and Minor) Permits, 6 th paragraph	Revise	Correct grammatical error.	See permit markup item 199)
Statement of Basis, Title I (Construction and Minor) Permits, 6 th paragraph, final sentence	Remove	This sentence should be deleted since permit AQ0091MSS01 Revision 1 has been rescinded by permit AQ0091MSS03 and is no longer a cited permit within the renewed Title V permit.	See permit markup item 200)
Statement of Basis, Title I (Construction and Minor) Permits, 7 th paragraph [New]	Add	Insert a summary of Minor Permit No. AQ0091MSS03 and a reference to the table that describes how conditions from permit AQ0091MSS03 have been carried forward into permit AQ0091TVP03.	See permit markup item 201)
Statement of Basis, Title I (Construction and Minor) Permits, 8 th paragraph [New]	Add	Insert a summary of Minor Permit No. AQ0091MSS04 and a reference to the table that describes how conditions from permit AQ0091MSS04 have been carried forward into permit AQ0091TVP03.	See permit markup item 202)

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Statement of Basis, Title V Operating Permit Application, Revisions, and Renewal History, 5 th and 6 th paragraphs	Revise	Update the first of these two paragraphs to clarify the language and to remove details that are no longer necessary for inclusion in the next generation of the Statement of Basis and add a new paragraph to address the most recent permit renewal application.	See permit markup item 203)
Statement of Basis, Title V Operating Permit Application, Revisions, Table F (Emissions Unit Inventory Revisions) [New]	Add	Add new Table F to document the emissions unit inventory changes for the renewed Title V permit compared to the TVP02 permit.	See permit markup item 204)
Statement of Basis, Compliance History	Revise	Remove the discussion regarding compliance orders that were in effect over 20 years ago. This information is outdated and no longer relevant. Replace this discussion with updated compliance documentation that applies at the time of TVP03 permit issuance. Also, correct a grammatical error.	See permit markup item 205)
Statement of Basis, Stationary Source-Specific Requirements Carried Forward	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 206)
Statement of Basis, Stationary Source-Specific Requirements Carried Forward, final paragraph	Revise	These edits are intended to clarify the language. Also, we ask that the Department replace existing Statement of Basis Table F with new Statement of Basis Table H that addresses conditions as carried forward from minor permit AQ0091MSS03 permit into permit AQ0091TVP03 and add a reference to new Statement of Basis Table I that addresses conditions as carried forward from minor permit AQ0091MSS04.	See permit markup item 207)

FORM E3
Title V Condition Change Request

Permit Number: **AQ0091TVP02 Rev. 1**

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Stationary Source-Specific Requirements Carried Forward, final paragraph, last sentence [New]	Revise	Proposed language to introduce new Table J.	See permit markup item 208)
Statement of Basis, Table E (to become Table G) (Comparison of Permit No. 9623-AA007 Conditions to Operating Permit No. AQ0091TVP03 Conditions)	Revise	Revise many of the entries in the “how condition was revised” column to be more generic since permit AQ0091MSS01 Rev 1 has been replaced by permit AQ0091MSS03.	See permit markup item 209)
Statement of Basis, Table E (to become Table G) (Comparison of Permit No. 9623-AA007 Conditions to Operating Permit No. AQ0091TVP03 Conditions)	Revise	We propose to delete unnecessary text since the change described therein has no effect upon the applicability and content of the permit condition in the Title I permit.	See permit markup item 210)

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Title V Condition Change Request

Permit Number: **AQ0091TVP02 Rev. 1**

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions)	Revise	Update Statement of Basis Table F to compare permit AQ0091MSS03 to renewed permit AQ0091TVP03.	See permit markup item 211)
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions)	Revise	We have updated the first column of Statement of Basis Table F to include references to the condition numbers found in permit AQ0091MSS03.	See permit markup item 212)
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions), 1 st non-header row	Revise	We propose to delete unnecessary text since the change described therein has no effect upon the applicability and content of the permit condition in the Title I permit. There is no change to the underlying requirement as stated in our proposed version of how the condition was revised.	See permit markup item 213)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions), 2 nd non-header row	Add	Add a note to document a change to Conditions 11a and 11c of minor permit AQ0091MSS03 as carried forward to permit AQ0091TVP03.	See permit markup item 214)
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions), 2 nd non-header row	Revise	The reference to the Well Test Flare (old EU ID 40) documented here can be removed because the noted error was fixed in permit AQ0091MSS03 when it was issued.	See permit markup item 215)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions), 2 nd non-header row	Revise	We propose to delete unnecessary text since the change described therein has no effect upon the applicability and content of the permit condition in the Title I permit.	See permit markup item 216)
Statement of Basis, Table F (to become Table H) (Comparison of Permit No. AQ0091MSS03 Conditions to Operating Permit No. AQ0091TVP03 Conditions), 3 rd non-header row	Revise	The error documented here was fixed in permit AQ0091MSS03 when it was issued. As such, no substantive change has been made to Condition 12 of the MSS03 permit when carried forward to the TVP03 permit.	See permit markup item 217)
Statement of Basis, Table I [New] (Comparison of Permit No. AQ0091MSS04 Conditions to Operating Permit No. AQ0091TVP03 Conditions)	Add	Insert new Statement of Basis Table I describing how stationary source specific conditions of minor permit AQ0091MSS04 are carried forward to operating permit AQ0091TVP03.	See permit markup item 218)

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Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Table J [New], (Comparison of Operating Permit No. AQ0091TVP02 to Operating Permit No. AQ0091TVP03 Conditions)	Add	Insert new Statement of Basis Table J comparing current permit (TVP02) conditions to new permit (TVP03) conditions, excluding standard and general conditions.	See permit markup item 219)
Statement of Basis, Statement of Basis for the Permit Conditions	Revise	Update to reflect the capitalization used by the Department in other Title V permits.	See permit markup item 220)
Statement of Basis, Conditions 1 – 5, Legal Basis and Factual Basis	Revise	Revise to generally incorporate the updated version of the Statement of Basis for these conditions that accompanies Standard Permit Condition IX as revised by the Department July 22, 2020. Any differences between our proposed version of the Statement of Basis for these conditions and the Statement of Basis that accompanies Standard Permit Condition IX are source-specific requests for different language.	See permit markup item 221)
Statement of Basis, Conditions 1 – 5, Factual Basis, Liquid Fuel-Fired Equipment	Revise	In the corresponding paragraph of the Statement of Basis for Standard Permit Condition IX, the Department states that records of actions taken to reduce visible emissions must be kept. However, we do not see that requirement in SPC IX and, therefore, it is also not in our proposed revisions to the operating permit. So, we have removed that provision as part of our proposed changes to the Statement of Basis for Tyonek permit AQ0091TVP03.	See permit markup item 222)
Statement of Basis for Conditions 6 – 8, Legal Basis and Factual Basis	Revise	Revise to generally incorporate the updated version of the Statement of Basis for these conditions that accompanies Standard Permit Condition IX as revised by the Department July 22, 2020. Any differences between our proposed version of the Statement of Basis for these conditions and the Statement of Basis that accompanies Standard Permit Condition IX are source-specific requests for different language.	See permit markup item 223)

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Title V Condition Change Request

Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis for Condition 9, Legal Basis and Factual Basis	Revise	We have proposed changes to the Statement of Basis for Condition 9 that reflect similar changes to the Statement of Basis for the visible emissions and particulate matter standards conditions as found in Statement of Basis language that accompanies SPC IX. The Department has not included example Statement of Basis language for SPC XI or SPC XII to use as a go by.	See permit markup item 224)
Statement of Basis, Condition 9, Liquid Fuels	Revise	Update the referenced minor permit, insert specific cross references to the conditions referenced by the sentence, and add a discussion that describes conditions that we have proposed be added to the permit to address a portion of SPC XI that was not included in the TVP02 permit.	See permit markup item 225)
Statement of Basis, Condition 9, Gaseous Fuels, 1 st paragraph	Revise	Update to include language used by the Department in other Title V permits.	See permit markup item 226)
Statement of Basis, Condition 9, Gaseous Fuels, 2 nd paragraph	Revise	Correct the units associated with the natural gas limit from "ppm" to "ppmv" (see Condition 10 of permit no. AQ0091MSS03), update the referenced minor permit, and insert specific cross references to the conditions being referenced in the sentence.	See permit markup item 227)
Heading to the Statement of Basis for Conditions 10 – 16	Revise	Change the title of this heading to accurately describe the types of permits listed in the Legal Basis that may have requirements that are carried forward to the current operating permit.	See permit markup item 228)
Statement of Basis, Conditions 10 – 16, Legal Basis, 2 nd paragraph [New]	Add	Add this paragraph to describe the active permit to operate and construction permits that apply to the Tyonek Platform and have source-specific requirements to be carried forward to the operating permit.	See permit markup item 229)
Statement of Basis, Conditions 10 – 16, Factual Basis, 1 st and 2 nd paragraphs	Revise	Update to improve the accuracy and completeness of the discussion, including updates to the descriptions of the minor permits and their conditions carried forward to the TVP03 permit.	See permit markup item 230)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 10 – 16, Footnote 8	Revise	Suggested edit to make the statement in Footnote 8 (Footnote 9 in the proposed TVP03 permit) more concise.	See permit markup item 231)
Statement of Basis, Conditions 10 – 16, Factual Basis, 2 nd paragraph	Revise	Remove the discussion pertaining to a 1993 catalyst replacement and the reference to permit Condition 16.3, the requirements of which were fulfilled during the current permit term and no longer apply. The condition should be removed from the permit and reference to it should be removed from the Statement of Basis.	See permit markup item 232)
Statement of Basis, Condition 17 – 20, Legal Basis and Factual Basis	Revise	Update the Legal Basis and the Factual Basis to reflect the language used by the Department in the July 22, 2020 revision of Standard Permit Condition V, but retain the 4 th paragraph of the Factual Basis (with edits as shown) which provides source-specific details regarding IEUs at the stationary source that are included in the permit. The Department's standard SPC V Statement of Basis language that refers to incinerators and the SIP standard in 18 AAC 50.050(a) should not be included here because there are no incinerators at this stationary source.	See permit markup item 233)
Statement of Basis, Condition 17 – 20, Factual Basis, 4 th paragraph	Revise	Include EU IDs 20 and 21 on the list of engines that could qualify as IEUs based on actual operating time and resulting emissions.	See permit markup item 234)
Statement of Basis, Condition 17 – 20, Factual Basis, 4 th paragraph	Add	Requested change is intended to add clarity to this section of the Statement of Basis.	See permit markup item 235)
Statement of Basis, Conditions 21 – 28, Legal Basis and Factual Basis	Revise	Update this section of the Statement of Basis to reflect the language used by the Department in other Title V permits.	See permit markup item 236)

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Permit Number: AQ0091TVP02 Rev. 1

Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 21 – 28, Legal Basis, 2 nd paragraph	Revise	Include language to clarify that all provisions of NSPS Subpart A may not necessarily apply to an NSPS-affected facility.	See permit markup item 237)
Statement of Basis, Conditions 21 – 28, Legal Basis, 3 rd paragraph	Revise	Update to add clarity indicating that 40 CFR 60.7(a) does not apply to EU IDs 24 and 25 despite their being subject to NSPS Subpart IIII. Also, add new footnotes to match those used by the Department in other Title V permits.	See permit markup item 238)
Statement of Basis, Conditions 21 – 28, Legal Basis, 4 th paragraph	Revise	It important to note that the notification requirement of 40 CFR 60.15 applies to “existing facilities” that undergo sufficient component replacement as to make the facility become an “affected facility”. EU IDs 1 through 4 are “affected facilities” under NSPS, not “existing facilities”.	See permit markup item 239)
Statement of Basis, Conditions 21 – 28, Legal Basis, 5 th paragraph	Revise	Update to add clarity indicating that 40 CFR 60.7(b) does not apply to EU IDs 24 and 25 despite their being subject to NSPS Subpart IIII.	See permit markup item 240)
Statement of Basis, Conditions 21 – 28, Legal Basis, 7 th paragraph	Move	Move to the end of the Legal Basis as shown.	See permit markup item 241)
Statement of Basis, Conditions 21 – 28, Legal Basis, 9 th and 10 th paragraphs	Revise	Update to add clarity pertaining to why 40 CFR 60.11(d) and §60.11(g) do not apply to EU IDs 24 and 25 despite their being subject to NSPS Subpart IIII.	See permit markup item 242)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 21 – 28, Legal Basis, 11 th paragraph	Revise	Update to account for EU IDs 24 and 25 becoming subject to NSPS Subpart IIII and add the term "circumvention" to the paragraph to match the term used in 40 CFR 60.12..	See permit markup item 243)
Statement of Basis, Conditions 21 – 28, Legal Basis, 12 th paragraph [New]	Move	Move from the 7 th paragraph to here to improve the presentation layout of the language in the Legal Basis as the Department has done in other Title V permits.	See permit markup item 244)
Statement of Basis, Conditions 29 – 30, Legal Basis	Revise	Correct grammatical error.	See permit markup item 245)
Statement of Basis, Conditions 29 – 30, Legal Basis, final sentence [New]	Revise	Requested change is intended to add clarity.	See permit markup item 246)
Statement of Basis, Conditions 29 – 30, Factual Basis, definition of the term "F"	Revise	This statement is now valid under Subpart GG for all gaseous fuels.	See permit markup item 247)
Statement of Basis, Conditions 29 – 30, Factual Basis, SO ₂ Standard, final paragraph	Revise	This proposed change is intended to clarify this sentence.	See permit markup item 248)
Statement of Basis, Conditions 29.1 - 29.3, Legal Basis and Factual Basis, 1 st and 2 nd paragraphs	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 249)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 29.1 - 29.3, Factual Basis, 3 rd paragraph	Revise	Update to reflect the language used by the Department in other Title V permits and to be consistent with suggested revisions to the associated conditions.	See permit markup item 250)
Statement of Basis, Conditions 29.1 - 29.3 (Footnote 12)	Revise	Update the citation date in Footnote 12 (Footnote 13 in the proposed TVP03 permit) or delete the phrase "effective 7/1/07" entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.	See permit markup item 251)
Statement of Basis, Conditions 29.1 - 29.3, Factual Basis, 6 th paragraph	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 252)
Statement of Basis, Conditions 29.1 - 29.3, Factual Basis, 7 th paragraph	Revise	Revise the first sentence of this paragraph to fully and accurately state the Subpart GG NOx source testing requirement found in 40 CFR 60.335(b)(2). In addition, update the paragraph to reference the specific condition to which it applies and to reflect the provisions of that condition. Include with the update changing "If testing at these four loads is not reasonable..." to "If testing at four loads is not reasonable..." Subpart GG ultimately does not require testing at any four specific load points. In addition, testing at less than four loads can be done upon approval. This would make sense, for example, when testing a turbine with a limited or narrow operating range.	See permit markup item 253)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 29.1 - 29.3, Factual Basis, 9 th and 10 th paragraphs	Remove	Hilcorp requests deletion of these paragraphs of the Factual Basis. (The Department has agreed to remove these paragraphs from other Title V permits.) Load can be calculated as an average during each test run. It does not have to encompass an hour. The average of the three test runs can be used to meet the recordkeeping requirement. Also, the reference to Method 20 is outdated. Method 20 no longer requires sampling at a minimum of eight points. The new version of Method 20 refers back to Method 7E which allows sampling at a single point with no stratification or use of a multi-hole probe.	See permit markup item 254)
Statement of Basis, Conditions 30.1 - 30.4, Legal Basis and Factual Basis	Revise	Update this section of the Statement of Basis to reflect the applicable language used by the Department in other Title V permits, including changes that more fully outline the options available to fulfill the required fuel gas sulfur monitoring and reporting.	See permit markup item 255)
Statement of Basis, Condition 31, NSPS Subpart IIII [New]	Add	We have proposed Legal and Factual Basis language for the proposed new permit condition added to the permit to address 40 CFR 60 Subpart IIII requirements applicable to EU IDs 24 and 25.	See permit markup item 256)
Statement of Basis, Condition 31	Revise	Update to reflect the language used by the Department in other Title V permits, with enhancements to address 40 CFR 63 Subpart A as it pertains to both 40 CFR 63 Subpart HH and 40 CFR 63 Subpart ZZZZ.	See permit markup item 257)
Statement of Basis, 40 CFR 63, Subpart HH, current Condition 32 and new Condition 34	Revise	Update to include additional information to describe and support the legal and factual basis of the Subpart HH conditions included in the permit more completely.	See permit markup item 258)
Statement of Basis, Conditions 35 – 41, NESHAP Subpart ZZZZ [New]	Add	Proposed Statement of Basis language for NESHAP Subpart ZZZZ. This language reflects the applicable portions of language used by the Department in other Title V permits. It also includes a high-level discussion documenting why EU IDs 8 and 9 do not qualify as remote stationary RICE.	See permit markup item 259)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Condition 45 (now Condition 42) [Asbestos NESHAP] and Conditions 46, 48, 49 (now Condition 43) [Protection of Stratospheric Ozone]	Move and Revise	Update to match the layout, permit location, and language of other Title V permits.	See permit markup item 260)
Statement of Basis, Condition 47 (now Condition 44) [NESHAPs Applicability Determinations]	Move and Revise	We have moved this condition to match the layout and permit location used by the Department in other Title V permits. We have proposed language here that we believe improves upon and clarifies the Statement of Basis language for this condition compared to the language typically used by the Department in other Title V permits.	See permit markup item 261)
Statement of Basis, Conditions 33 – 35, Legal Basis and Factual Basis	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 262)
Statement of Basis, Condition 36, Legal Basis and Factual Basis	Revise	Remove the references to 18 AAC 50.405, which has been repealed.	See permit markup item 263)
Statement of Basis, Conditions 37 – 38, Factual Basis, 1 st paragraph	Revise	Correction of terminology and capitalization.	See permit markup item 264)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 37 – 38, Factual Basis, 1 st paragraph	Revise	Correction to rule citation.	See permit markup item 265)
Statement of Basis, Conditions 37 – 38, Factual Basis, 3 rd paragraph	Revise	Update to reflect the language used by the Department in other Title V permits, including a correction to the rule citation. All of AS 46.14.250(h)(1) is pertinent to this sentence, not just AS 46.14.250(h)(1)(A).	See permit markup item 266)
Statement of Basis, Conditions 37 – 38, Factual Basis, 4 th paragraph	Revise	Suggested revision	See permit markup item 267)
Statement of Basis, Conditions 37 – 38, Factual Basis, 5 th paragraph	Revise	Correct typographical errors.	See permit markup item 268)
Statement of Basis, Condition 39, Legal Basis	Revise	1) Update to reflect the capitalization used by the Department in other Title V permits. 2) Make changes to clarify the Legal Basis, including the addition of language to specifically state why the condition does not apply to certain emissions units at the stationary source.	See permit markup item 269)
Statement of Basis, Condition 39, Factual Basis, 1 st paragraph	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 270)
Statement of Basis, Condition 39, Factual Basis, 3 rd paragraph	Revise	The Department has included this language in other Title V permits. We agree that it is reasonable to include this clarification in the Statement of Basis.	See permit markup item 271)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Condition 41, Legal Basis	Revise	We believe the language pertaining to bulk material handling, which comes from the Department's "standard Title V permit template", is not applicable to an offshore oil & gas platform. There are no activities at the platform that might be a significant source of fugitive dust. Therefore, we have deleted text that is not reasonably applicable to the stationary source. We have also corrected a typographical error.	See permit markup item 272)
Statement of Basis, Condition 41, Factual Basis	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 273)
Statement of Basis, Condition 42, Legal Basis	Revise	Update to reflect the language used by the Department in other Title V permits, including a correction to the rule citation.	See permit markup item 274)
Statement of Basis, Condition 43, Factual Basis	Revise	Update to reflect the language used by the Department in other Title V permits, including a correction to a rule citation.	See permit markup item 275)
Statement of Basis, Conditions 45 - 49	Remove	The basis for these conditions has been moved to match the layout and location that the Department has used in other Title V permits.	See permit markup item 276)
Statement of Basis, Condition 50, Legal Basis	Revise	Suggested change.	See permit markup item 277)
Statement of Basis, Conditions 52 – 54, Legal Basis	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 278)
Statement of Basis, Conditions 52 – 54, Factual Basis	Revise	Correct a grammatical error.	See permit markup item 279)

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Title V Permit Information

Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Condition 55	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 280)
Statement of Basis, Condition 56 - 59	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 281)
Statement of Basis, Condition 67, Particulate Matter Calculations [New]	Add	Insert Statement of Basis language here for the Particulate Matter Calculations condition to be added to the permit. Our proposed language reflects the language used by the Department in other Title V permits.	See permit markup item 282)
Statement of Basis, Condition 60, Factual Basis	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 283)
Statement of Basis, Condition 61	Revise	Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition XVII, except include a reference to 18 AAC 50.205 in the first sentence of the Legal Basis. The Department inadvertently removed this reference from the Legal Basis when it was revised in July 2020.	See permit markup item 284)
Statement of Basis, Condition 62	Revise	Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition XVII.	See permit markup item 285)
Statement of Basis, Condition 63	Revise	Update the Legal Basis and the Factual Basis to reflect the language used by the Department in other Title V permits.	See permit markup item 286)
Statement of Basis, Condition 64	Revise	Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition III.	See permit markup item 287)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Condition 65	Revise	1) Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition VII, except make a slight revision as noted in 2), below. 2) The provisions of this condition apply equally to a permit that has been revised during the reporting period as well as to a permit that has been renewed. Our proposed revisions to the Factual Basis for this condition make this clear.	See permit markup item 288)
Statement of Basis, Condition 66, Factual Basis	Revise	Update to reflect the language used by the Department in other Title V permits, except we propose to slightly modify the second paragraph of the Factual Basis to address the fact that the provisions of this condition apply equally to a permit that has been revised as well as to a permit that has been renewed. Our proposed revisions to the Factual Basis for this condition make this clear.	See permit markup item 289)
Statement of Basis, Condition 67, Legal Basis and Factual Basis	Revise	Our proposed revisions reflect the actual requirement of this permit condition and match the language used by the Department in other Title V permits.	See permit markup item 290)
Statement of Basis, Condition 76, Emission Inventory Reporting [New]	Add	Insert Statement of Basis language here for the Emission Inventory Reporting condition to be added to the permit. Our proposed language matches the bases that accompany the current version of Standard Permit Condition XV with a caveat about excluding parts of the SPC that do not apply to the Tyonek Platform. Also, exclude from the bases the discussion that pertains to stationary sources located in non-attainment areas since that is not pertinent to the Tyonek Platform.	See permit markup item 291)
Statement of Basis, Condition 77, Permit Applications and Submittals [New]	Add	Insert a Legal Basis and Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition XIV.	See permit markup item 292)

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Current Title V Operating Permit Condition Number	Type of change (revise or remove)	Reason for change	Requested Alaska Title V Operating Permit Condition
Statement of Basis, Conditions 68 – 70, Legal Basis	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 293)
Statement of Basis, Conditions 68 – 70, Legal Basis	Revise	Correct rule citation.	See permit markup item 294)
Statement of Basis, Condition 68 – 70, Factual Basis	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 295)
Statement of Basis, Condition 71, Legal Basis	Revise	Correct grammatical error.	See permit markup item 296)
Statement of Basis, Condition 71, Factual Basis	Revise	Correct typographical error.	See permit markup item 297)
Statement of Basis, Conditions 72 – 73, Permit Applications	Remove	These conditions have been replaced by new Condition 77, above.	See permit markup item 298)
Statement of Basis, Conditions 74 - 78	Revise	Update to reflect the language used by the Department in other Title V permits.	See permit markup item 299)
Statement of Basis, Conditions 79 - 80	Revise	Update to reflect the language used by the Department in other Title V permits and to remove the outdated permit shield denial language that is not applicable to the renewed permit.	See permit markup item 300)
Statement of Basis, Attachment A	Revise	Replace with a more recent version of this attachment as provided by the Department for other Title V permits.	See permit markup item 301)

FORM E4

Permit Shield Request

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Non-Applicable Requirements

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
40 C.F.R. 60, Subpart KKK - Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants 40 C.F.R. 60, Subpart LLL - Standards of Performance for SO ₂ Emissions from Onshore Natural Gas Processing	Tyonek Platform is an offshore stationary source.
40 C.F.R. 60, Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution 40 C.F.R. 60, Subpart OOOOa – Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	These subparts apply only to onshore oil and gas operations. (See 40 C.F.R. 60.5365 and §60.5365a.) This stationary source is located beyond the low tide line in territorial seas. Therefore, the source does not meet the definition of “onshore” as provided in §60.5430 and §60.5430a.
40 C.F.R. 61, Subpart J - National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene	The stationary source does not contain any equipment in benzene service.
40 C.F.R. 61, Subpart M – National Emission Standard for Asbestos; §61.152 - Standard for Air-Cleaning	Stationary source does not use air cleaning equipment.
Activities subject to 40 C.F.R. 61 Subpart M – Standard for Demolition and Renovation (§61.145)	
40 C.F.R. 61, Subpart A – General Provisions §61.05(a) - Prohibited Activities §61.07 - Application for Approval of Construction or Modification §61.09 - Notification of Startup	Owners or operators of demolition and renovation operations are exempt from the requirements of §§61.05(a), 61.07, and 61.09. [40 C.F.R. 61.145(a)(5)]
§61.10 - Source Reporting and Waiver Request	Demolition and renovation operations exempt from §61.10(a). [40 C.F.R. 61.153(b)]

¹ Citations must be specific. Include sub-paragraph level detail [e.g. 18 AAC 50.055(a)(1), or 40 C.F.R. 60.332(a)(2).]

FORM E4
Permit Shield Request

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Non-Applicable Requirements

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
§61.13 - Emission Tests §61.14 - Monitoring Requirements	Emission tests or monitoring is not required under the standards for demolition and renovation. [40 C.F.R. 61.145]
40 C.F.R. 61, Subpart M – National Emission Standard for Asbestos; 40 C.F.R. 61.153 - Standard for Reporting	No reporting requirements apply for emissions units subject to 40 C.F.R. 61.145 (demolition and renovation) [40 C.F.R. 61.153(a)].
40 C.F.R. 61, Subpart V – National Emission Standard for Equipment Leaks (Fugitive Emission Sources)	Stationary source does not operate equipment in volatile hazardous air pollutant (VHAP) service (greater than or equal to 10 percent VHAP by weight). [40 C.F.R. 61.240 and §61.241]
40 C.F.R. 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning	Stationary source does not operate halogenated solvent cleaning machines.

FORM E4

Permit Shield Request

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Non-Applicable Requirements

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
40 C.F.R. 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities: §63.764(c) & (d), §63.765, §63.766, §63.769, §63.771, §63.772 (all except §63.772(b)(2)), §63.773, §63.774 (all except §63.774(d)(1)(ii)), and §63.775	The Tyonek Platform is not a major source of hazardous air pollutants as defined under any subpart of 40 C.F.R 63. Further, the Tyonek Platform is not subject to the Subpart HH area source control requirements or ongoing monitoring, recordkeeping or reporting because the facility is not located within an urban area as defined by Subpart HH and per-dehydrator actual annual average benzene emissions are less than 0.9 Mg/yr (i.e., 1 TPY), excluding controls. • §63.764(c) only applies to major sources. • The non-applicability of §63.764(d) is indicated under §63.764(e)(1). • The non-applicability of §63.765 is indicated under §63.765(a) because no control of emissions is required for the dehydration units. • §63.766 and §63.769 only apply to major sources. • §63.771 and §63.773 are not applicable because no control of emissions is required by the subpart. • The non-applicability of §63.774 is indicated under §63.774(b) and (d)(1). • §63.775(b) only applies to major sources. • The non-applicability of §63.775(c) is indicated under §63.775(c)(8). • §63.775(d) applies only to major sources as indicated under §63.775(b)(4). • §63.775(e) applies only to major sources or area sources within urban areas as defined under Subpart HH. See §63.775(e) and (e)(3).
40 C.F.R. 63, Subpart HHH – National Emission Standards for Hazardous Air Pollutants for Natural Gas Transmission and Storage Facilities	The Tyonek Platform operates prior to the point of custody transfer and is not a major source of HAP emissions as defined in Subpart HHH.
40 C.F.R. 63, Subpart EEEE – National Emission Standards for Organic Liquid Distribution (Non-Gasoline)	Stationary source is not a major source of HAP emissions.
40 C.F.R. 64 – Compliance Assurance Monitoring	EU IDs 8, 9: Rule applies to emissions units that use an add-on control device to meet an emission limit or standard and that have pre-control emissions greater than 100 tons/yr for the pollutant for which the control device is operated. These units do not have pre-control device NO_x emissions greater than 100 tons/yr. All other EUs: Pollutant-specific emissions unit control devices are not used by these units to achieve compliance with any emission limitation or standard.

FORM E4

Permit Shield Request

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Non-Applicable Requirements

Non-Applicable Requirements ¹	Reason for non-applicability and citation/basis
40 C.F.R. 68 – Accidental Release Prevention Requirements: Risk Management Programs [§112(r)]	The Tyonek Platform, a crude petroleum and natural gas extraction facility (NAICS code 211120), does not process or store regulated flammable or toxic substances in excess of threshold quantities. “Naturally occurring hydrocarbon mixtures” (crude oil, condensate, natural gas and produced water) prior to entry into a petroleum refining process unit (NAICS code 324110) or a natural gas processing plant (NAICS code 211130) are exempt from the threshold determination. [40 C.F.R. 68.115]
40 C.F.R. 82.1, Subpart A – Production and Consumption Controls	Stationary source does not produce, transform, destroy, import or export Class I, or Group I or II substances or products.
40 C.F.R. 82.30, Subpart B – Servicing of Motor Vehicle Air Conditioners	Motor vehicle air conditioners are not serviced on site.
40 C.F.R. 82.60, Subpart C – Ban on Nonessential Products Containing Class I Substances and Ban on Nonessential Products Containing or Manufactured with Class II Substances 40 C.F.R. 82.100, Subpart E – The Labeling of Products Using Ozone-Depleting Substances	Stationary source does not manufacture or distribute Class I or II products or substances.
40 C.F.R. 82.80, Subpart D – Federal Procurement	This subpart applies only to Federal departments, agencies, and instrumentalities.
40 C.F.R. 82.158, Subpart F – Recycling and Emissions Reduction	Stationary source does not manufacture or import recovery and recycling equipment.
40 C.F.R. 82.160, Subpart F – Approved Equipment Testing Organizations	Stationary source does not contract equipment testing organizations to certify recovery and recycling equipment.

FORM E4
Permit Shield Request

Permit Number: **AQ0091TVP02**

Stationary Source-Wide Non-Applicable Requirements

Non-Applicable Requirements¹	Reason for non-applicability and citation/basis
40 C.F.R. 82.164, Subpart F – Reclaimer Certification	Stationary source does not sell reclaimed refrigerants.
40 C.F.R. 82, Subpart F, Appendix C – Method for Testing Recovery Devices for Use With Small Appliances	Stationary source is not a third-party entity that certifies recovery equipment.
40 C.F.R. 82, Subpart F, Appendix D – Standards for Becoming a Certifying Program for Technicians	Stationary source does not have a technician certification program.
40 C.F.R. 82.174(a), Subpart G - Significant New Alternatives Policy Program: Prohibitions	Stationary source does not manufacture substitute chemicals or products for ozone-depleting compounds.
40 C.F.R. 82.270(a), Subpart H – Halon Emissions	Stationary source does not manufacture halon.
18 AAC 50.070 - Marine vessel visible emissions standards	Stationary source is more than 3 miles from shore.

**SECTION 6 -
CURRENT OPERATING PERMIT
(PERMIT NO. AQ0091TVP02 REVISION 1)**

**Tyonek Platform
Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1**

HILCORP ALASKA, LLC
3800 Centerpoint Dr., Suite 1400 (zip 99503)
P.O. Box 244027
Anchorage, AK 99524-4027

February 2023

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY OPERATING PERMIT

Permit No. AQ0091TVP02
Revision 1: November 1, 2016

Issue: March 31, 2009
Expiration Date: March 31, 2014

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues an operating permit to the Permittee, **Hilcorp Alaska, LLC**, for the operation of the **Tyonek Platform**.

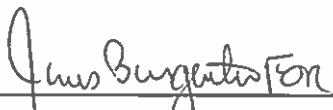
This permit satisfies the obligation of the owner and operator to obtain an operating permit as set out in AS 46.14.130(b).

As set out in AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this operating permit.

All stationary source-specific terms and conditions of Permit to Operate No. 9623-AA007 and Air Quality Minor Permit No. AQ0091MSS01 Revision 1 have been incorporated into this operating permit.

Upon effective date of this operating permit, Operating Permit No. AQ0091TVP01 Revision 3 expires.

This operating permit becomes effective April 30, 2009. This revised Operating Permit is effective November 1, 2016 and acknowledges the transfer of ownership of the Tyonek Platform from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC.



John F. Kuterbach, Manager
Air Permits Program

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List of Abbreviations Used in this Permit

AAC	Alaska Administrative Code
ADEC.....	Alaska Department of Environmental Conservation
AS	Alaska Statutes
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BHp	Boiler Horsepower
C.F.R.....	Code of Federal Regulations
The Act.....	Clean Air Act
CO	Carbon Monoxide
dscf	Dry standard cubic foot
EPA	US Environmental Protection Agency
EU	Emission Unit
gr/dscf	Grain per dry standard cubic foot (1 pound = 7000 grains)
GPH.....	Gallons per hour
HAPs	Hazardous Air Pollutants [<i>HAPs</i> as defined in AS 46.14.990(14)]
ID	Emission Unit Identification Number
kPa.....	KiloPascals
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology as defined in 40 C.F.R. 63.
MR&R.....	Monitoring, Recordkeeping, and Reporting
NESHAPs	Federal National Emission Standards for Hazardous Air Pollutants [<i>NESHAPs</i> as contained in 40 C.F.R. 61 and 63]
NO _x	Nitrogen Oxides
NSPS	Federal New Source Performance Standards [<i>NSPS</i> as contained in 40 C.F.R. 60]
O&M.....	Operation and Maintenance
O ₂	Oxygen
PAL	Plantwide Applicability Limitation
PM-10	Particulate Matter less than or equal to a nominal ten microns in diameter
ppm	Parts per million
ppmv, ppmvd	Parts per million by volume on a dry basis
psia	Pounds per Square Inch (absolute)
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
S	Sulfur
SIC.	Standard Industrial Classification
SO ₂	Sulfur dioxide
TPH.....	Tons per hour
TPY	Tons per year
VOC	Volatile organic compound [<i>VOC</i> as defined in 40 C.F.R. 51.100(s)]
VOL	Volatile organic liquid [<i>VOL</i> as defined in 40 C.F.R. 60.111b, Subpart Kb]
vol%	Volume percent
wt%	weight percent

Section 1. Stationary Source Information

Identification

Names and Addresses

Permittee:	Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524
Stationary Source Name:	Tyonek Platform
Location:	61° 04' 36" North Latitude; 150° 56' 52" West Longitude
Physical Address:	Upper Cook Inlet, AK
Owner/Operator:	Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524
Permittee's Responsible Official:	David S. Wilkins, Senior Vice President Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524
Designated Agent:	CT Corporation 9360 Glacier Highway, Suite 202 Juneau, AK 99801
Stationary Source and Building Contact:	David S. Wilkins, Senior Vice President Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524 (907) 777-8300 dwilkins@hilcorp.com
Permit and Fee Contact:	David S. Wilkins, Senior Vice President Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524 (907) 777-8300 dwilkins@hilcorp.com

Stationary Source Process Description

SIC Code of the Stationary Source: 1311 -- Crude Petroleum and Natural Gas

[18 AAC 50.040(j)(3), 7/25/08; 18 AAC 50.326(a), 12/1/04]
[40 C.F.R. 71.5(c)(1 & 2), 7/2/07]

Section 2. Emission Unit Inventory and Description

Emission units listed in Table A have specific monitoring, recordkeeping, or reporting conditions in this permit. Emission unit descriptions and ratings are given for identification purposes only.

Table A – Emission Unit Inventory

ID	Emission Unit Name	Emission Unit Description	Rating/Size	Install Date
Gas Fired Turbines				
1	Turbine/Compressor Set	Solar Centaur T-4700 Turbine Compressor No. 1	4700 hp	1999
2	Turbine/Compressor Set	Solar Centaur T-4700 Turbine Compressor No. 2	4700 hp	1999
3	Turbine/Compressor Set	Solar Taurus 60 T-7300S Turbine Compressor No. 3	7170 hp	2000
4	Turbine/Compressor Set	Solar Taurus 60 T-7300S Turbine Compressor No. 4	7170 hp	2000
Gas Fired Engines, Heaters, & Boilers				
8	Gas Electric Generator Set	Waukesha L-7042G Engine No. 1 with air-fuel controllers and catalytic converters	810 hp	1968
9	Gas Electric Generator Set	Waukesha L-7042G Engine No. 4 with air-fuel controllers and catalytic converters	810 hp	1968
10	Gas Heater	Glycol Heater No. 1	11.1 MMBtu/hr	1968
11	Gas Heater	Glycol Heater No. 2	11.1 MMBtu/hr	1968
12	Gas Heater	Glycol Heater No. 3	11.1 MMBtu/hr	1968
Diesel Fired Engines				
20	Engine	Caterpillar D-398 Engine No. 1	795 hp	1968
21	Engine	Caterpillar D-398 Engine No. 2	795 hp	1968
24	Engine	Manitowoc Crane Engine	230 hp	1968
25	Engine	Unit Crane Engine	230 hp	1968
28	Engine	John Deere 4039 Engine	80 hp	1992
33	Engine	Caterpillar 3306 Firewater Engine No. 1	231 hp	2002
34	Engine	Caterpillar 3306 Firewater Engine No. 2	231 hp	2002
Flares				
37	Gas Flare	HP/LP Flare Pilots	0.125 MMBtu/hr	1968
38	Gas Flare	HP Safety Flare	583.3 MMBtu/hr	1968
39	Gas Flare	LP Safety Flare	53.3 MMBtu/hr	1968
Vents				
40	Vent	Glycol Regenerator No. 1 Reboiler Vent	NA	1968
41	Vent	Glycol Regenerator No. 2 Reboiler Vent	NA	1968
42	Vent	Glycol Regenerator No. 3 Reboiler Vent	NA	1968

Notes: (1) The emission unit ratings provided in MMBtu/hr refer to the higher heating value of the fuel.

(2) The ratings for EU IDs 8, 9, 20, and 21 were updated consistent with the revisions made in Minor Permit No. AQ0091MSS01 Rev. 1 and Permit No. AQ0091TVP01 Rev. 3.

(3) EU IDs 13 – 15 in the Permit No. AQ0091TVP01 Rev. 3 are not included in the table because they are insignificant emission units that no longer have emission-unit specific requirements. The requirements have been rescinded by Minor Permit No. AQ0091MSS01 Rev. 1.

Permit No. AQ0091TVP02
Tyonek Platform
Revision 1: November 1, 2016

Issued: March 31, 2009
Expires: March 31, 2014

[18 AAC 50.326(a), 12/1/04]
[40 C.F.R. 51.166(b); 40 C.F.R. 71.5(c)(3), 7/2/07]

Section 3. State Requirements

Visible Emissions Standards

- 1. Industrial Process and Fuel-Burning Equipment Visible Emissions.** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 1 – 4, 8 – 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 listed in Table A to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

[18 AAC 50.040(j) & 50.055(a)(1), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(1), 7/2/07]

- 1.1 For EU IDs 1 – 4 and 8 – 12, burn only gas as fuel. Monitoring for these emission units shall consist of a certification in each operating report under condition 65 that each of these emission units fired only gas. Report under condition 64 if any fuel is burned other than gas.
- 1.2 For EU IDs 20 and 21, monitor, record, and report in accordance with conditions 2 - 4.
- 1.3 For each of EU IDs 24, 25, 28, 33, and 34, as long as insignificant and actual emissions do not exceed 5 tons CO, 2 tons each for VOC, NO_x, and SO₂, and 0.75 tons PM-10 per 12-month period, monitor, record, and report in accordance with conditions 17 and 18. Otherwise, monitor, record, and report in accordance with conditions 2 - 4 for the duration of the permit term.
- 1.4 For EU IDs 37 – 39, monitor, record and report in accordance with condition 5.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3), 7/2/07]

Visible Emissions Monitoring, Recordkeeping and Reporting

For Liquid Fuel-Fired Emission Units

- 2. Visible Emissions Monitoring.** The Permittee shall observe the exhaust of EU IDs 20 and 21 (and units no longer considered insignificant as set out by condition 1.3) for visible emissions using either the Method 9 Plan under condition 2.1 or the Smoke/No-Smoke Plan under condition 2.2. The Permittee may change visible-emissions plans for an emission unit at any time unless prohibited from doing so by condition 2.3. The Permittee may continue a visible emission monitoring schedule according to the prevailing schedule in effect from a previous permit at the time a renewed permit is issued.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(i), 7/2/07]

- 2.1 **Method 9 Plan.** For all 18-minute observations in this plan, observe exhaust, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations.

-
- a. First Method 9 Observation. For any unit, observe exhaust for 18 minutes within 14 calendar days after changing from the Smoke/No-Smoke Plan of condition 2.2. For any units replaced during the term of this permit or for any new units, observe exhaust for 18 minutes within 30 days of startup. For any unit no longer considered insignificant as set out by condition 1.3, observe for 18 minutes within 30 days of triggering a change in status.
 - b. Monthly Method 9 Observations. After the first Method 9 observation, perform 18-minute observations at least once in each calendar month that an emission unit operates.
 - c. Semiannual Method 9 Observations. After observing emissions for three consecutive operating months under condition 2.1b, unless a six-minute average is greater than 15 percent and one or more observations are greater than 20 percent, observe emissions at least semiannually for 18 minutes. Semiannual observations must be taken between four and seven months after the previous set of observations.
 - d. Annual Method 9 Observations. After at least two semiannual 18-minute observations, unless a six-minute average is greater than 15 percent and one or more individual observations are greater than 20 percent, observe emissions at least annually.
Annual observations must be taken between 10 and 13 months after the previous observations.
 - e. Increased Method 9 Frequency. If a six-minute average opacity is observed during the most recent set of observations to be greater than 15 percent and one or more observations are greater than 20 percent, then increase or maintain the 18-minute observation frequency for that emission unit to at least monthly intervals, until the criteria in condition 2.1c for semiannual monitoring are met.
- 2.2 **Smoke/No Smoke Plan.** Observe the exhaust for the presence or absence of visible emissions, excluding condensed water vapor.
- a. Initial Monitoring Frequency. Observe the exhaust during each calendar day that an emission unit operates.
 - b. Reduced Monitoring Frequency. After the emission unit has been observed on 30 consecutive operating days, if the emission unit operated without visible smoke in the exhaust for those 30 days, then observe emissions at least once in every calendar month that an emission unit operates.
 - c. Smoke Observed. If smoke is observed, either begin the Method 9 Plan of condition 2.1 or perform the corrective action required under condition 2.3.

2.3 **Corrective Actions Based on Smoke/No Smoke Observations.** If visible emissions are present in the exhaust during an observation performed under the Smoke/No Smoke Plan of condition 2.2, then the Permittee shall either follow the Method 9 plan of condition 2.1 or

- a. initiate actions to eliminate smoke from the emission unit within 24 hours of the observation;
- b. keep a written record of the starting date, the completion date, and a description of the actions taken to reduce smoke; and
- c. after completing the actions required under condition 2.3a,
 - (i) take Smoke/No Smoke observations in accordance with condition 2.2
 - (A) at least once per day for the next seven operating days and until the initial 30 day observation period is completed; and
 - (B) continue as described in condition 2.2b; or
 - (ii) if the actions taken under condition 2.3a do not eliminate the smoke, or if subsequent smoke is observed under the schedule of condition 2.3c(i)(A), then observe the exhaust using the Method 9 Plan unless the Department gives written approval to resume observations under the Smoke/No Smoke Plan; after observing smoke and making observations under the Method 9 Plan, the Permittee may at any time take corrective action that eliminates smoke and restart the Smoke/No Smoke Plan under condition 2.2a.

3. **Visible Emissions Recordkeeping.** The Permittee shall keep records as follows:

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(ii), 7/2/07]

3.1 If using the Method 9 Plan of condition 2.1

- a. the observer shall record
 - (i) the name of the stationary source, emission unit, and location; stationary source type, observer's name, and affiliation; and the date on the Visible Emissions Field Data Sheet in Section 12;
 - (ii) the time, estimated distance to the emissions location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), plume background, and operating rate (load or fuel consumption rate) on the sheet at the time opacity observations are initiated and completed;

-
- (iii) the presence or absence of an attached or detached plume and the approximate distance from the emissions outlet to the point in the plume at which the observations are made;
 - (iv) opacity observations to the nearest five percent at 15-second intervals on the Visible Emissions Observation Record in Section 12, and
 - (v) the minimum number of observations required by the permit; each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period;
 - b. to determine the six-minute average opacity, divide the observations recorded on the record sheet into sets of 24 consecutive observations; sets need not be consecutive in time and in no case shall two sets overlap; for each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24; record the average opacity on the sheet;
 - c. calculate and record the highest 18-consecutive-minute averages observed.
- 3.2 If using the Smoke/No Smoke Plan of condition 2.2, record the following information in a written log for each observation and submit copies of the recorded information upon request of the Department:
- a. the date and time of the observation;
 - b. from Table A, the ID of the unit observed;
 - c. whether visible emissions are present or absent in the exhaust;
 - d. a description of the background to the exhaust during the observation;
 - e. if the unit starts operation on the day of the observation, the startup time of the unit;
 - f. name and title of the person making the observation; and
 - g. operating rate (load or fuel consumption rate).

4. Visible Emissions Reporting. The Permittee shall report visible emissions as follows:

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(iii), 7/2/07]

4.1 Include in each stationary source operating report under condition 65

- a. which visible-emissions plan of condition 2 was used for each emission unit; if more than one plan was used, give the time periods covered by each plan;

-
- b. for each emission unit under the Method 9 Plan,
 - (i) copies of the observation results (i.e. opacity observations) for each unit that used the Method 9 Plan, except for the observations the Permittee has already supplied to the Department; and
 - (ii) a summary to include:
 - (A) number of days observations were made;
 - (B) highest six-minute average observed; and
 - (C) dates when one or more observed six-minute averages were greater than 20 percent;
 - c. for each unit under the Smoke/No Smoke Plan, the number of days that Smoke/No Smoke observations were made and which days, if any, that smoke was observed; and
 - d. a summary of any monitoring or recordkeeping required under conditions 2 and 3 that was not done;

4.2 Report under condition 64:

- a. the results of Method 9 observations that exceed an average 20 percent for any six-minute period; and
- b. if any monitoring under condition 2 was not performed when required, report within three days of the date the monitoring was required.

For Flares (EU IDs 37 – 39)

5. **Visible Emissions Monitoring, Recordkeeping, and Reporting.** The Permittee shall observe one flare event¹ annually and six flare events total occurring during the life of this permit².

5.1 Monitor flare events using Method 9.

5.2 Record the following information for observed events:

- a. the flare(s) EU ID number;

¹ For purposes of this permit, a *flare event* is flaring of gas for approximately one hour as a result of scheduled release operations, i.e. maintenance or well testing activities. It does not include non-scheduled release operations, i.e. process upsets, emergency flaring, or de-minimis venting of gas incidental to normal operations. *Approximately* is defined as any release with a duration of 50 minutes or more.

² Flare events monitored within 12-months prior to permit effective date may count towards the six-event total.

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- b. results of the Method-9 observations;
 - c. reason(s) for flaring;
 - d. date, beginning and ending time of event; and
 - e. volume of gas flared.
- 5.3 Monitoring of a flare event may be postponed for safety or weather reasons, or because a qualified observer is not available. Until monitoring has been completed on the six flare events described in this condition, the Permittee shall either monitor each qualifying flare event or include in the next report required by condition 65, an explanation of the reason the event was not monitored.
- 5.4 Include in the stationary source operating report required by condition 65:
- a. the number of flare events (as defined by condition 5) that occurred during the reporting period; and
 - b. copies of the records required by condition 5.2.
- 5.5 Report under condition 64 whenever the opacity standard in condition 1 is exceeded.
- [18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3) & (c)(6), 7/2/07]

Particulate Matter Emissions Standards

- 6. Industrial Process and Fuel-Burning Equipment Particulate Matter.** The Permittee shall not cause or allow particulate matter emitted from EU IDs 1 – 4, 8 – 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 listed in Table A to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.
- [18 AAC 50.040(j) & 50.055(b)(1), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(1), 7/2/07]
- 6.1 For EU IDs 1 – 4 and 8 – 12, burn only gas as fuel. Monitoring for these emission units shall consist of a certification in each operating report under condition 65 that each of these emission units fired only gas. Report under condition 64 if any fuel is burned other than gas.
 - 6.2 For EU IDs 20 and 21, monitor, record, and report in accordance with conditions 7 - 8.
 - 6.3 For each of EU IDs 24, 25, 28, 33, and 34, as long as insignificant and actual emissions do not exceed 5 tons CO, 2 tons each for VOC, NO_x, and SO₂, and 0.75 tons PM-10 per 12-month period, monitor, record, and report in accordance with conditions 17 and 19. Otherwise, monitor, record, and report in accordance with conditions 7 - 8 for the duration of the permit term.

- 6.4 For EU IDs 37 – 39, the Permittee must annually certify compliance under condition 66 with the particulate matter standard.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3), 7/2/07]

Particulate Matter Monitoring, Recordkeeping and Reporting

For Liquid Fuel-Fired Diesel Engines

7. **Particulate Matter Monitoring for Diesel Engines.** The Permittee shall conduct source tests on diesel engines, EU IDs 20 and 21 (and engines no longer considered insignificant as set out by condition 6.3), to determine the concentration of particulate matter (PM) in the exhaust of the emission unit in accordance with this condition 7.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(i), 7/2/07]

- 7.1 Within six months of exceeding the criteria of conditions 7.2a or 7.2b, either
- a. conduct a PM source test according to requirements set out in Section 6; or
 - b. make repairs so that emissions no longer exceed the criteria of condition 7.2; to show that emissions are below those criteria, observe emissions as described in condition 2.1 under load conditions comparable to those when the criteria were exceeded.
- 7.2 Conduct the test according to condition 7.1 if
- a. 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity greater than 20 percent; or
 - b. for an emission unit with an exhaust stack diameter that is less than 18 inches, 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity that is greater than 15 percent and not more than 20 percent, unless the Department has waived this requirement in writing.
- 7.3 During each one-hour PM source test run, observe the exhaust for 60 minutes in accordance with Method 9 and calculate the highest average 6-minute opacity that was measured during each one-hour test run. Submit a copy of these observations with the source test report.
- 7.4 The automatic PM source test requirement in conditions 7.1 and 7.2 is waived for an emissions unit if a PM source test on that unit has shown compliance with the PM standard during this permit term.

8. **Particulate Matter Reporting for Diesel Engines.** The Permittee shall report as follows:

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04; 18 AAC 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(iii), 7/2/07]

8.1 Report under condition 64

- a. the results of any PM source test that exceeds the PM emissions limit; or
- b. if one of the criteria of condition 7.2 was exceeded and the Permittee did not comply with either condition 7.1a or 7.1b, this must be reported by the day following the day compliance with condition 7.1 was required;

8.2 Report observations in excess of the threshold of condition 7.2b within 30 days of the end of the month in which the observations occur;

8.3 In each stationary source operating report under condition 65, include

- a. the dates, EU ID(s), and results when an observed 18-minute average was greater than an applicable threshold in condition 7.2;
- b. a summary of the results of any PM testing under condition 7; and
- c. copies of any visible emissions observation results (opacity observations) greater than the thresholds of condition 7.2, if they were not already submitted.

Sulfur Compound Emission Standards Requirements

9. **Sulfur Compound Emissions.** In accordance with 18 AAC 50.055(c), the Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from EU IDs 1 – 4, 8 – 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 to exceed 500 ppm averaged over three hours.

[18 AAC 50.040(j) & 50.055(c), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(1), 7/2/07]

For Fuel Oil³-Fired Emission Units

- 9.1 The Permittee shall comply with the fuel sulfur content limit of 0.25 percent sulfur by weight as required by condition 13.⁴
- 9.2 The Permittee shall monitor, keep records, and report as required by conditions 13.2 through 13.5.

³ Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil, as defined in 40 C.F.R. 60.41b, effective 7/1/07.

⁴ Compliance with the fuel sulfur limit of condition 13 will assure compliance with the 500-ppm SO₂ emission limit of condition 9.

- 9.3 Report as excess emissions, in accordance with condition 64, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 9. When reporting under this condition, include the calculated SO₂ emissions in ppm using Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a).

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3) & c(6), 7/2/07]

For Fuel Gas⁵-Fired Emission Units

- 9.4 The Permittee shall comply with the fuel hydrogen sulfide content limit of 200-ppm hydrogen sulfide as required by condition 13.⁶
- 9.5 The Permittee shall monitor, keep records, and report as required by conditions 13.1, 13.4, and 13.5.
- 9.6 Report as excess emissions, in accordance with condition 64, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 9.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3) & c(6), 7/2/07]

Title I Permit Requirements

Ambient Air Quality Protection Limits

10. The Permittee shall not place a total cumulative rating of more than 12,000 hp of non-road engines upon the Tyonek Platform except as indicated in condition 11.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]

- 10.1 Maintain a written inventory for each non-road reciprocating internal combustion engine on-platform listing the following parameters: make, model, and rated capacity (BHp). Once each month calculate the total installed non-road engine capacity by summing the rated capacity of each unit on-platform.
- 10.2 Report for each month the total installed non-road engine capacity on-platform for each calendar month in the operating report required by condition 65.
- 10.3 Report under condition 64 whenever the non-road engine capacity limit of condition 10 is exceeded as determined by a calculation performed under condition 10.1.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a) & c(6), 7/2/07]

⁵ *Fuel gas* has the definition of “natural gas” taken from 40 C.F.R. 60.41c, effective 7/1/07.

⁶ Compliance with the fuel sulfur limit of condition 13 will assure compliance with the 500-ppm SO₂ emission limit of condition 9.

- 11.** The Permittee may increase the non-road engine cumulative hp limit in condition 10 upon written Department approval. To obtain approval, the Permittee shall submit a proposed threshold; and an ambient demonstration that demonstrates that the stationary source will still comply with the ambient air quality standards and increments for the following pollutants of concern: nitrogen dioxides, sulfur dioxide, and particulate matter at the proposed threshold. Submit the proposed threshold and the required ambient modeling demonstration to the Construction Permits Supervisor, Air Quality Division, 619 East Ship Creek, Suite 249, Anchorage, AK 99501.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]
[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a), 7/2/07]

Owner Requested Limits to Avoid Classification as PSD Major

- 12.** The Permittee shall limit the combined oxides of nitrogen (NO_x) emissions, expressed as nitrogen dioxide (NO₂), from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per 12-month period as follows:

- 12.1 Limit fuel consumption for these emission units such that the following equation holds true:

$$\frac{\left(0.45 \frac{\text{lb}}{\text{gal}}\right)(FC_{20,21}) + \left(0.62 \frac{\text{lb}}{\text{gal}}\right)(FC_{24,25}) + \left(0.58 \frac{\text{lb}}{\text{gal}}\right)(FC_{28}) + \left(0.51 \frac{\text{lb}}{\text{gal}}\right)(FC_{33,34})}{2000 \frac{\text{lb}}{\text{ton}}} \leq 20.2 \frac{\text{ton}}{\text{yr}} \text{ NO}_x$$

Where:

FC_{20, 21} = total fuel consumption per rolling 12-month period for EU IDs 20 and 21
FC_{24, 25} = total fuel consumption per rolling 12-month period for EU IDs 24 and 25
FC₂₈ = total fuel consumption per rolling 12-month period for EU ID 28
FC_{33, 34} = total fuel consumption per rolling 12-month period for EU IDs 33 and 34

- 12.2 Monitor the diesel fuel use for each emission unit. The fuel use shall be measured via a fuel meter with a minimum accuracy of plus or minus five percent, or estimated by measurement techniques and calculations approved by the Department.
- 12.3 Maintain records of the monthly (calendar) and rolling 12-month fuel use for each emission unit. Using the rolling 12-month fuel use, calculate and record the combined NO_x emissions from each emission unit using the equation in condition 12.1. Calculations shall be performed on a monthly (calendar) basis.
- 12.4 Monitor the monthly (calendar) and rolling 12-month hours of operation of each emission unit.
- 12.5 Maintain records of the monthly (calendar) and rolling 12-month hours of operation of each emission unit.

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- 12.6 If, during the period being reported, any one or more of the fuel meters for EU IDs 20, 21, 24, 25, 28, 33 and 34 did not function for any period of time when fuel is being supplied to the emission unit for the purpose of combustion, then:
- Using the monthly (calendar) and the rolling 12-month hours of operation, calculate and record the combined NO_x emissions from EU IDs 20, 21, 24, 25, 28, 33 and 34 using the maximum NO_x emission rates in lb/hr listed in Section 11.
 - Report the rolling 12-month consecutive NO_x emissions and the monthly hours (calendar) of operation for EU IDs 20, 21, 24, 25, 28, 33 and 34 in the operating report required by condition 65.
- 12.7 Report the combined 12-month consecutive NO_x emissions and the rolling 12-month fuel usage from EU IDs 20, 21, 24, 25, 28, 33 and 34 in the operating report required by condition 65.
- 12.8 Report as described in condition 64 any time the NO_x limit in condition 12 is exceeded.
- [Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]
[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a) & c(6), 7/2/07]
- 13.** The Permittee shall limit the sulfur content of gaseous and liquid fuels to 200-ppm hydrogen sulfide (H₂S) and 0.25 percent sulfur by weight, respectively.
- 13.1 Measure the H₂S content of the process or natural gas burned as fuel using ASTM D 4810-88, ASTM D 4913-89, or Gas Producers Association (GPA) method 2377-86 once every six months.
- 13.2 For each shipment of distillate fuel
- if the fuel grade requires a sulfur content less than 0.25 percent sulfur by weight, keep receipts that specify the fuel grade and amount; or
 - if the fuel grade does not require a sulfur content less than 0.25 percent by weight, keep receipts that specify the fuel grade and amount, and
 - test the fuel for sulfur content; or
 - obtain test results showing the sulfur content of the fuel from the supplier or refinery; the test results must include a statement signed by the supplier or refinery of what fuel they represent⁷.
- 13.3 Perform the fuel testing under condition 13.2b(i) by following an appropriate method listed in 18 AAC 50.035 or another method approved in writing by the Department.

⁷ Corrected this Title I provision by deleting reference to MR&R based on a fuel grade less than 0.5 percent sulfur. Since the sulfur limit is 0.25 percent, the sulfur content must be identified or a fuel grade of less than 0.25 percent.

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- 13.4 Maintain records of each H₂S content analysis of gaseous fuel obtained under condition 13.1, and records of the sulfur content of each distillate fuel delivery obtained under condition 13.2.
- 13.5 Report in each operating report required by condition 65, the results of each H₂S content analysis of gaseous fuel obtained under condition 13.1, and the sulfur content of each distillate fuel delivery obtained under condition 13.2.
- 13.6 Report as described in condition 64 any time the fuel H₂S concentration or sulfur content exceeds the limits of condition 13.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]
[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a) & c(6), 7/2/07]

14. The Permittee shall limit the natural gas consumption for:

- a. Solar Centaur T-4700 Turbines (EU IDs 1 and 2) to a combined use not to exceed 805 million standard cubic feet (MMscf) per 12-month period;
 - b. Glycol Heaters (EU IDs 10, 11, and 12) to a combined use not to exceed 195 MMscf per rolling 12-month period; and
 - c. Gas Production Flares (EU IDs 38 and 39) to a combined throughput not to exceed 252 MMscf per 12-month period⁸.
- 14.2 Monitor the natural gas consumption for EU IDs 1, 2, 10 through 12, 38, and 39. The fuel gas shall be measured via a fuel meter with a minimum accuracy of plus or minus five percent, or estimated by measurement techniques and calculations approved by the Department.
- 14.3 Maintain records of the monthly and 12-month combined natural gas consumption for EU IDs 1 and 2. Maintain records of the monthly and 12-month combined natural gas consumption for EU IDs 10 through 12. Maintain records of the monthly and 12-month combined natural gas consumption for EU IDs 38 and 39.
- 14.4 Report in the operating report required by condition 65, the monthly and rolling 12-month combined natural gas consumption for EU IDs 1 and 2; the monthly and rolling 12-month combined natural gas consumption for EU IDs 10 through 12; and the monthly and rolling 12-month combined natural gas consumption for EU IDs 38 and 39.
- 14.5 Report as described in condition 64 any time the natural gas consumption limits in condition 14 are exceeded.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]
[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a) & c(6), 7/2/07]

⁸ Corrected this Title I provision by deleting reference to the Well Test Flare (old EU ID 40) as the unit has been removed from the stationary source.

Best Available Control Technology (BACT) Limits for NO_x

- 15.** The Permittee shall operate the Solar Taurus 60 T-7300S Turbines, EU IDs 3 and 4, only in the dry low NO_x mode, except during low-load transient operations of start up and shut down.
- 15.1 When the turbine is operating in the low NO_x mode as set out in condition 15, limit NO_x emissions of each unit to no greater than 25 parts per million by volume, dry (ppmvd) at 15 percent O₂ and 6.2 lb/hr, expressed as NO₂, averaged over any three consecutive hours.
- 15.2 Conduct source tests on EU IDs 3 and 4 to ensure compliance with the NO_x BACT limit of condition 15.1 as set out by condition 29.1. Keep records and report as indicated in conditions 29.2 and 29.3.
- 15.3 Monitor for non-dry low NO_x mode operation, which is indicated by the presence of a P1 pilot flame⁹. Record the date, time, and duration for which the P1 pilot flame is present for EU IDs 3 and 4.
- 15.4 Monitor and record the date, time, and duration when either EU ID 3 or 4 is in transient operations of start up and shut down mode.
- 15.5 Report in each operating report required by condition 65, the date, time, duration, and emission unit number if either EU ID 3 or 4 is operating, but not in the low NO_x mode. Specify whether each non-dry low NO_x mode operation was during start up, shut down, or another activity. Submit a summary report of events resulting from the operation of EU ID 3 or 4 out of low NO_x mode.
- 15.6 Report as an excess emission as set out in condition 64:
- a. all other activities (i.e., other than start up and shut down) that result in operation out of the low NO_x mode for more than 6 minutes in any 3-hour period; and
 - b. if the source test results of condition 15.2 show an exceedance of the limit of condition 15.1.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]
[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a), 7/2/07]

Specific Operational Limits

- 16.** The Permittee shall operate and maintain the two Waukesha natural gas-fired generators (EU IDs 8 and 9) with air-fuel controllers and catalytic converters.

⁹ Corrected this Title I provision by replacing the word “absence” with “presence”; non-dry-low NO_x is indicated by a present flame.

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- 16.1 Certify in each operating report under condition 65 that each of these emission units were operated with air-fuel controllers and catalytic converters.
 - 16.2 Report under condition 64 if either of the units is operated without air-fuel controllers and catalytic converters.
 - 16.3 Within 18 months of the permit effective date, conduct a NO_x and diluent emission source test of EU IDs 8 and 9 at no less than three loads representing the normal operating range of that unit using methods listed in Section 6. Using the test results and operating parameters recorded during the test runs, determine the NO_x emission factors for EU IDs 8 and 9 expressed as gram/hp-hour and lb/hour as listed in Section 11, Table C, columns C and E, respectively. Attach the determination to the emission source test report.

[Permit to Operate No. 9623-AA007, 4/14/97]
[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a) & c(6), 7/2/07]

Insignificant Emission Units

17. For EU IDs 24, 25, 28, 33, and 34 and for emission units at the stationary source that are insignificant as defined in 18 AAC 50.326(d)-(i) that are not listed in this permit, the following apply:
 - 17.1 The Permittee shall submit the compliance certifications of condition 65.4 based on reasonable inquiry;
 - 17.2 The Permittee shall comply with the requirements of condition 43;
 - 17.3 The Permittee shall report in the operating report required by condition 65 if an emission unit is insignificant because of actual emissions less than the thresholds of 18 AAC 50.326(e) and actual emissions become greater than any of those thresholds;
 - 17.4 No other monitoring, recordkeeping or reporting is required, except as indicated in conditions 12 and 13.
- [18 AAC 50.346(b)(4), 11/9/08]
18. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, fuel-burning equipment, or an incinerator to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.
- [18 AAC 50.050(a)(2) & 50.055(a)(1), 7/25/08]
19. The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel-burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.055(b)(1), 7/25/08]

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- 20.** The Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from an industrial process or fuel-burning equipment, to exceed 500 ppm averaged over three hours.

[18 AAC 50.055(c), 7/25/08]

Section 4. Federal Requirements

Emission Units Subject to Federal New Source Performance Standards (NSPS), Subpart A

- 21. NSPS Subpart A Notification¹⁰.** For any affected facility¹¹ or existing facility¹² regulated under NSPS requirements in 40 C.F.R. 60, the Permittee shall furnish the Department and EPA written or electronic notification of:

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.7(a) & 60.15(d), Subpart A, 7/1/07]

- 21.1 the date that construction or reconstruction of an affected facility commences postmarked no later than 30 days after such date;
[40 C.F.R. 60.7(a)(1), Subpart A, 7/1/07]
- 21.2 the actual date of initial startup of an affected facility postmarked within 15 days after such date;
[40 C.F.R. 60.7(a)(3), Subpart A, 7/1/07]
- 21.3 any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies unless that change is specifically exempted under an applicable subpart or in 40 C.F.R. 60.14(e), postmarked 60 days or as soon as practicable before the change is commenced and shall include:
- a. information describing the precise nature of the change,
 - b. present and proposed emission control systems,
 - c. productive capacity of the facility before and after the change, and
 - d. the expected completion date of the change; and
[40 C.F.R. 60.7(a)(4), Subpart A, 7/1/07]
- 21.4 any proposed replacement of an existing facility, for which the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

[40 C.F.R. 60.15(d), 7/1/07]

¹⁰ All requirements are one-time only in nature and have already been satisfied absent activities initiated during the permit term that constitute modification or reconstruction of an existing facility or construction and initial startup of an affected facility. The requirements apply as indicated unless otherwise specified by an applicable subpart.

¹¹ *Affected facility* means, with reference to a stationary source, any apparatus to which a standard applies, as defined in 40 C.F.R. 60.2, effective 7/1/07.

¹² *Existing facility* means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type, as defined in 40 C.F.R. 60.2, effective 7/1/07.

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- a. the name and address of owner or operator,
 - b. the location of the existing facility,
 - c. a brief description of the existing facility and the components that are to be replaced,
 - d. a description of the existing and proposed air pollution control equipment,
 - e. an estimate of the fixed capital cost of the replacements, and of constructing a comparable entirely new facility,
 - f. the estimated life of the existing facility after the replacements, and
 - g. a discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

- 22. NSPS Subpart A Startup, Shutdown, & Malfunction Requirements.** The Permittee shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of EU ID 1 – 4, any malfunctions of associated air-pollution control equipment, or any periods during which a continuous monitoring system or monitoring device for EU IDs 1 – 4 is inoperative.

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.7(b), Subpart A, 7/1/07]

- 23. NSPS Subpart A Excess Emissions and Monitoring Systems Performance Report.** Except as provided for in condition 24, the Permittee shall submit to the Department and to EPA a written "excess emissions and monitoring systems performance report " (EEMSP)¹³ as described in this condition for EU IDs 1 – 4. Except as provided for in condition 30.4, submit the EEMSP reports to EPA semiannually, postmarked by the 30th day following the end of each 6-month period.

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.7(c), Subpart A, 7/1/07]

- 23.1 The magnitude of excess emissions computed in accordance with 40 C.F.R. 60.13(h), any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.

[40 C.F.R. 60.7(c)(1), Subpart A, 7/1/07]

- 23.2 Specific identification of each period of excess emissions that occurred during startup, shutdown, and malfunction of EU IDs 1 and 2; the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

[40 C.F.R. 60.7(c)(2), Subpart A, 7/1/07]

¹³ The federal EEMSP report is not the same as the State excess emission report required by condition 64.

- 24. NSPS Subpart A Summary Report Form.** Except as provided for in condition 30.4, submit to the Department and to EPA a "summary report form"¹⁴ in the format shown in Figure 11 of 40 C.F.R. 60.7 for each pollutant monitored for EU IDs 1 – 4 as follows:

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.7(d), Subpart A, 7/1/07]

- 24.1 If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, submit a summary report form **instead of** the EEMSP report described in condition 23, otherwise

[40 C.F.R. 60.7(d)(1), Subpart A, 7/1/07]

- 24.2 Submit a summary report form **along with** the EEMSP described in condition 23.

[40 C.F.R. 60.7(d)(2), Subpart A, 7/1/07]

- 25. NSPS Subpart A Performance (Source) Tests¹⁵.** The Permittee shall conduct performance tests on any affected facility within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup, or at such other times specified in 40 C.F.R. 60, and at such other times as may be required by EPA, and shall provide the Department and EPA with a written report of the results of such performance test(s). Tests shall be conducted according to Section 6 of this permit and as outlined in 40 C.F.R. 60.8(a) through (e). The Permittee shall:

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.8(a), Subpart A, 7/1/07]

- 25.1 Conduct source tests and reduce data as set out in 40 C.F.R. 60.8(b), and provide the Department copies of any EPA waivers or approvals of alternative methods.

[40 C.F.R. 60.8(b), Subpart A, 7/1/07]

- 25.2 Conduct source tests under conditions specified by EPA to be based on representative performance of EU IDs 1 – 4.

[40 C.F.R. 60.8(c), Subpart A, 7/1/07]

- 25.3 Notify the Department and EPA at least 30 days in advance of the source test.

[40 C.F.R. 60.8(d), Subpart A, 7/1/07]

- 25.4 Provide adequate sampling ports, safe sampling platform(s), safe access to sampling platform(s), and utilities for sampling and testing equipment.

[40 C.F.R. 60.8(e), Subpart A, 7/1/07]

¹⁴ See Summary Report form in Attachment A of the Statement of Basis.

¹⁵ Initial performance tests for Subpart GG turbines, EU IDs 1 – 4, have already been satisfied. The requirements apply as indicated unless otherwise specified by an applicable subpart.

- 26. NSPS Subpart A Good Air Pollution Control Practice.** At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate EU IDs 1 – 4 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. The Administrator will determine whether acceptable operating and maintenance procedures are being used based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspections of EU IDs 1 – 4.

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.11(d), Subpart A, 7/1/07]

- 27. NSPS Subpart A Credible Evidence.** For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of the standards set forth in conditions 29 and/or 30, nothing in 40 C.F.R. Part 60 shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether EU IDs 1 – 4 would have been in compliance with applicable requirements of 40 C.F.R. Part 60 if the appropriate performance or compliance test or procedure had been performed.

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.11(g), Subpart A, 7/1/07]

- 28. NSPS Subpart A Concealment of Emissions.** The Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of a standard set forth in conditions 29 and/or 30. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.12, Subpart A, 7/1/07]

Turbines Subject to NSPS Subpart GG, EU IDs 1 – 4

- 29. NSPS Subpart GG NO_x Standard.** The Permittee shall not allow the exhaust gas concentration of NO_x from EU IDs 1 and 2 to exceed 165 ppmv at 15 percent O₂ dry exhaust basis and from EU IDs 3 and 4 to exceed 181 ppmv at 15 percent O₂ dry exhaust basis.

[18 AAC 50.040(a)(2)(V), 7/25/08]
[40 C.F.R. 60.332(a)(2) & (d), Subpart GG, 7/1/07]

- a. **Waivers.** The Permittee shall provide to the Department a written copy of any U.S. EPA granted waiver of the federal emission standards, recordkeeping, monitoring, performance testing, or reporting requirements, or approved custom monitoring schedules upon request by the Department. The Permittee shall keep a copy of each U.S. EPA issued monitoring waiver or custom monitoring schedule with the permit.

29.1 Monitoring.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3)(i) & (c)(6), 7/2/07]

- a. Periodic Testing. For each turbine subject to condition 29 that operates for 400 hours or more in any 12-month period during the life of this permit, the Permittee shall satisfy either conditions 29.1a(i) or 29.1a(ii).
 - (i) For existing turbines whose latest emissions source testing was certified as operating at less than or equal to 90 percent of the limits shown in condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4), the Permittee shall conduct a NO_x and O₂ source test under 40 C.F.R. 60, Appendix A, Method 20, or Method 7E and either Method 3 or 3A, within the first applicable criteria below in the noted timeframe no later than the permit expiration date except as set out in conditions 29.1a(i)(C) and 29.1a(ii):
 - (A) Within 5 years of the latest performance test, or
 - (B) Within 1 year of the date of issue of this permit if the last source test occurred greater than five years prior to issuance of this permit and the 400 hour threshold was triggered within 6 months of the permit issue date, or
 - (C) Within 1 year after exceeding 400 hours of operation in a 12-month period if the last source test occurred greater than 5 years prior to the exceedance.
 - (ii) For existing turbines whose latest emissions source testing was certified as operating at greater than 90 percent of the limits shown in condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4), the Permittee shall conduct a NO_x and O₂ source test under 40 C.F.R. 60, Appendix A, Method 20, or Method 7E and either Method 3 or 3A, annually until two consecutive tests show performance results certified at less than or equal to 90 percent of the limits of condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4).
- b. Substituting Test Data. The Permittee may use a Method 20, or Method 7E and either EPA Method 3 or 3A, test under condition 29.1a performed on only one of a group of turbines to satisfy the requirements of those conditions for the other turbines in the group if
 - (i) The Permittee demonstrates that test results are less than or equal to 90 percent of the emission limits of condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4), and are projected under condition 29.1c to be less than or equal to 90 percent of the limit at maximum load;

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- (ii) For any source test done after the issuance date of this permit, the Permittee identifies in a source test plan under condition 57
 - (A) the turbine to be tested;
 - (B) the other turbines in the group that are to be represented by the test; and
 - (C) why the turbine to be tested is representative, including that each turbine in the group
 - (1) is located at a stationary source operated and maintained by the Permittee;
 - (2) is tested under close to identical ambient conditions;
 - (3) is the same make and model and has identical injectors and combustor;
 - (4) uses the same fuel type from the same source.
 - (iii) The Permittee may not use substitute test results to represent emissions from a turbine or group of turbines if that turbine or group of turbines is operating at greater than 90 percent of the emission limits of condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4).

c. Load.

- (i) The Permittee shall conduct all tests under condition 29.1 in accordance with 40 C.F.R. 60.335, except as otherwise approved in writing by the Department, or by EPA if the circumstances at the time of the EPA approval are still valid. For the highest load condition, if it is not possible to operate the turbine during the test at maximum load, the Permittee will test the turbine when operating at the highest load achievable by the turbine under the ambient and stationary source operating conditions in effect at the time of the test.
- (ii) The Permittee shall demonstrate in the source test plan for any test performed after the issue date of this permit whether the test is scheduled when maximum NO_x emissions are expected.
- (iii) If the highest operating rate tested is less than the maximum load of the tested turbine or another turbine represented by the test data,
 - (A) for each such turbine the Permittee shall provide to the Department as an attachment to the source test report

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- (1) additional test information from the manufacturer or from previous testing of units in the group of turbines; if using previous testing of the group of turbines, the information must include all available test data for the turbines in the group, and
 - (2) a demonstration based on the additional test information that projects the test results from condition 29.1 to predict the highest load at which emissions will comply with the limits in condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4);
 - (B) the Permittee shall not operate any turbine represented by the test data at loads for which the Permittee's demonstration predicts that emissions will exceed the limits of condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4);
 - (C) the Permittee shall comply with a written finding prepared by the Department that
 - (1) the information is inadequate for the Department to reasonably conclude that compliance is assured at any load greater than the test load, and that the Permittee must not exceed the test load;
 - (2) the highest load at which the information is adequate for the Department to reasonably conclude that compliance assured is less than maximum load, and the Permittee must not exceed the highest load at which compliance is predicted, or
 - (3) the Permittee must retest during a period of greater expected demand on the turbine; and
 - (D) the Permittee may revise a load limit by submitting results of a more recent Method 20 test done at a higher load, and, if necessary, the accompanying information and demonstration described in condition 29.1c(iii)(A); the new limit is subject to any new Department finding under condition 29.1c(iii)(C).
 - (iv) In order to perform a Method 20 emission test, the Permittee may operate a turbine at a higher load than that prescribed by condition 29.1c(iii).
 - (v) For the purposes of conditions 29.1 through 29.3, maximum load means the hourly average load that is the smallest of

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- (A) 100 percent of manufacturer's design capacity of the gas turbine at ISO standard day conditions;
 - (B) the highest load allowed by an enforceable condition that applies to the turbine; or
 - (C) the highest load possible considering permanent physical restraints on the turbine or the equipment which it powers.

29.2 Recordkeeping.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3)(ii) & (c)(6), 7/2/07]

- a. The Permittee shall comply with the following for each turbine for which a demonstration under condition 29.1c(iii) does not show compliance with the limits of condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4) at maximum load.
 - (i) The Permittee shall keep records of
 - (A) load; or
 - (B) as approved by the Department, surrogate measurements for load and the method for calculating load from those measurements.
 - (ii) Records in condition 29.2a shall be hourly or otherwise as approved by the Department.
 - (iii) Within one month after submitting a demonstration under condition 29.1c(iii)(A)(2) that predicts that the highest load at which emissions will comply is less than maximum load, or within one month of a Department finding under condition 29.1c(iii)(C), whichever is earlier, the Permittee shall propose for Department approval how they will measure load or load surrogates, and shall propose and comply with a schedule for installing any necessary equipment and beginning monitoring.
- b. For any turbine subject to condition 29 that will operate less than 400 hours in any 12 consecutive months, the Permittee shall keep monthly records of the hours of operation.

29.3 Reporting.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii) & (c)(6), 7/2/07]

- a. In each stationary source operating report under condition 65, the Permittee shall list for each turbine tested or represented by testing at less than maximum load and for which the Permittee must limit load under condition 29.1c(iii)

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- (i) the load limit;
 - (ii) the turbine identification; and
 - (iii) the highest load recorded under condition 29.2a during the period covered by the operating report.
- b. In each stationary source operating report under condition 65 for each turbine for which condition 29.1 has not been satisfied because the turbine normally operates less than 400 hours in any 12 consecutive months, the Permittee shall identify
- (i) the turbine;
 - (ii) the highest number of operating hours for any 12 consecutive months ending during the period covered by the report.
- c. The Permittee shall report under condition 64 if
- (i) a test result exceeds the emission standard;
 - (ii) Method 20, or Method 7E and either Method 3 or 3A, testing is required under condition 29.1a(i) or 29.1a(ii) but not performed, or
 - (iii) the turbine was operated at a load exceeding that allowed by conditions 29.1c(iii)(B) and 29.1c(iii)(C); exceeding a load limit is deemed a single violation rather than a multiple violation of both monitoring and the underlying emission limit.

[18 AAC 50.220(a) - (c), 10/1/04; 18 AAC 50.040(a)(1), 7/25/08]
[40 C.F.R. 60.8(b), Subpart A, 7/1/07]

30. NSPS Subpart GG Sulfur Standard. The Permittee shall not allow the sulfur content for the fuel burned in EU IDs 1 – 4 to exceed 0.8 percent by weight.

[18 AAC 50.040(a)(2)(V), 7/25/08]
[40 C.F.R. 60.333(b), Subpart GG, 7/1/07]

30.1 Monitoring. Monitor compliance with the standards listed in this condition as follows:

[18 AAC 50.040(a)(2)(V), 7/25/08]
[40 C.F.R. 60.334 & 60.335, Subpart GG, 7/1/07]

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- a. Monitor the total sulfur content of the fuel being fired in the turbine, except as provided in condition 30.1b. The sulfur content of the fuel must be determined using total sulfur methods described in 40 C.F.R. 60.335(b)(10) and condition 30.2. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084–82, 94, D5504–01, D6228–98, or Gas Processors Association Standard 2377–86, which measure the major sulfur compounds may be used.
[40 C.F.R. 60.334(h)(1), Subpart GG, 7/1/07]
- b. The owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 C.F.R. 60.331(u), regardless of whether an existing custom schedule approved by the Administrator requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration¹⁶:
- (i) The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or
- (ii) Representative fuel sampling data, which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in 40 C.F.R. 75, Appendix D, Section 2.3.1.4 or 2.3.2.4 is required.
[40 C.F.R. 60.334(h)(3), Subpart GG, 7/1/07]
- c. For any turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and for which a custom fuel monitoring schedule has previously been approved, the owner or operator may, without submitting a special petition to the Administrator, continue monitoring on this schedule.
[40 C.F.R. 60.334(h)(4), Subpart GG, 7/1/07]
- d. The frequency of determining the sulfur content of the fuel shall be as follows:
- (i) Gaseous fuel. For owners and operators that elect not to demonstrate sulfur content using options in condition 30.1b, and for which the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel shall be determined and recorded once per unit operating day.

¹⁶ The Permittee submitted a certified statement to the Department dated 1/26/09 indicating that the fuel gas combusted at the stationary source meets the definition of natural gas in 40 C.F.R. 60.331(u), pursuant to 40 C.F.R. 60.334(h)(3). Periodic fuel sulfur monitoring under condition 30.1a and reporting under conditions 23, 24, and 30.4 do not apply to Subpart GG turbines that have demonstrated that natural gas fuel meets the definition of 40 C.F.R. 60.331(u) as set out by condition 30.1b. Per 40 C.F.R. 60.334(i)(3)(i), a custom sulfur monitoring schedule under 60.334(i)(3)(ii)(A) is acceptable without prior Administrative approval.

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- (ii) Custom schedules. Notwithstanding the requirements of condition 30.1d(i), operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in 40 C.F.R. 60.334(i)(3)(i) and (i)(3)(ii), custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in condition 30. The two custom sulfur monitoring schedules set forth in 40 C.F.R. 60.334(i)(3)(i)(A) through (D) and 60.334(i)(3)(ii) are acceptable without prior Administrative approval.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 60.334(i), Subpart GG, 7/1/07]

30.2 Test Methods and Procedures. If the owner or operator is required under 40 C.F.R. 60.334(i) to periodically determine the sulfur content of the fuel combusted in the turbine, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using:

- a. For gaseous fuels, ASTM D1072-80, 90; D3246-81, 92, 96; D4468-85; or D6667-01. The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Administrator.
- b. The fuel analyses required under condition 30.2a may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 60.335(b)(10 & 11), Subpart GG, 7/1/07]

30.3 Recordkeeping. Keep records as required by condition 30.1 and 30.2, and in accordance with condition 60.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/2/07]

30.4 Reporting. For each affected unit that periodically determines the fuel sulfur content under condition 30.1a, the owner or operator shall submit reports of excess emissions and monitor downtime, in accordance with 40 C.F.R. 60.7(c) as summarized in condition 23 except where otherwise approved by a custom fuel monitoring schedule. Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction as described by 40 C.F.R. 60.334(j)(2).

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 60.334(j), Subpart GG, 7/1/07]

Emission Units Subject to Federal National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 C.F.R. 63 Subparts A and HH, EU IDs 40 – 42

- 31. NESHAPs Subpart A and HH General Provisions.** The Permittee shall comply with the general standards of Subparts A and HH in accordance with applicable requirements of 40 C.F.R. 63.764 and the provisions for applicability of Subpart A in Subpart HH (Appendix to Subpart HH, Table 2).

[18 AAC 50.040(c)(1 & 13) & (j), 7/25/08]

[40 C.F.R. 63, Subpart A, 7/2/07]

[40 C.F.R. 63.764 & Appendix to Subpart HH, Table 2, 7/16/07]

- 32.** Beginning on January 5, 2009, the Permittee shall maintain a record of the actual average emissions of benzene from the glycol dehydration units (EU IDs 40 – 42) vented to the atmosphere to demonstrate emissions are less than 0.90 megagram per year, as determined by the procedures specified in 40 C.F.R. 63.772(b)(2).

[18 AAC 50.040(c)(13) & (j), 7/25/08; 18 AAC 50.326(j), 12/1/04]

[40 C.F.R. 63.764(e)(1)(ii), 7/16/07]

- 32.1 The Permittee shall determine actual average benzene emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration units and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” (GRI-95/0368.1).

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]

[40 C.F.R. 63.772(b)(2)(i), 7/16/07]

- 32.2 The Permittee shall maintain records to show the actual average benzene emissions (in terms of benzene emissions per year).

18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]

[40 C.F.R. 63.774(d)(1)(ii), 7/16/07]

Section 5. General Conditions

Standard Terms and Conditions

33. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (e), 11/9/08]

34. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and re-issuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (f), 11/9/08]

35. The permit does not convey any property rights of any sort, nor any exclusive privilege.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (g), 11/9/08]

36. **Administration Fees.** The Permittee shall pay to the Department all assessed permit administration fees. Administration fee rates are set out in 18 AAC 50.400-405.

[18 AAC 50.326(j)(1), 12/1/04; 18 AAC 50.400, 7/25/08; 18 AAC 50.403, 12/3/05; 18 AAC 50.405, 1/29/05]
[AS 37.10.052(b), 11/04; AS 46.14.240, 6/7/03]

37. **Assessable Emissions.** The Permittee shall pay to the Department an annual emission fee based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year (TPY). The quantity for which fees will be assessed is the lesser of

37.1 the stationary source's assessable potential to emit of 695 TPY; or

37.2 the stationary source's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during the most recent calendar year or another 12-month period approved in writing by the Department, when demonstrated by

- a. an enforceable test method described in 18 AAC 50.220;
- b. material balance calculations;
- c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or
- d. other methods and calculations approved by the Department.

[18 AAC 50.040(j)(3) 7/25/08; 18 AAC 50.326(j)(1), 12/1/04; 18 AAC 50.035 & 50.346(b)(1), 11/9/08;
18 AAC 50.410, 12/14/06; 18 AAC 50.420, 1/29/05]
[40 C.F.R. 71.5(c)(3)(ii), 7/2/07]

38. Assessable Emission Estimates. Emission fees will be assessed as follows:

38.1 no later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 410 Willoughby Ave., Juneau, AK 99801-1795; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or

38.2 if no estimate is received on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in condition 37.1.

[18 AAC 50.040(j)(3), 7/25/08; 18 AAC 50.326(j)(1), 12/1/04; 18 AAC 50.346(b)(1), 11/9/08,
18 AAC 50.410, 12/14/06; 18 AAC 50.420, 1/29/05]
[40 C.F.R. 71.5(c)(3)(ii), 7/2/07]

39. Good Air Pollution Control Practice. The Permittee shall do the following for EU IDs 8 – 12, 20, 21, and 37 – 39:

39.1 perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;

39.2 keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format; and

39.3 keep a copy of either the manufacturer's or the operator's maintenance procedures.

[18 AAC 50.030, 11/9/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.346(b)(5), 11/9/08]

40. Dilution. The Permittee shall not dilute emissions with air to comply with this permit. Monitoring shall consist of an annual certification that the Permittee does not dilute emissions to comply with this permit.

[18 AAC 50.045(a), 10/1/04]

41. Reasonable Precautions to Prevent Fugitive Dust. A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.

[18 AAC 50.045(d), 10/1/04; 18 AAC 50.040(e), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04;
18 AAC 50.346(c), 11/9/08]

41.1 The Permittee shall keep records of

a. complaints received by the Permittee and complaints received by the Department and conveyed to the Permittee; and

b. any additional precautions that are taken

(i) to address complaints described in condition 41.1 or to address the results of Department inspections that found potential problems; and

(ii) to prevent future dust problems.

41.2 The Permittee shall report according to condition 43.

- 42. Stack Injection.** The Permittee shall not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack at a source constructed or modified after November 1, 1982, except as authorized by a construction permit, Title V permit, or air quality control permit issued before October 1, 2004.

[18 AAC 50.055(g), 7/25/08]

- 43. Air Pollution Prohibited.** No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.

[18 AAC 50.110, 5/26/72; 18 AAC 50.040(e), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.346(a), 11/9/08]
[40 C.F.R. 71.6(a)(3), 7/2/07]

43.1 Monitoring, Recordkeeping, and Reporting for Air Pollution Prohibited:

- a. If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to condition 64.
- b. As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of condition 43.

43.2 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

- a. after an investigation because of a complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of condition 43; or
- b. the Department notifies the Permittee that it has found a violation of condition 43.

43.3 The Permittee shall keep records of

- a. the date, time, and nature of all emissions complaints received;
- b. the name of the person or persons that complained, if known;
- c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of condition 43; and
- d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.

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- 43.4 With each stationary source operating report under condition 65, the Permittee shall include a brief summary report which must include
- the number of complaints received;
 - the number of times the Permittee or the Department found corrective action necessary;
 - the number of times action was taken on a complaint within 24 hours; and
 - the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.
- 43.5 The Permittee shall notify the Department of a complaint that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.
- 44. Technology-Based Emission Standard.** If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235(d), causes emissions in excess of a technology-based emission standard¹⁷ listed in conditions 15, 29, 30, 32, or 46 (refrigerants), the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard. Excess emissions reporting under condition 64 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 64.
- [18 AAC 50.235(a), 10/1/04; 18 AAC 50.326(j)(4), 12/1/04; 18 AAC 50.040(j)(4), 7/25/08]
[40 C.F.R. 71.6(c)(6), 7/2/07]
- 45. Asbestos NESHAP.** The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145, 61.150, and 61.152 of Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A.
- [18 AAC 50.040(b)(1) & (2)(F), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 61, Subparts A & M, & Appendix A, 5/16/07]
- 46. Refrigerant Recycling and Disposal.** The Permittee shall comply with applicable standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F.
- [18 AAC 50.040(d), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 82, Subpart F, 7/1/07]

¹⁷ *Technology-based emission standard* means a best available control technology standard (BACT); a lowest achievable emission rate standard (LAER); a maximum achievable control technology standard established under 40 C.F.R. 63, Subpart B, adopted by reference in 18 AAC 50.040(c); a standard adopted by reference in 18 AAC 50.040(a) or (c); and any other similar standard for which the stringency of the standard is based on determinations of what is technologically feasible, considering relevant factors.

NESHAPs Applicability Determinations

47. The Permittee shall determine rule applicability and designation of affected sources under National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories (40 C.F.R. 63) in accordance with the procedures described in 40 C.F.R. 63.1(b) and 63.10(b)(3). If a source becomes affected by an applicable subpart of 40 C.F.R. 63, Permittee shall comply with such standard by the compliance date established by the Administrator in the applicable subpart, in accordance with 40 C.F.R. 63.6(c).

- 47.1 If the Permittee determines that the source is not subject to a relevant standard or other requirement established under 40 C.F.R. 63, the Permittee must keep a record of the applicability determination on site for a period of 5 years after the determination or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the Permittee believes the source is unaffected. The analysis (or other information) must be sufficiently detailed to allow the Department to make a finding about the source's applicability status with regard to the relevant standard or other requirement.

[18 AAC 50.040(c)(1)(A) & (E) & 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/2/07; 40 C.F.R. 63.1(b), 63.6(c)(1), & 63.10(b)(3), 7/16/07]

Halon Prohibitions, 40 C.F.R. 82

48. The Permittee shall comply with the applicable prohibitions set out in 40 C.F.R. 82.174 (Protection of Stratospheric Ozone Subpart G – Significant New Alternatives Policy Program).

[18 AAC 50.040(d), 7/25/08]
[40 C.F.R. 82.174 (b) - (d), 7/1/07]

- 48.1 Do not use a substitute which a person knows or has reason to know was manufactured, processed, or imported in violation of the regulations of 40 C.F.R. 82 Subpart G or knows or has reason to know was manufactured, processed, or imported in violation of any use restriction in the acceptability determination, after the effective date of any rulemaking imposing such restrictions.

- 48.2 Do not use a substitute without adhering to any use restrictions set by the acceptability decision, after the effective date of any rulemaking imposing such restrictions.

- 48.3 Do not use a substitute after the effective date of any rulemaking adding such substitute to the list of unacceptable substitutes.

49. The Permittee shall comply with the following prohibitions set out in 40 C.F.R. 82.270.

[18 AAC 50.040(d), 7/25/08]
[40 C.F.R. 82.270 (b)-(f), 7/1/07]

49.1 No person testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training may knowingly vent or otherwise release into the environment any halons used in such equipment, as follows:

- a. De minimis¹⁸ releases associated with good faith attempts to recycle or recover halon are not subject to this prohibition.
- b. Release of residual halon contained in fully discharged total flooding fire extinguishing systems would be considered a de minimis release associated with good faith attempts to recycle or recover halon.
- c. Release of halons during testing of fire extinguishing systems is not subject to this prohibition if the following four conditions are met:
 - (i) systems or equipment employing suitable alternative fire extinguishing agents are not available;
 - (ii) system or equipment testing requiring release of extinguishing agent is essential to demonstrate system or equipment functionality;
 - (iii) failure of the system or equipment would pose great risk to human safety or the environment; and
 - (iv) a simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.
- d. Releases of halons associated with research and development of halon alternatives, and releases of halons necessary during analytical determination of halon purity using established laboratory practices are exempt from this prohibition.
- e. This prohibition does not apply to qualification and development testing during the design and development process of halon-containing systems or equipment when such tests are essential to demonstrate system or equipment functionality and when a suitable simulant agent cannot be used in place of the halon for technical reasons.
- f. This prohibition does not apply to the emergency release of halons for the legitimate purpose of fire extinguishing, explosion inertion, or other emergency applications for which the equipment or systems were designed.

¹⁸ Legal term meaning “of minimum importance.”

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- 49.2 Organizations that employ technicians who test, maintain, service, repair or dispose of halon-containing equipment shall take appropriate steps to ensure that technicians hired on or before April 6, 1998 will be trained regarding halon emissions reduction by September 1, 1998. Technicians hired after April 6, 1998 shall be trained regarding halon emissions reduction within 30 days of hiring, or by September 1, 1998, whichever is later.
- 49.3 No person shall dispose of halon- containing equipment except by sending it for halon recovery to a manufacturer operating in accordance with NFPA¹⁹ 10 and NFPA 12A standards, a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards or a recycler operating in accordance with NFPA 10 and NFPA 12A standards. This provision does not apply to ancillary system devices such as electrical detection control components which are not necessary to the safe and secure containment of the halon within the equipment, to fully discharged total flooding systems, or to equipment containing only de minimis quantities of halons.
- 49.4 No person shall dispose of halon except by sending it for recycling to a recycler operating in accordance with NFPA 10 and NFPA 12A standards, or by arranging for its destruction using one of the following controlled processes:
- a. Liquid injection incineration;
 - b. Reactor cracking;
 - c. Gaseous/fume oxidation;
 - d. Rotary kiln incineration;
 - e. Cement kiln;
 - f. Radio frequency plasma destruction; or
 - g. An EPA-approved destruction technology that achieves a destruction efficiency of 98 percent or greater.
- 49.5 No owner of halon-containing equipment shall allow halon release to occur as a result of failure to maintain such equipment.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3), 7/2/07]

Open Burning Requirements

- 50.** The Permittee shall not conduct open burning at the stationary source.

[18 AAC 50.065, 1/18/97; 18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3), 7/2/07]

¹⁹ National Fire Protection Association

Section 6. General Source Testing and Monitoring Requirements

- 51. Requested Source Tests.** In addition to any source testing explicitly required by the permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.

[18 AAC 50.220(a), 10/1/0; 18 AAC 50.345(a) & (k), 11/9/08]

- 52. Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing

[18 AAC 50.220(b), 10/1/04]

52.1 at a point or points that characterize the actual discharge into the ambient air; and

52.2 at the maximum rated burning or operating capacity of the emission unit or another rate determined by the Department to characterize the actual discharge into the ambient air.

- 53. Reference Test Methods.** The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:

53.1 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.

[18 AAC 50.220(c)(1)(A), 10/1/04; 18 AAC 50.040(a), 7/25/08]
[40 C.F.R. 60, 7/1/07]

53.2 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(b) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 61.

[18 AAC 50.040(b), 7/25/08; 18 AAC 50.220(c)(1)(B), 10/1/04]
[40 C.F.R. 61, 5/16/07]

53.3 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(c) must be conducted in accordance with the source test methods and procedures specified in 40 C.F.R. 63.

[18 AAC 50.040(c), 7/25/08; 18 AAC 50.220(c)(1)(C), 10/1/04]
[40 C.F.R. 63, 7/16/07]

53.4 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9 and may use the form in Section 12 to record data.

[18 AAC 50.030, 11/9/08; 18 AAC 50.220(c)(1)(D), 10/1/04]

53.5 Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.

[18 AAC 50.040(a)(3), 7/25/08; 18 AAC 50.220(c)(1)(E), 10/1/04]

[40 C.F.R. 60, Appendix A, 7/1/07]

53.6 Source testing for emissions of PM-10 must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M, Methods 201 or 201A and 202.

[18 AAC 50.035(b)(2), 11/9/08; 18 AAC 50.220(c)(1)(F), 10/1/04]

[40 C.F.R. 51, Appendix M, 7/1/07]

53.7 Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63, Appendix A, Method 301.

[18 AAC 50.040(c)(24), 7/25/08; 18 AAC 50.220(c)(2), 10/1/04]

[40 C.F.R. 63, Appendix A Method 301, 7/16/07]

54. **Excess Air Requirements.** To determine compliance with this permit, standard exhaust gas volumes must include only the volume of gases formed from the theoretical combustion of the fuel, plus the excess air volume normal for the specific emission unit type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).

[18 AAC 50.220(c)(3), 10/1/04; 18 AAC 50.990(102), 7/25/08]

55. **Test Exemption.** The Permittee is not required to comply with conditions 57, 58 and 59 when the exhaust is observed for visible emissions by Method 9 Plan (condition 2.1) or Smoke/No Smoke Plan (condition 2.2).

[18 AAC 50.345(a), 11/9/08]

56. **Test Deadline Extension.** The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.

[18 AAC 50.345(a) & (l), 11/9/08]

57. **Test Plans.** Except as provided in condition 55, before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance and must specify how the emission unit will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under condition 51 and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

[18 AAC 50.345(a) & (m), 11/9/08]

58. **Test Notification.** Except as provided in condition 55, at least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.

[18 AAC 50.345(a) & (n), 11/9/08]

59. Test Reports. Except as provided in condition 55, within 60 days after completing a source test, the Permittee shall submit two copies of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall additionally certify the results in the manner set out in condition 61. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

[18 AAC 50.345(a) & (o), 11/9/08]

Section 7. General Recordkeeping and Reporting Requirements

Recordkeeping Requirements

- 60. Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:

[18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 60.7(f), Subpart A, 7/1/07; 40 C.F.R. 71.6(a)(3)(ii)(B), 7/2/07]

- 60.1 copies of all reports and certifications submitted pursuant to this section of the permit; and
- 60.2 records of all monitoring required by this permit, and information about the monitoring including:
 - a. the date, place, 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.

Reporting Requirements

- 61. Certification.** The Permittee shall certify any permit application, report, affirmation, or compliance certification, or other documents submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.” Excess emission reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.

- 61.1 The Department may accept an electronic signature on an electronic application or other electronic record required by the Department if
 - a. a certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and
 - b. the person providing the electronic signature has made an agreement, with the certifying authority described in condition 61.1a, that the person accepts or agrees to be bound by an electronic record executed or adopted with that signature.

[18 AAC 50.345(a) & (j), 11/9/08; 18 AAC 50.205, 10/1/04; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/2/07]

62. Submittals. Unless otherwise directed by the Department or this permit, the Permittee shall send two copies of reports, compliance certifications, and other submittals required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with condition 61.

[18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/2/07]

63. Information Requests. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the federal administrator.

[18 AAC 50.345(a) & (i), 11/9/08; 18 AAC 50.200, 10/1/04; 18 AAC 50.326(a) & (j), 12/1/04]
[40 C.F.R. 71.5(a)(2) & 71.6(a)(3), 7/2/07]

64. Excess Emissions and Permit Deviation Reports.

[18 AAC 50.235(a)(2) & 50.240(c), 10/1/04; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.346(b)(2) & (3), 11/9/08]

64.1 Except as provided in condition 43, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:

- a. in accordance with 18 AAC 50.240(c), as soon as possible after the event commenced or is discovered, report
 - (i) emissions that present a potential threat to human health or safety; and
 - (ii) excess emissions that the Permittee believes to be unavoidable;
- b. in accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or nonroutine repair that causes emissions in excess of a technology based emission standard;
- c. report all other excess emissions and permit deviations
 - (i) within 30 days of the end of the month in which the emissions or deviation occurs, except as provided in conditions 64.1c(ii) and 64.1c(iii);
 - (ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under condition 64.1c(i); and
 - (iii) for failure to monitor, as required in other applicable conditions of this permit.

64.2 The Permittee must report using either the Department's on-line form, which can be found at <http://www.dec.state.ak.us/air/ap/docs/adby/4notform.pdf>, or if the Permittee prefers, the form contained in Section 13 of this permit. The Permittee must provide all information called for by the form that is used.

64.3 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

65. Operating Reports. During the life of this permit²⁰, the Permittee shall submit to the Department one original and one copy of an operating report by April 30 for the period January 1 to March 31, by July 30 for the period April 1 to June 30, by October 30 for the period July 1 to September 30, and by February 15 for the period October 1 to December 31. The Permittee, at their discretion, may submit one original and one copy in electronic format (PDF or other Department compatible image format).

[18 AAC 50.346(b)(6), 11/9/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/2/07]

65.1 The operating report must include all information required to be in operating reports by other conditions of this permit.

65.2 If excess emissions or permit deviations that occurred during the reporting period are not reported under condition 65.1, either

a. The Permittee shall identify

- (i) the date of the deviation;
- (ii) the equipment involved;
- (iii) the permit condition affected;
- (iv) a description of the excess emissions or permit deviation; and
- (v) any corrective action or preventive measures taken and the date of such actions; or

b. When excess emissions or permit deviations have already been reported under condition 64, the Permittee may cite the date or dates of those reports.

65.3 The operating report must include a listing of emissions monitored under conditions 2.1e, 2.2c, and 29.1a, which trigger additional testing or monitoring, whether or not the emissions monitored exceed an emission standard. The Permittee shall include in the report

²⁰ *Life of this permit* is defined as the permit effective dates, including any periods of reporting obligations that extend beyond the permit effective dates. For example, if a permit expires prior to the end of a calendar year, there is still a reporting obligation to provide operating reports for the periods when the permit was in effect.

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- a. the date of the emissions;
 - b. the equipment involved;
 - c. the permit condition affected; and
 - d. the monitoring result which triggered the additional monitoring.

65.4 Transition from Expired to Renewed Permit. For the first period of this renewed operating permit, also provide the previous permit's operating report elements covering that partial period immediately preceding the effective date of this renewed permit.

66. Annual Compliance Certification. Each year by March 31, the Permittee shall compile and submit to the Department one original and one copy of an annual compliance certification report. The Permittee, at their discretion, may submit one original and one copy in electronic format (PDF or other Department compatible image format).

66.1 Certify the compliance status of the stationary source over the preceding calendar year consistent with the monitoring required by this permit, as follows:

- a. identify each term or condition set forth in Section 3 through Section 9, that is the basis of the certification;
- b. briefly describe each method used to determine the compliance status;
- c. state whether compliance is intermittent or continuous; and
- d. identify each deviation and take it into account in the compliance certification;

66.2 Transition from Expired to Renewed Permit. For the first period of this renewed operating permit, also provide the previous permit's annual compliance certification report elements covering that partial period immediately preceding the effective date of this renewed permit.

66.3 In addition, submit a copy of the report directly to the EPA-Region 10, Office of Air Quality, M/S OAQ-107, 1200 Sixth Avenue, Seattle, WA 98101.

[18 AAC 50.205, 10/1/04; 18 AAC 50.345(a) & (j), 11/9/08; 50.326(j), 12/1/04]
[40 C.F.R. 71.6(c)(5), 7/2/07]

67. NSPS and NESHAP Reports. The Permittee shall:

- 67.1 attach to the operating report required by condition 65, a copy of any NSPS and NESHAPs reports submitted to the EPA-Region 10 within the reporting period; and
- 67.2 upon request by the Department, notify and provide a written copy of any EPA-granted waiver of the federal emission standards, recordkeeping, monitoring, performance testing, or reporting requirements, or approved custom monitoring schedules.

[18 AAC 50.326(j)(4), 12/1/04 ;18 AAC 50.040(j), 7/25/08]
[40 C.F.R. 71.6(c)(6), 7/2/07]

Section 8. Permit Changes and Renewal

- 68. Emissions Trading.** No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(8), 7/2/07]

- 69. Off Permit Changes.** The Permittee may make changes that are not addressed or prohibited by this permit other than those subject to the requirements of 40 C.F.R. Part 72 through 78 or those that are modifications under any provision of Title I of the Act to be made without a permit revision, provided that the following requirements are met:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(12), 7/2/07]

- 69.1 Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition;
- 69.2 Provide contemporaneous written notice to EPA and the Department of each such change, except for changes that qualify as insignificant under 18 AAC 50.326(d) – (i). Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change;
- 69.3 The change shall not qualify for the shield under 40 C.F.R. 71.6(f);
- 69.4 The Permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.
- 70. Operational Flexibility.** The Permittee may make changes within the permitted stationary source without requiring a permit revision if the changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions):
- 70.1 The Permittee shall provide EPA and the Department with a notification no less than 7 days in advance of the proposed change.
- 70.2 For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

70.3 The permit shield described in 40 C.F.R. 71.6(f) shall not apply to any change made pursuant to condition 70.

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(13), 7/2/07]

71. **Permit Renewal.** To renew this permit, the Permittee shall submit an application under 18 AAC 50.326 no sooner than **September 30, 2012** and no later than **September 30, 2013. The renewal application shall be complete before the permit expiration date listed on the cover page of this permit.** Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 40 C.F.R. 71.7(b) and 71.5(a)(1)(iii).

[18 AAC 50.040(j)(3), 7/25/08; 18 AAC 50.326(c)(2) & (j)(2), 12/1/04]
[40 C.F.R. 71.5(a)(1)(iii), 71.7(b) & (c)(1)(ii), 7/2/07]

72. **Permit Applications.** The Permittee shall send original applications for modification or renewal of this permit, and application addenda to the Department's Anchorage office²¹. In addition, the Permittee may provide electronic copies of application documents; portable document format (PDF) or MS Word are acceptable formats.

[18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.7(a)(1)(i), 7/2/07]

73. The Permittee shall submit to the EPA-Region 10 at the address specified in condition 66:

73.1 a copy of any application for modification or renewal of this permit, and application addenda at the time the application or addendum is submitted to the Department;

73.2 to the extent practicable, the Permittee shall provide applications in computer-readable format compatible with EPA's national database management system. In the interim until EPA implements such system, portable document format (PDF) or MS Word are acceptable formats.

[18 AAC 50.040(j)(7), 7/25/08; 18 AAC 50.326(b), 12/1/04]
[40 C.F.R. 71.10(d)(1), 7/2/07]

²¹ The current address for the Anchorage office is: ADEC, 619 East Ship Creek, Suite 249, Anchorage, AK 99501.

Section 9. Compliance Requirements

General Compliance Requirements

- 74.** Compliance with permit terms and conditions is considered to be compliance with those requirements that are

74.1 included and specifically identified in the permit; or

74.2 determined in writing in the permit to be inapplicable.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (b), 11/9/08]

- 75.** The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14.120(c), 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

75.1 an enforcement action;

75.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

75.3 denial of an operating permit renewal application.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (c), 11/9/08]

- 76.** It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (d), 11/9/08]

- 77.** The Permittee shall allow the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator to

77.1 enter upon the premises where a source subject to the permit is located or where records required by the permit are kept;

77.2 have access to and copy any records required by the permit;

77.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and

77.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (h), 11/9/08]

- 78.** For applicable requirements with which the Tyonek Platform is in compliance, the Permittee will continue to comply with such requirements.

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(c)(3) & 71.5(c)(8)(iii)(A), 7/2/07]

Section 10. Permit As Shield from Inapplicable Requirements

In accordance with AS 46.14.290, and based on information supplied in the stationary source application, this section of the permit contains the requirements determined by the Department not to be applicable to the Tyonek Platform.

79. Nothing in this permit shall alter or affect the following:

79.1 The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section; or

79.2 The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance.

[18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(f)(3)(i) & (ii), 7/2/07]

80. Table B identifies the emission units that are not subject to the specified requirements at the time of permit issuance. If any of the requirements listed in Table B becomes applicable during the permit term, the Permittee shall comply with such requirements on a timely basis including, but not limited to, providing appropriate notification to EPA, obtaining a construction permit and/or an operating permit revision as applicable.

[18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(f)(1)(ii), 7/2/07]

Table B – Permit Shields Granted

Non-Applicable Requirements	Reason for Non-Applicability
Turbines (EU IDs 1 – 4)	
40 C.F.R. 60 Subpart A, Notification and Recordkeeping, 60.7(a)(1) & (a)(3) – initial only	Requirements were met for initial demonstration.
40 C.F.R. 60 Subpart A, Notification and Recordkeeping, 60.7(a)(5) and (a)(7)	No continuous monitoring systems at the facility. Notifications apply to startup conditions only and would not be applicable to operation.
40 C.F.R. 60 Subpart A, Performance Tests, 60.8 – initial only	Requirements were met for initial demonstration.
40 C.F.R. 60 Subpart GG, Standard for Nitrogen Oxides, 60.332(a)(1)	No affected sources within the stationary source.
40 C.F.R. 60 Subpart GG, Standard for Sulfur Dioxide, 60.333(a)	Owner/Operator must comply with 60.333(a) or (b). ConocoPhillips has chosen to comply with 60.333(b).
40 C.F.R. 60 Subpart GG, Monitoring of Operations, 60.334(a) –(g), and (h)(2)	60.334(a) and (b) apply only to turbines using water injection to control NOx (not required of turbines at Tyonek Platform). 60.334(c)-(g) are optional monitoring methods not used by ConocoPhillips. Nitrogen monitoring under 60.334(h)(2) is not required because ConocoPhillips has chosen not to claim an allowance for fuel bound nitrogen.
Internal Combustion Engines (EU IDs 20, 21, 24, 25, 28, 33, and 34)	

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary compression Ignition Internal Combustion Engines	EU IDs 20, 21, 24, 25, 28, 33, and 34 do not meet the applicability criteria under 40 C.F.R. 60.4200(a). The shield applies only for as long as the specific emission unit is not reconstructed, modified or replaced.
Stationary Source Wide	
40 C.F.R. 60 Subparts B, C, Ca, Cb, F, G, H, I, J, M, N, Na, O, S, T, U, V, W, X, Y, Z, AA, AAa, BB, CC, EE, HH, KK, LL, MM, NN, PP, QQ, RR, SS, TT, UU, VV, WW, XX, BBB, DDD, FFF, GGG, HHH, III, JJJ, LLL, NNN, OOO, PPP, QQQ, RRR, SSS, TTT, UUU, and VVV	Not an affected facility, operation or industry.
40 C.F.R. 60 Subparts D, Da, Db, Dc, E, Ea, Eb, K, Ka, Kb, L, P, Q, R, DD, and AAA	No affected sources within the stationary source.
40 C.F.R. 60 Subparts KKK and LLL	Tyonek Platform is an offshore stationary source.
40 C.F.R. 61 Subparts B, C, D, E, F, H, I, K, L, N, O, P, Q, R, T, W, Y, BB, and FF	Not an affected facility, operation, or industry.
40 C.F.R. 61.152 Subpart M	The stationary source does not use air cleaning equipment.
40 C.F.R. 61 Subpart J	The stationary source does not contain any equipment in benzene service.
40 C.F.R. 61 Subpart M	Per Federal Regulation: 40 C.F.R. 61.140, a facility must be a source specified in 61.142 through 61.151, 61.154, or 61.155 to be subject to Subpart M.
40 C.F.R. 61 Subpart A	Per Federal Regulation: 40 C.F.R. 61.01(c), a facility must be subject to a specific subpart of Federal Regulation: 40 C.F.R. 61 to be subject to Subpart A.
40 C.F.R. 61 Subpart V	Per Federal Regulation: 40 C.F.R. 61.240(b), a facility must be subject to a specific subpart of Federal Regulation: 40 C.F.R. 61 to be subject to Subpart V.
40 C.F.R. 63 Subparts F, G, M, O, R, T, W, X, Y, CC and EE	Not an affected facility, operation or industry.
40 C.F.R. 63 Subparts L, N, Q, OO, PP, RR and VV	No affected sources within the stationary source.
40 C.F.R. 63 Subpart A	Per Federal Regulation: 40 C.F.R. 63.1(a)(4), a facility must be subject to a specific subpart of Federal Regulation: 40 C.F.R. 63 to be subject to Subpart A.
40 C.F.R. 63 Subpart H	Per Federal Regulation: 40 C.F.R. 63.160(a), a facility must be subject to specific subpart of Federal Regulation: 40 C.F.R. 63 to be subject to Subpart H.
40 C.F.R. 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities, 63.762, 63.764, 63.765, 63.766, 63.769, 63.771, 63.772 (all except 63.772(b)(2)), 63.773, 63.774 (all except 63.774(d)(1)(ii)), and 63.775	The Tyonek Platform is not a major source of hazardous air pollutants as defined under any subpart of 40 C.F.R 63. Further, the Tyonek Platform is not subject to the Subpart HH area source control requirements or ongoing monitoring, recordkeeping or reporting because the facility is not located within an urban area as defined by Subpart HH and per-hydrator actual annual average benzene emissions are less than 1 TPY, excluding controls. Section III.C of the rule preamble indicates the non-applicability of 60.762. The non-applicability of 60.764 is indicated under 60.764(e)(1). The non-applicability of 60.765 is indicated under 60.765(a). 60.766 and 60.769

Non-Applicable Requirements	Reason for Non-Applicability
	only apply to major sources. 63.771 and 63.773 are not applicable because no control of emissions is required by the subpart. The non-applicability of 63.774 is indicated under 63.774(b) and (d)(1). 63.775(b) only applies to major sources. The non-applicability of 63.775(c) and (d) are indicated under 63.775(c)(8). 63.775(e) applies only to major sources or area sources within urban areas as defined under Subpart HH. See 60.773(e) and (e)(3).
40 C.F.R. 63 Subpart HHH	The Tyonek Platform operates prior to the point of custody transfer and is not a major source of hazardous air pollutants as defined in subpart HHH.
40 C.F.R. 64	The Tyonek Platform does not use a control device to achieve compliance with any emission limitation or standard.
40 C.F.R. 68	The Tyonek Platform, a crude petroleum and natural gas production facility, (NAICS code 21111) does not process or store regulated flammable or toxic substances in excess of threshold quantities. "Naturally occurring hydrocarbon mixtures" (crude oil, condensate, natural gas and produced water) prior to entry into a petroleum refining process unit (NAICS code 32411) or a natural gas processing plant (NAICS code 21112) are exempt from the threshold determination. No other mixtures containing regulated flammable substances stored at the facility meet the criteria for an NFPA rating of 4 for flammability. Therefore, all materials stored at the facility are exempt from the threshold determination.
40 C.F.R. 82 Subpart A	The Tyonek Platform does not produce, transform, destroy, import or export Class I, or Group I or II substances or products.
40 C.F.R. 82 Subpart B	Motor vehicles are not serviced on site.
40 C.F.R. 82 Subpart C and E	The Tyonek Platform does not manufacture or distribute Class I or II products or substances.
40 C.F.R. 82 Subpart D	This subpart does not apply to the facility. It applies only to Federal Departments, agencies, and instrumentalities.
40 C.F.R. 82 Subpart F, Appendix C	The Tyonek Platform is not a third party entity that certifies recovery equipment.
40 C.F.R. 82 Subpart F, Appendix D	The Tyonek Platform does not have a technician certification program.
40 C.F.R. 82 Subpart G	EPA has determined that the Significant New Alternatives Policy (SNAP) rule need not be included in the Title V permit.
40 C.F.R. 82.158	The Tyonek Platform does not manufacture or import recovery and recycling equipment.
40 C.F.R. 82.160	The Tyonek Platform does not contract equipment testing organizations to certify recovery and recycling equipment.
40 C.F.R. 82.164	The Tyonek Platform does not sell reclaimed refrigerants.
18 AAC 50.050, Incinerator Emission Standards	No affected sources within the stationary source.
18 AAC 50.055(a)(2), Fuel Burning equipment standards, opacity emission limit of 30%, 3-minute average	No affected sources within the stationary source.
18 AAC 50.055(a)(3), Fuel Burning equipment	The Tyonek Platform does not have a urea prilling tower.

Non-Applicable Requirements	Reason for Non-Applicability
standards, opacity emission limit of 55% for a urea prilling tower	
18 AAC 50.055(a)(4), (5) and (8), Fuel burning equipment standards, opacity emission limit of 20%, 6-minute average	No affected sources within the stationary source.
18 AAC 50.055(a)(6) and (7), Fuel burning equipment standards, opacity emission limit of 10%, 6-minute average	No affected sources within the stationary source.
18 AAC 50.055(a)(9), Fuel Burning equipment standards, opacity emission limit of 20% for more than three minutes in any one hour for a coal-burning boiler.	The Tyonek Platform does not have a coal-fired boiler.
18 AAC 50.055(b)(2) and (3), Fuel burning equipment standards, PM emission limit of 0.1 grains per cubic foot	No affected sources within the stationary source.
18 AAC 50.055(b)(4), Fuel burning equipment standards, PM emission limit of 0.15 grains per cubic foot	No affected sources within the stationary source.
18 AAC 50.055(d) and (e), Fuel burning equipment standards	No affected sources within the stationary source.
18 AAC 50.055(b)(5) and (6), Fuel burning equipment standards	No affected sources within the stationary source.
18 AAC 50.060, Pulp Mills	Not an affected facility, operation or industry.
18 AAC 50.065, Open Burning	Open burning is not conducted at the stationary source.
18 AAC 50.070 Marine Vessels, visible emission standards	Stationary source is more than 3 miles from shore.
18 AAC 50.075, Wood fired heating device emission standards	No affected sources within the stationary source.
18 AAC 50.085, Volatile liquid storage tank emission standards	Regulations only apply to tanks within the Port of Anchorage.
18 AAC 50.090 Volatile liquid loading racks and delivery emission standards	Regulations only apply to facilities within the Port of Anchorage.

Section 11. Stationary Source Emissions

Table C – NOx Emissions Data

A	B	C	D	E	F	G	H
EU ID	EU Description	NOx Emission Factor	Input / Output Parameter	Maximum NOx Emission Rate	Fuel Consumption	Hours of Operation	NOx Emissions
1	Solar Centaur T-4700 Turbine #1	0.426 lb/MMBtu	47,660 MBtu/hr	20.3 lb/hr			TPY
2	Solar Centaur T-4700 Turbine #2	0.426 lb/MMBtu	47,660 MBtu/hr	20.3 lb/hr			TPY
8	Waukesha L-7042G Engine #1	2 g/hp-hr	810 hp	3.57 lb/hr			TPY
9	Waukesha L-7042G Engine #4	2 g/hp-hr	810 hp	3.57 lb/hr			TPY
10	Glycol Heater #1	100 lb/MMscf	11,148 MBtu/hr	1.11 lb/hr			TPY
11	Glycol Heater #2	100 lb/MMscf	11,148 MBtu/hr	1.11 lb/hr			TPY
12	Glycol Heater #3	100 lb/MMscf	11,148 MBtu/hr	1.11 lb/hr			TPY
13	Glycol Regenerator #1	94 lb/MMscf	246 MBtu/hr	0.023 lb/hr			TPY
14	Glycol Regenerator #2	94 lb/MMscf	246 MBtu/hr	0.023 lb/hr			TPY
15	Glycol Regenerator #3	94 lb/MMscf	246 MBtu/hr	0.023 lb/hr			TPY
20	Caterpillar D-398 Engine #1	0.45 lb/gal	795 hp	18.0 lb/hr			TPY
21	Caterpillar D-398 Engine #2	0.45 lb/gal	795 hp	18.0 lb/hr			TPY
24	Manitowoc Crane	0.62 lb/gal	230 hp	7.9 lb/hr			TPY
25	Unit Crane	0.62 lb/gal	230 hp	7.9 lb/hr			TPY
28	John Deere 4039 Engine	0.58 lb/gal	80 hp	2.5 lb/hr			TPY
33	Caterpillar 3306 Firewater Engine #1	0.58 lb/gal	231 hp	6.2 lb/hr			TPY
34	Caterpillar 3306 Firewater Engine #2	0.58 lb/gal	231 hp	6.2 lb/hr			TPY
37	HP/LP Flare Pilot	0.068 lb/MMBtu	125 MBtu/hr	0.0085 lb/hr			TPY
38	HP Safety Flare	0.068 lb/MMBtu	583,333 MBtu/hr	39.7 lb/hr			TPY
39	LP Safety Flare	0.068 lb/MMBtu	58,300 MBtu/hr	4.0 lb/hr			TPY
							TPY

Notes:

- For EU IDs 8, 9, 13-15 (as identified in Permit No. AQ0091TVP01), and 37, calculate emissions (H) based on the hours of operation (G) and the NOx emission factor (C).
- For EU IDs 20, 21, 24, 25, 28, 33 and 34, calculate emissions (H) based on the NOx emission factor (C) and fuel consumption (F).
- For EU IDs 1, 2, 10-12, 38, and 39, calculate emissions (H) based on the NOx emission factor (C), fuel consumption (F), and heating value of the fuel (Note 4), or as indicated in Note 1.
- Use a heating value of 1,007 Btu/scf unless an alternative has been measured for Tyonek natural gas and provided to the Department in the operating report.
- Use the listed NOx emission factors, Department-approved site-specific NOx emission factors from results of source tests, or NOx emission limits determined by continuous emissions monitoring systems if required by the permit.
- The emissions inventory accounts for the Phillips Tyonek NCIU 1999 Project source inventory and does not account for emissions from EU IDs 3 and 4.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]

Section 12. Visible Emissions Forms

Visible Emissions Field Data Sheet

Certified Observer: _____

Company &
Stationary Source: _____

Location: _____

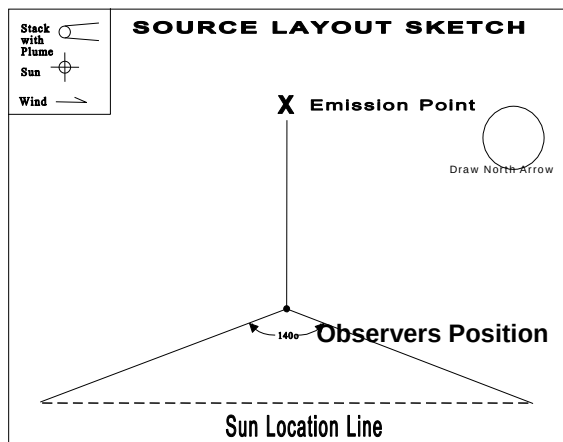
Test No.: _____ Date: _____

Emission Unit: _____

Production Rate/
Operating Rate: _____

Unit Operating Hours: _____

Hours of Observation: _____



Clock Time	Initial				Final
Observer Location:					
Distance to Discharge					
Direction from Discharge					
Height of Observer Point					
Background Description					
Weather Conditions:					
Wind Direction					
Wind Speed					
Ambient Temperature					
Relative Humidity					
Sky Conditions (clear, overcast, % clouds, etc.)					
Plume Description:					
Color					
Distance Visible					
Water Droplet Plume? (Attached or detached?)					
Other Information					

Page of

Test Number	Clock Time

[illegible]

Observer Signature and Date

Certified By and Date

Duration of Observation Period (minutes):

Duration Required by Permit (minutes)

Number of Observations

Highest Six –Minute Average Opacity (%)

Number of Observations exceeding 20%

In compliance with six-minute opacity limit? (Yes or No)

Set Number	Time Start—End	Opacity	
		Sum	Average

Section 13. ADEC Notification Form²²

Stationary Source Name

Air Quality Permit Number

Company Name

When did you discover the Excess Emissions/Permit Deviation?

Date: _____ / _____ / _____ Time: _____ : _____

When did the event/deviation occur?

Begin Date: _____ / _____ / _____ Time: _____ : _____ (please use 24-hr clock)

End Date: _____ / _____ / _____ Time: _____ : _____ (please use 24-hr clock)

What was the duration of the event/deviation? _____ : _____ (hrs:min) or _____ days

(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for Notification: (please check only 1 box and go to the corresponding section)

☐ Excess Emissions - Complete Section 1 and Certify.

☐ Deviation from Permit Condition - Complete Section 2 and Certify

☐ Deviations from COBC, CO, or Settlement Agreement - Complete Section 2 and Certify

Section 1. Excess Emissions

(a) Was the Exceedance: ☐ Intermittent or ☐ Continuous

(b) Cause of Event (Check one that applies):

☐ Start Up /Shut Down

☐ Natural Cause (weather/earthquake/flood)

☐ Control Equipment Failure

☐ Scheduled Maintenance/Equipment Adjustment

☐ Bad fuel/coal/gas

☐ Upset Condition

☐ Other _____

(c) Description:

Describe briefly, what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) Emissions Units Involved:

Identify the emission unit involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

EU ID	EU Name	Permit Condition Exceeded/Limit/Potential Exceedance

²² Revised as of August 24, 2006.

(e) Type of Incident (please check only one):

- ☐ Opacity _____ % ☐ Venting _____ (gas/scf) ☐ Control Equipment Down
☐ Fugitive Emissions ☐ Emission Limit ☐ Flaring
☐ Marine Vessel Opacity ☐ Other: _____

(f) Unavoidable Emissions:

Do you intend to assert that these excess emissions were unavoidable? ☐ Yes ☐ No

Do you intend to assert the affirmative defense of 18 AAC 50.235? ☐ Yes ☐ No

Certify Report (go to end of form)

Section 2 Permit Deviations

(a) Permit Deviation Type (check one only box, corresponding with the section in the permit):

- ☐ Emission Unit Specific
☐ Failure to _____
☐ General Source Test/Monitoring Requirements
☐ Recordkeeping/Reporting/Compliance Certification
☐ Standard Conditions Not Included in Permit
☐ Generally Applicable Requirements
☐ Reporting/Monitoring for Diesel _____
☐ Insignificant Emission Unit
☐ Record Keeping Failure
☐ Stationary Source _____
☐ Other Section _____ (title of section and section number of your permit).

(b) Emission Unit Involved:

EU	EU Name	Permit Condition / Potential Deviation

Identify the emission unit involved in the event, using the same identification number and name as in the permit. List the corresponding permit conditions and the deviation.

(c) Description of Potential Deviation:

Describe briefly what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) Corrective Actions:

Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Title: _____ Date: _____

Signature: _____ Phone Number: _____

NOTE: *This document must be certified in accordance with 18 AAC 50.345(j)*

To Submit this Report:

Fax to: 907-451-2187;

Email to: DEC.AQ.Airreports@alaska.gov - *if emailed, the report must be certified within the Operating Report required for the same reporting period per condition 65;*

Mail to: ADEC, Air Permits Program, 610 University Avenue, Fairbanks, AK 99709-3643;

Phone Notification: 907-451-5173 - *phone notifications require a written follow-up report within the deadline listed in condition 64; OR*

Online Submission: <https://myalaska.state.ak.us/deca/air/airtoolsweb/> - *if submitted online, the report must be certified within the Operating Report required for the same reporting period per condition 65.*

**Alaska Department of Environmental Conservation
Air Permits Program**

**Hilcorp Alaska, LLC
(Previously owned by ConocoPhillips Alaska, Inc.)
Tyonek Platform**

**STATEMENT OF BASIS
of the terms and conditions for
Permit No. AQ0091TVP02**

**Reviewed By: Jim Plosay
ADEC AQ/APP, Juneau**

**Prepared by Jeanette Brena
Entrix Corp.**

March 31, 2009

Revision 1: November 1, 2016

INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. AQ0091TVP02.

STATIONARY SOURCE IDENTIFICATION

Section 1 of Operating Permit No. AQ0091TVP02 contains information on the stationary source, as provided in the Title V permit application.

The stationary source (i.e., the Tyonek Platform) is owned and operated by Hilcorp Alaska, LLC. It was purchased from ConocoPhillips Alaska, Inc. on November 1, 2016. The SIC code for this stationary source is 1311 -- Crude Petroleum and Natural Gas.

The stationary source is an offshore oil and gas production platform that produces natural gas and transports it to the ConocoPhillips Kenai Liquefied Natural Gas Plant in Nikiski, Alaska.

EMISSION UNIT INVENTORY AND DESCRIPTION

Under 18 AAC 50.326(a), the Department requires operating permit applications to include identification of all emissions-related information, as described under 40 C.F.R. 71.5(c)(3).

The emission units at the Tyonek Platform that have specific monitoring, recordkeeping, and reporting requirements are listed in Table A of Operating Permit No. AQ0091TVP02, including four natural gas-fired turbines, two natural gas-fired engines, three natural gas-fired heaters, two gas flares (each of which are equipped with a pilot), seven diesel-fired engines, and one set of gas flare pilots.

Table A of Operating Permit No. AQ0091TVP02 also contains specific information on each of the emission units that are regulated by this permit and provided in the application. The table is provided for informational and identification purposes only. Specifically, the emission unit rating/size provided in the table is not intended to create an enforceable limit.

EMISSIONS

A summary of the potential to emit (PTE)¹ and assessable PTE is shown in Table D below.

Table D – Emissions Summary, in Tons Per Year (TPY)

Pollutant	NO _x	CO	PM-10	SO ₂	VOC	HAPs	Total
PTE	294	268	20	44	69	6.5	695
Assessable PTE	294	268	20	44	69	0	695

¹ *Potential to Emit or PTE* means the maximum capacity of a stationary source to emit a pollutant under its physical or operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source, as defined in AS 46.14.990(23), effective 7/25/08.

The assessable PTE listed under condition 37.1 is the sum of the emissions of each individual regulated air pollutant for which the stationary source has the potential to emit quantities greater than 10 tons per year (TPY). The emissions listed in the table are estimates to be used for informational purposes only. The listing of the emissions does not create an enforceable limit to the stationary source.

ConocoPhillips estimated emissions using vendor data, source tests data, AP-42 emission factors, and mass balances as used in the processing of Construction Permit No. 091CP04. The PM emissions estimates from AP-42 were updated and used in the processing of Minor Permit No. AQ0091MSS01. Hazardous air pollutants (HAPs) were estimated using AP-42 emission factors as provided by ConocoPhillips on June 18, 2007. HAP emissions are a subset of VOC emissions, so they are not included in the total PTE or total assessable PTE. The stationary source is not a major source of HAPs.

BASIS FOR REQUIRING AN OPERATING PERMIT

In accordance with AS 46.14.130(b), an owner or operator of a Title V source² must obtain a Title V permit consistent with 40 C.F.R. Part 71, as adopted by reference in 18 AAC 50.040.

Except for sources exempted or deferred by AS 46.14.120(e) or (f), AS 46.14.130(b) lists three categories of sources that require an operating permit:

- A major source;
- A stationary source subject to federal new source performance standards or national emission standards; and
- Another stationary source designated by the federal administrator by regulation.

This stationary source is further classified under 18 AAC 50.326(a) and 40 C.F.R. 71.3(a) as

- Directly emitting, or has the potential to emit, 100 TPY or more of any air pollutant;
- Contains a source, including an area source, subject to a standard, limitation or other requirement under Section 111 of the Act (New Source Performance Standards, NSPS) not exempted or deferred under AS 46.14.120(e) or (f); and
- Contains a source, including an area source, subject to a standard or other requirement under Section 112 of the Act (National Emission Standards for Hazardous Air Pollutants, NESHAPs) not exempted or deferred under AS 46.14.130(e) or (f).

CURRENT AIR QUALITY PERMITS

Previous Air Quality Permit to Operate

The most recent permit-to-operate issued for this stationary source is Permit to Operate No. 9623-AA007. This permit-to-operate included all construction authorizations issued through April 14, 1997. Under this permit, the Tyonek Platform became Prevention of Significant Deterioration (PSD) major for NO_x and CO emissions by removing owner requested limits established by Permit to Operate No. 9223-AA005. The Department established emission limits

² *Title V source* means a stationary source classified as needing a permit under AS 14.130(b) [ref. 18 AAC 50.990(111)].

to preclude pre-construction review under the PSD program for modifications to the platform. The Department required that all the turbine emission units burn only formation gas. The Department also required that ConocoPhillips provide a PSD application and show compliance with emissions and offsets to the 1980 levels, at the start of the PSD program. All stationary source-specific requirements established in this previous permit are included in the Title V operating permit as described in Table E.

Title I (Construction and Minor) Permits

Construction Permit No. 9923-AC011 was issued to the Permittee on September 8, 1999. This permit authorized the replacement of two existing turbines with refurbished units (EU IDs 1 and 2), and established owner requested limits enabling the Tyonek Platform to avoid classification as PSD major. This permitting action was in response to Condition 29 of Permit to Operate No. 9623-AA007. It revised the terms and conditions of Permit to Operate No. 9623-AA007 to bring the stationary source below PSD levels for NO_x and CO, and emission limits were established for existing equipment to preclude the Department imposing a retroactive PSD review.

Construction Permit No. 0023-AC007 was issued to the Permittee on June 6, 2000 and rescinded the previous construction permit. This permit authorized the installation of two additional turbines (EU IDs 3 and 4) and classified that stationary source as PSD major. Both turbines underwent a PSD review, including Best Available Control Technology (BACT) determinations for NO_x and PM₁₀. The owner requested limits established in Permit No. 9923-AC011 were retained to avoid PSD review of the stationary source's existing equipment.

Construction Permit No. 0123-AC011 was issued to the Permittee on July 18, 2001 and rescinded the previous construction permit. This permit was required as a remedial measure of Compliance Order by Consent (COBC) No. 2001-0038-50-1741 to update emission units ratings and revise operational limits for the platform's cranes (EU IDs 24 and 25). This permit retained the owner requested limits established in Permit No. 9923-AC011 and BACT limits established in Permit No. 0023-AC007.

Construction Permit No. 091CP04 was issued to the Permittee on January 24, 2003 and rescinded the previous construction permit. This permit revised terms and conditions established by Construction Permit No. 0123-AC011, and addressed the operational limits on the platform's glycol heaters (EU IDs 10 through 12). However, the permit did not carry forward all PSD avoidance requirements from Construction Permit No. 0123-AC011. If the PSD avoidance limits, originally established in Construction Permit No. 9923-AC011 are not re-established, then the equipment precluded from PSD review would then be subject to PSD, and a new permit application would be required.

On May 15, 2007, ConocoPhillips submitted a minor permit application and requested that all required terms and conditions from Permit No. 0123-AC011 that were inadvertently missing from Permit No. 091CP04 be reestablished. ConocoPhillips also requested that the Department make some modifications or not to re-establish some of the conditions from Permit No. 0123-AC011. Minor Permit No. AQ0091MSS01 was issued on April 8, 2008 and rescinded Permit No. 091CP04.

On September 22, 2008, ConocoPhillips requested an administrative amendment to Minor Permit No. AQ0091MSS01 to correct the ratings of EU IDs 3 and 4. This error was not carried forward in the Title V operating permit. On October 16, 2008, ConocoPhillips requested a

administrative amendment to Minor Permit No. AQ0091MSS01 and Title V Operating Permit No. AQ0091TVP01 Revision 2 to change the rating of EU IDs 8, 9, 20, and 21 to hp values rather than kW values. ConocoPhillips confirmed that the change would not affect emissions as the ratings are equivalent values. On November 12, 2008, the Department issued Minor Permit No. AQ0091MSS01 Administrative Revision 1. All effective stationary source-specific requirements established in this Title I permit are included in the Title V operating permit as described in Table F.

Title V Operating Permit Application, Revisions, and Renewal History

The Permittee submitted an application for a Title V operating permit in October 1997 (received by the Department on October 16, 1997). On September 18, 2002, the Department issued Title V Operating Permit No. 091TVP01.

The Department issued Permit No. AQ0091TVP01 Significant Revision 1 on April 28, 2004 to incorporate terms and conditions of Construction Permit No. 091CP04.

The Department issued Permit No. AQ0091TVP01 Significant Revision 2 on August 25, 2005 to clarify that fuel meters may be shared by emission units when they are identically rated units.

The Department issued Permit No. AQ0091TVP01 Administrative Revision 3 on November 12, 2008. This revision reflected the administrative amendment made in AQ0091MSS01 Revision 1 and as requested on October 16, 2008.

The Permittee submitted an application for a renewal to the Title V operating permit on September 25, 2006. The Department determined the application was incomplete on May 25, 2007. On June 11, 2007, the Permittee supplied additional information for a complete application.

The Department received a completed Transfer of Ownership Form from Hilcorp Alaska, LLC on October 31, 2016 with signed affidavits indicating the sale of the Tyonek Platform from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC. On November 1, 2016 the Department finalized the transfer of the Tyonek Platform's Air Permits to Hilcorp Alaska, LLC, by issuing AQ0091MSS03 Rev. 1 and AQ0091TVP02 Rev. 1.

COMPLIANCE HISTORY

The stationary source has operated at its current location since 1968. Review of the past permit files for this stationary source, indicate that it entered into two compliance orders by consent. COBC No. 01-038-50-1741 was issued on March 9, 2001 for exceeding the operational limits on the platform's cranes (EU IDs 24 and 25). Permit No. 0123-AC011 was issued on July 18, 2001 and resolved this violation. Review of current files indicate that the stationary source is operating in compliance with its permit.

STATIONARY SOURCE-SPECIFIC REQUIREMENTS CARRIED FORWARD

State of Alaska regulation in 18 AAC 50.326(j) with reference to 40 C.F.R. Part 71.6 requires that an operating permit include all emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance. These requirements include, but not limited to, each stationary

source-specific requirement established in the most recent operating permit or in any other construction permit issued under 18 AAC 50 that are still in effect at the time of permit issuance.

Table E and Table F list the requirements carried over from Permit No. 9623-AA007 and Permit No. AQ0091MSS01 Revision 1 into Operating Permit No. AQ0091TVP02.

Table E – Comparison of Permit No. 9623-AA007 Conditions to Operating Permit No. AQ0091TVP02 Conditions³

Permit No. 9623-AA007 Condition No.	Description of Requirement	Permit No. AQ0091TVP02 Condition No.	How Condition was Revised
5	Fuel Sulfur Limit of 0.5% by weight for EU IDs 20-36	NA	Not carried over - more stringent sulfur limit in Minor Permit No. AQ0091MSS01 Rev. 1.
6	Operate EU IDs 8 and 9 with Air-Fuel Controllers and Catalytic Converters	16	Not revised. Monitoring, reporting and source testing provisions added.
7	Flare systems shall have flow controls and not allow liquids to flow to the flare	NA	Removed the requirement. The affected temporary flare systems are no longer included in the source's emissions unit inventory.
9	Operate fuel burning equipment so its emissions do not exceed the Interim Annual Emission Limits	NA	Not carried over - condition has been rescinded and replaced by conditions in Minor Permit No. AQ0091MSS01 Rev. 1.
18	Analyze for the hydrogen sulfide content of the fuel gas on a quarterly basis using Draeger Tube analysis	NA	Not carried over - condition has been rescinded and replaced by conditions in Minor Permit No. AQ0091MSS01 Rev. 1.
19	Provide quarterly compliance demonstration that emissions are not greater than Interim Annual Emission Limits	NA	Not carried over - condition has been rescinded and replaced by conditions in Minor Permit No. AQ0091MSS01 Rev. 1.
23	Notify the Department if fuel gas hydrogen sulfide content exceeds 250 ppm	NA	Not carried over - condition has been rescinded and replaced by conditions in Minor Permit No. AQ0091MSS01 Rev. 1.

Table F – Comparison of Permit No. AQ0091MSS01 Revision 1 Conditions to Operating Permit No. AQ0091TVP02 Conditions⁴

Permit No. AQ0091MSS01 Rev. 1 Condition No.	Description of Requirement	Permit No. AQ0091TVP02 Condition No.	How Condition was Revised
5 - 6	Ambient air quality protection limits for non-road engines	10 - 11	Added conditions 10.1 through 10.3 to gap-fill MR&R requirements.

³ This table does not include all standard and general conditions.

⁴ This table does not include all standard and general conditions.

Permit No. AQ0091MSS01 Rev. 1 Condition No.	Description of Requirement	Permit No. AQ0091TVP02 Condition No.	How Condition was Revised
7 - 9	Owner requested limits to avoid PSD	12 - 14	Corrected condition 14 by deleting reference to the Well Test Flare (old EU ID 40) as the unit has been removed from the stationary source. Added conditions 12.8, 13.6, and 14.5 to gap- fill excess emissions reporting requirements.
10	BACT limits	15	Corrected condition 15 by replacing the word “present” with “absent”; non-dry-low NOx is indicated by an absent flame.

STATEMENT OF BASIS FOR THE PERMIT CONDITIONS

The State and federal regulations for each condition are cited in Operating Permit No. AQ0091TVP02. The Statement of Basis provides the legal and factual basis for each term and condition as set forth in 40 C.F.R. 71.6(a)(1)(i).

Conditions 1 - 5, Visible Emissions Standard and MR&R

Legal Basis: These conditions ensure compliance with the applicable requirements in 18 AAC 50.055(a). 18 AAC 50.055(a) applies to the operation of fuel-burning equipment and industrial processes.

- EU IDs 1 – 4, 8 – 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 are fuel burning equipment or industrial processes.

U.S. EPA incorporated these standards as revised in 2002 into the State Implementation Plan (SIP) effective September 13, 2007.

Factual Basis: Condition 1 prohibits the Permittee from causing or allowing visible emissions in excess of 18 AAC 50.055(a)(1). The Permittee must monitor, record-keep and report emissions in accordance with conditions 2 through 4 of the permit. The MR&R conditions are standard conditions adopted into regulation pursuant to AS 46.14.010(e) (Standard Condition IX). One of these conditions has been modified in this permit. For liquid fuels, the Department removed an error that inadvertently specified three sets of 18 minute observations when conducting annual observations. The Department also added a provision that clarifies the option to continue an established monitoring frequency for renewal permits. The Department adopted these changes into a revised standard condition on November 9, 2008.

Beyond as noted above, the Department has previously determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate the unit-specific or stationary-source-specific conditions would better meet the requirements. Therefore, the Department concludes that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).

The Department developed condition 5 to provide a standardized version of flare monitoring that is not dependent upon the type or design of upstream equipment. It has been claimed that gas-fired flares normally burn without emitting visible emissions, but actual field data demonstrating this assumption is not available. However, gas-fired flares have been shown to smoke when a control device (i.e., a knockout drum, flare scrubber, gas or steam assist, or vapor recovery system) malfunctions. Thus, the condition sets out a protocol to collect actual field data to determine compliance with the 20 percent opacity standard for flares.

A Department analysis of industry flaring operations indicates that 49 percent of the gas flared (by volume) is for pilot/purge, 25 percent is for flaring less than one hour, and 26 percent is for flaring that lasts more than one hour. Pilot/purge flaring constitutes half of all flaring by volume and is continuous in nature and can be observed at any time. This type of flaring has not caused violations of the opacity standard in the past and can be checked at any time by agency inspectors. The remaining half of the flaring volume is split evenly between less than and greater than one-hour duration. Therefore, the monitoring scheme in this

condition addresses the half of the non-continuous flaring operations that are scheduled and for which a certified observer can reasonably be located onsite.

Since it is impractical to require a stationary source to have a certified Method-9 opacity reader on site for unpredictable emergency flaring, the monitoring protocol requires Method-9 readings only during scheduled flare events. Scheduled events such as those generated by maintenance activities and well testing of approximately⁵ one-hour in duration will be observed. These one-hour events are currently quantified and reported to the Alaska Oil and Gas Conservation Commission for other reasons and thus provides a confirming information record of the occurrence of these events. Only those events as defined in the condition need to be monitored. If no events meeting this definition occur during the life of the permit then no monitoring is required.

Since only flaring that is scheduled and exceeds one hour is required to be observed, operators will have time to provide certified Method-9 readers onsite. Most oil and gas production plants in Alaska are located at remote sites, so it is not reasonable to self-monitor all or even a large sample of the flaring that occurs. Data collected from planned events will help the Department refine this monitoring scheme during future permit cycles. Process upsets and emergency events that may or may not exceed one hour occur randomly and do not lend themselves easily to periodic monitoring. At this time, the Department will rely on stationary source excess emission reports, citizen complaints, and agency inspections for information concerning these short term and emergency events.

Gas Fired:

Monitoring - The monitoring of gas fired emission units for visible emissions is waived, i.e. no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting - The Permittee must certify that only gaseous fuels are used in the equipment.

Liquid Fired:

Monitoring - The visible emissions may be observed by either Method-9 or the Smoke/No Smoke plans as detailed in condition 2.1. Corrective actions such as maintenance procedures and either more frequent or less frequent testing may be required depending on the results of the observations.

Recordkeeping - The Permittee is required to record the results of all visible emission observations and record any actions taken to reduce visible emissions.

Reporting - The Permittee is required to report: 1) emissions in excess of the federal and the State visible emissions standard and 2) deviations from permit conditions. The Permittee is required to include copies of the results of all visible emission observations with the stationary source operating report.

⁵ For purposes of this permit, a “flare event” is flaring of gas for *approximately* one hour as a result of scheduled release operations, i.e. maintenance or well testing activities. It does not include non-scheduled release operations, i.e. process upsets, emergency flaring, or de-minimis venting of gas incidental to normal operations. “*Approximately*” is defined as any release with a duration of 50 minutes or more.

Insignificant Emission Units:

For EU IDs 24, 25, 28, 33, and 34, no monitoring is required because these emission units are insignificant based on actual emissions as set out by 18 AAC 50.326(e). As long as emissions are below the rates set out by 18 AAC 50.326(e), they are considered insignificant emission units and no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, dated October 8, 2004. The Permittee must annually certify compliance under condition 66 with the visible emission standard.

Flares:

Monitoring for flares (EU IDs 37 – 39) requires Method-9 observations of scheduled flaring events lasting more than one hour. The Permittee must report the results of these observations to the Department.

Conditions 6 - 8, Particulate Matter (PM) Standard

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.055(b). This requirement applies to operation of all industrial processes and fuel burning equipment in Alaska.

- EU IDs 1 – 4, 8 – 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 are fuel-burning equipment.

These PM standards also apply because they are contained in the federally approved SIP effective September 13, 2007.

Factual Basis: Condition 6 prohibits emissions in excess of the state PM (also called grain loading) standard applicable to fuel-burning equipment and industrial processes. The Permittee shall not cause or allow fuel-burning equipment nor industrial processes to violate this standard.

MR&R requirements are listed in conditions 7 and 8 of the permit.

Gas Fired:

For gas fired emission units, MR&R conditions are Standard Condition VIII adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).

Although periodic PM monitoring of gas-fired units is waived, the Department has the discretion to request a source test for PM emissions from any fuel burning equipment under 18 AAC 50.220(a) and 345(l).

Liquid Fired:

For liquid fuel units, the MR&R conditions are Standard Condition IX adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-

source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).

The Permittee must establish by actual visual observations which can be supplemented by other means, such as a defined Stationary Source Operation and Maintenance Program that the stationary source is in continuous compliance with the State's emission standards for particulate matter.

Insignificant Emission Units:

For EU IDs 24, 25, 28, 33, and 34, no monitoring is required because these emission units are insignificant based on actual emissions as set out by 18 AAC 50.326(e). As long as emissions are below the rates set out by 18 AAC 50.326(e), they are considered insignificant emission units and no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, dated October 8, 2004. The Permittee must annually certify compliance under condition 66 with the particulate matter standard.

Flares:

Monitoring of gas fired flares for particulate matter is waived, i.e. no source testing will be required, because of the difficulty and questionable results these tests produce when applied to flares. The Department has recognized this fact by incorporating the waiver in the SIP adopted in November 1984, which has not been federally approved. No recordkeeping or reporting is required.

Condition 9, Sulfur Compound Emissions

Legal Basis: This condition requires the Permittee to comply with the sulfur compound emission standard for all fuel-burning equipment and industrial processes in the State of Alaska.

- EU IDs 1 – 4, 8 – 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 are fuel-burning equipment and industrial processes.

These sulfur compound standards also apply because they are contained in the federally approved SIP effective September 13, 2007.

Factual Basis: The condition requires the Permittee to comply with the sulfur compound emission standard applicable to fuel-burning equipment. The Permittee may not cause or allow the affected equipment to violate this standard.

Sulfur dioxide comes from the sulfur in the fuel (e.g. coal, natural gas, fuel oils).

Liquid Fuels:

For oil fired fuel burning equipment, Standard Condition XI and XII adopted into regulation pursuant to AS 46.14.010(d) was not used. The Permittee is currently limited to 0.25 percent S by weight in condition 13 as imposed by Minor Permit No. AQ0091MSS01 Revision 1. The MR&R conditions are identical to that listed in the minor permit rather than have two sets of MR&R.

Gaseous Fuels:

Fuel gas sulfur is measured as hydrogen sulfide (H₂S) concentration in ppm by volume (ppmv). Calculations⁶ show that fuel gas containing no more than 4000 ppm H₂S will comply with this emission standard at stoichiometric or excess air combustion conditions. This is true for all fuel gases. Equations to calculate the exhaust gas SO₂ concentrations resulting from the combustion of fuel gas were not included in this permit. Fuel gas with an H₂S concentration of even 10 percent of 4000 ppm is currently not available in Alaska and is not projected to be available during the life of this permit.

The Permittee is currently limited to 200 ppm H₂S in condition 13 as imposed by Minor Permit No. AQ0091MSS01 Revision 1. The MR&R conditions for complying with this standard are identical to that listed in the minor permit.

Conditions 10 - 16, Title I Permit Requirements

Legal Basis: The Permittee is required to comply with all effective stationary source-specific requirements that were carried forward from previous EPA PSD permits, SIP approved permits to operate issued before January 18, 1997, SIP approved construction permit(s), SIP approved minor permits, operating permits issued between January 18, 1997 and September 30, 2004, or owner requested limits established under 18 AAC 50.225. These requirements include Best Available Control Technology limits, limits to ensure compliance with the attainment or maintenance of ambient air quality standards or maximum allowable ambient concentrations, and owner requested limits. State pre-construction requirements apply because they were originally developed through case-by-case action under a federally approved SIP or approved Operating Permit program. EPA approved the latest SIP effective September 13, 2007.

Factual Basis: Conditions 10 through 15 incorporate owner requested limits carried forward by Minor Permit No. AQ0091MSS01 Revision 1. The Department added monitoring, recordkeeping, and reporting under condition 10 to ensure that ConocoPhillips tracks the number and size of non-road internal combustion engines on the platform as gap-filling under 40 C.F.R. 71.6(a)(3). The permit incorporates the associated monitoring, recordkeeping, and reporting requirements for conditions 11 through 15. Condition 15.2 references the 40 C.F.R. Subpart GG NO_x conditions 29.1, 29.2, and 29.3 for MR&R requirements to comply with the NO_x BACT limits of 25 ppmv and 6.2 lb/hr for EU IDs 3 and 4.

Condition 16 incorporates specific operating limits carried forward by Permit to Operate No. 9623-AA007. This is intended to minimize the emissions from the Waukesha engines, EU IDs 8 and 9. The permit incorporates associated monitoring, recordkeeping, and reporting requirements. EU IDs 8 and 9 are gas-fired engines. As set out in the Phillips Petroleum Company's (PPC) October 13, 1992 application to amend the Permit to Operate No. 9223-AA005⁷, the NO_x and CO emissions from EU IDs 8 and 9 are controlled using non-selective catalytic reduction (NSCR) systems to avoid PSD for drilling on platform. On March 8,

⁶ See ADEC Air Permits Web Site at <http://www.dec.state.ak.us/air/ap/docs/sulfgas.pdf>, under "Stoichiometric Mass Balance Calculations of Exhaust Gas SO₂ Concentration."

⁷ Phillips Petroleum Company (PPC) used to operate the Tyonek Platform in 1992. At the time, the stationary source was authorized to operate under Permit to Operate No. 9223-AA005.

1993, PPC also stated that they would formalize the catalyst replacement criteria as they gain more experience with the air-fuel ratio controller and catalytic converter. The Department has no record that CPC (or then PPC) has formalized its replacement criteria, nor a record of the Waukesha unit emission test results showing controlled emission rates from tests conducted within the past five years, nor did the past three on-site full compliance evaluation reports reference any recent record of the emission units' catalyst replacement. Therefore, the Department added condition 16.3 to reaffirm NO_x emission factors for those two NSCR controlled engines, EU IDs 8 and 9.

Conditions 17 - 20, Insignificant Emission Units

Legal Basis: The Permittee is required to meet state emission standards set out in 18 AAC 50.055 for all industrial processes fuel-burning equipment, and incinerators regardless of size.

Factual Basis: The conditions re-iterate the emission standards and require compliance for insignificant emission units. The Permittee may not cause or allow their equipment to violate these standards. Insignificant emission units are not listed in the permit unless specific monitoring, recordkeeping and reporting are necessary to ensure compliance.

The Department finds that the insignificant units at this stationary source do not require specific monitoring, recordkeeping and reporting to ensure compliance under these conditions.

Condition 17.1 requires certification that the units did not exceed state emission standards during the previous year and did not emit any prohibited air pollution. For EU IDs 24, 25, 28, 33, and 34, as long as they remain insignificant based on actual operations, no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, dated October 8, 2004 for standby emission units.

Conditions 21 - 28, NSPS Subpart A Requirements

Legal Basis: The Permittee must comply with those New Source Performance Standard (NSPS) provisions effective July 1, 2007, incorporated by reference, for specific industrial activities, as listed in 18 AAC 50.040⁸.

Most (with the exception of some storage tanks) sources subject to an NSPS are subject to Subpart A. At this stationary source, EU IDs 1 – 4 are subject to NSPS Subpart GG and therefore subject to Subpart A.

Condition 21.1 through 21.3 – The Permittee has already complied with the notification requirements in 40 C.F.R. 60.7 (a)(1) & (3) for EU IDs 1 – 4. However, the Permittee is still subject to these requirements in the event of a new NSPS source or reconstruction of this existing source.

Condition 21.4 – The requirements to notify the EPA and the Department of any proposed replacement of an affected stationary source (40 C.F.R. 60.15) apply to EU IDs 1 – 4 in the event of a proposed replacement of this source.

⁸ EPA has not delegated to the Department the authority to administer the NSPS program as of the issue date of this permit.

Condition 22 – Start-up, shutdown, or malfunction record maintenance requirements in 40 C.F.R. 60.7(b) are applicable to all NSPS sources subject to Subpart A.

Conditions 23 and 24 – NSPS excess emission reporting requirements and summary report form in 40 C.F.R. 60.7(c) & (d) are applicable to affected units that use continuous monitoring device and for turbines subject to Subpart GG that use periodic sulfur monitoring requirement in condition 30.1a. The Department has included in Attachment A of the statement of basis a copy of the federal EEMSP summary report form for use by the stationary source. Conditions 23 and 24 do not apply to Subpart GG turbines that are monitored under condition 30.1b.

Recordkeeping requirements in 40 C.F.R. 60.7(f) are applicable to all NSPS sources. (Satisfied by condition 60).

Condition 25 – The Permittee has already complied with the initial performance test requirements in 40 C.F.R. 60.8 for EU IDs 1 – 4. However, the Permittee is still subject to these requirements in the event of a new NSPS affected facility, in the event of a modification or reconstruction of an existing facility into an affected facility, or at such other times as may be required by EPA.

Condition 26 – Good air pollution control practices in 40 C.F.R. 60.11 are applicable to all NSPS sources subject to Subpart A (EU IDs 1 – 4).

Condition 27 – This condition states that any credible evidence may be used to demonstrate compliance or establishing violations of relevant NSPS standards for EU IDs 1 – 4.

Condition 28 – Concealment of emissions prohibitions in 40 C.F.R. 60.12 are applicable to EU IDs 1 – 4.

Factual Basis: Subpart A contains the general requirements applicable to all affected facilities (sources) subject to NSPS. In general the intent of NSPS is to provide technology-based emission control standards.

Conditions 29 – 30, NSPS Subpart GG Requirements

Legal Basis: This condition prohibits the Permittee from exceeding emission standards set out in Subpart GG. NSPS Subpart GG applies to stationary gas turbines with a heat input at peak load (maximum load at 60 percent relative humidity, 59 degrees F, and 14.7 psi) equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr), based on the lower heating value of the fuel fired and constructed, modified, or reconstructed after October 3, 1977.

Factual Basis: These conditions incorporate NSPS Subpart GG NO_x emission and sulfur compound limits. The Permittee may not allow equipment to violate these standards.

NO_x Standard: For a turbine subject to 40 C.F.R. 60.332, the NO_x standard is determined by the following equation:

$$STD_{NOX} = 0.015(14.4 / Y) + F$$

where,

STD_{NOX} = allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis)

Y	=	manufacturer's maximum rated heat input (kJ/W-hr), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the affected stationary source. The value of Y shall not exceed 14.4 kJ/W-hr
F	=	NOx emissions allowance for fuel bound nitrogen, percent by volume, assumed to be zero for Alaska fuel.

Based on the manufacturer's heat rating at manufacturer's rated peak load, and assuming fuel bound nitrogen of zero, the NOx standard is 165 ppmv for EU IDs 1 and 2, and 181 ppmv for EU IDs 3 and 4.

SO₂ Standard: The Permittee is required to comply with one of the following sulfur requirements for EU IDs 1 – 4 (turbines):

- (1) do not cause or allow SO₂ emission in excess of 0.015 percent by volume, at 15 percent O₂ and on a dry basis (150 ppmv), or
- (2) do not cause or allow the sulfur content for the fuel burned in EU IDs 1 – 4 to exceed 0.8 percent by weight.

The Permittee has elected to comply with the SO₂ standard by not exceeding 0.8 percent by weight sulfur content of the fuel burned in the emission units.

Exemptions: Gas turbines exempted from NSPS Subpart GG emission standards are as provided in 40 C.F.R. 60.332(e) – (l).

Condition 29.1 - 29.3, NOx Monitoring, Recordkeeping, and Reporting

Legal Basis: Periodic monitoring is included in condition 29.1 for all turbines that normally operate for greater than 400 hours in a 12 month period. This additional monitoring is necessary to ensure that turbine emissions comply with the NSPS NOx standard and is required under 40 C.F.R. 71.6(a)(3) as the subpart does not contain MR&R sufficient for an operating permit.

Factual Basis: The Department does not have enough information to make categorical determinations that certain types of turbines, or turbines with emission test results below a certain percentage of the Subpart GG NOx emission limit will inherently comply with the Subpart GG limit at all times and will never need additional testing. After a sufficient body of NOx data is gathered under monitoring conditions for compliance with 40 C.F.R. 60, Subpart GG, the Department may find that it has enough information to make such categorical determinations. In that event, the Department would revise the NOx monitoring conditions. The Department may determine that to assure compliance it is necessary to retain or increase the current monitoring frequency.

These conditions do not include the initial NSPS performance test requirements as the Subpart A conditions cover these requirements. If an existing or new turbine under this permit is still subject to the performance test requirement of 40 C.F.R. 60.8, such requirement is covered under the Subpart A related conditions.

The intent of these conditions is that turbines or groups of turbines be routinely tested on no less than a 5-year cycle. EU IDs 3 and 4 are also subject to NOx BACT limit of 25 ppmv and 6.2 lb/hr in condition 15.1. Since the NOx BACT limit is more stringent than the

Subpart GG NO_x limit, the Subpart GG limit will not be exceeded without exceeding the BACT limit. In order to streamline the NO_x source testing requirements, the Department used the NO_x BACT limit as a baseline trigger for EU IDs 3 and 4 rather than Subpart GG. If the most recent performance test on a turbine shows NO_x emissions at less than or equal to 90 percent of the limits shown in condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4), then periodic monitoring is required at the first applicable of three criteria: either within 5 years of the last performance test, or within a year of the issue date of the permit, or within a year of exceeding 400 hours of operation within a 12-month period. For clarification, the Department added a 6 month cut-off date for triggering source testing within 1 year after permit issue date in accordance with condition 29.1a(i)(B). The 6-month trigger identifies when condition 29.1a(i)(C) would be enacted to require source testing within 1 year of triggering 400 hours. This edit ensures that a unit would not appear to be out of compliance with condition 29.1a(i)(B) once it finally triggered condition 29.1a(i)(C).

If the most recent performance test showed operations at greater than 90 percent of the limits listed in condition 29 (for EU IDs 1 and 2) and condition 15.1 (for EU IDs 3 and 4), then periodic monitoring source testing is required every year until two consecutive tests show emissions at less than or equal to 90 percent of the limit.

The condition does not state how load must be measured. For some turbines it may be possible to directly measure load as either mechanical or electrical output. For others, it may be necessary to calculate load indirectly based on measurements of other parameters. The Department is not attempting to dictate what method is most appropriate through the permit condition, but should evaluate the adequacy of methods of calculating load based on the load monitoring proposed by the Permittee.

Subpart GG defines “emergency gas turbine⁹” and exempts turbines meeting that definition from the GG emission standards. Some turbines may be operated as standby equipment but not meet the definition of emergency turbine, so the Department has added a monitoring threshold of 400 hours per 12-month period. For turbines expected to operate less than 400 hours the Department has also added recordkeeping for hours of operation. The Department does not intend to require the Permittee to operate a turbine solely for the purpose of testing.

The condition requires testing at a range of loads, consistent with the performance test requirements in Subpart GG, that is, test at 30, 50, 75, and 100 percent load. If testing at these four loads is not reasonable, the condition allows the Permittee to propose to the Department what test loads will be reasonable and adequate, and the Department will have the responsibility to make a finding on that proposal. If EPA has already approved alternative test loads for the initial performance test the Department would allow those test loads if the information that went into that decision were still representative of the turbine operation.

In condition 29.1b(ii)(C)(4), the Department considers “fuel type” to mean, for liquid fuels a type of fuel as described in an ASTM or similar fuel specification.

⁹ *Emergency Gas Turbine* means any stationary gas turbine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation, as defined in 40 C.F.R. 60.331(e), effective 7/1/07.

Load measurements or load calculations from load surrogate measurements are for one-hour periods. The intent is to match the averaging period for the test method. Method 20 identifies a number of traverse points that vary with the size of the stack. From these points the tester is to choose at least 8 points for NO_x measurements. The time at each point is to be at least one minute plus the average response time of the instrument. The recorded value is the average steady state response. Presumably, the steady state response would exclude some or all of the response time of the instrument. Three runs are to be done at each test load.

The three runs would represent 24 minutes of measurement time or more. A one-hour average load is therefore a reasonable approximation of a load period corresponding to the test method.

Conditions 30.1 - 30.4, SO₂ Monitoring, Recordkeeping, and Reporting

Applicability: This condition requires the Permittee to comply with NSPS Subpart GG SO₂ or fuel quality monitoring, record keeping and reporting.

Factual Basis: Monitoring, recordkeeping, and reporting requirements for this condition are described in NSPS Subpart GG and have been referenced here. No additional monitoring outside of the Subpart GG requirements is necessary to ensure compliance with the NSPS SO₂ standard.

Monitoring: Condition 30.1 incorporates NSPS Subpart GG fuel sulfur monitoring requirements. Per condition 30.1b and pursuant to 40 C.F.R. 60.334(h)(3), the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 C.F.R. 60.331(u), regardless of whether an existing custom schedule approved by the Administrator requires such monitoring. The Permittee has elected not to conduct sulfur monitoring as allowed under condition 30.1b and submitted a certified statement to the Department indicating that the fuel gas combusted at the stationary source meets the definition of natural gas as defined by §60.331(u). Per 40 C.F.R. 60.334(i)(3)(i), a custom sulfur monitoring schedule under 60.334(i)(3)(ii)(A) is acceptable without prior Administrative approval.

Recordkeeping: The Permittee is required to maintain records of all sulfur monitoring data required by NSPS Subpart GG for five years as set out in condition 60.

Reporting: NSPS Subpart GG SO₂ standard reporting requirements for turbines monitored under condition 30.1a are incorporated in the permit in condition 30.4. For the purpose of the EEMSP reports and summary report required under 40 C.F.R. 60.7(c), report daily periods during which the sulfur content of the fuel being fired in the turbine exceeds 0.8 percent. As stated in conditions 23, 24, and 64, reports are to be submitted to the Department and EPA, and summarized in the operating report required under condition 65.

Conditions 31, NESHAPs Subpart A General Requirements for Source Categories

Legal Basis: The Department has incorporated by reference the NESHAPs requirements effective July 16, 2007, for specific industrial activities, as listed in 18 AAC 50.040(c).

Most sources subject to a NESHAPs are subject to Subpart A. Tyonek Platform is subject to NESHAPs 40 C.F.R. 63 Subpart HH (NESHAPs from Oil and Natural Gas Production Facilities) and is therefore subject to associated Subpart A requirements as set out in the corresponding subparts.

Factual Basis: Subpart A contains the general requirements applicable to all affected facilities (sources) subject to NESHAPs. In general, the intent of NESHAPs is to regulate specific categories of stationary sources that emit or have the potential to emit one or more hazardous air pollutants.

Condition 32, NESHAP 40 C.F.R. 63 Subpart HH

Applicability: This condition requires the Permittee to comply with 40 C.F.R. 63, Subpart HH for oil and natural gas production facilities.

Factual Basis: These conditions incorporate the NESHAP 40 C.F.R. 63, Subpart HH exemption criteria. The Permittee shall maintain a record of the actual average emissions of benzene from the glycol dehydration units (EU IDs 40 – 42) vented to the atmosphere to demonstrate emissions are less than 0.90 megagram per year, as determined by the procedures specified in 40 C.F.R. 63.772(b)(2).

Conditions 33 - 35, Standard Terms and Conditions

Legal Basis: These are standard conditions required under 18 AAC 50.345(a) and (e)-(g) for all operating permits. This provision is incorporated in the federally approved Alaska operating permit program of November 30, 2001.

Factual Basis: These are standard conditions that apply to all permits.

Condition 36, Administration Fees

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.400-405 as derived from AS 46.14.130. This condition requires the Permittee, owner, or operator to pay administration fees as set out in regulation. Paying administration fees is required as part of obtaining and holding a permit with the Department or as a fee for a Department action.

Factual Basis: The owner or operator of a stationary source who is required to apply for a permit under AS 46.14.130 shall pay to the Department all assessed permit administration fees. The regulations in 18 AAC 50.400-405 specify the amount, payment period, and the frequency of fees applicable to a permit action.

Conditions 37 - 38, Emission Fees

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.410-420. The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to re-compute assessable emissions.

Factual Basis: These emission fee conditions are standard condition I under 18 AAC 50.346(b) adopted pursuant to AS 46.14.010(d). The Department determined that these

standard conditions adequately meet the requirements of AS 46.14.250. No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of AS 46.14.250.

These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The default assessable emissions are emissions of each air pollutant authorized by the permit (AS 46.14.250(h)(1)(A)).

The conditions allow the Permittee to calculate **actual** annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air pollutant. Therefore, fees based on actual emissions must also be paid on any pollutant emitted whether or not the permit contains any limitation of that pollutant.

This standard condition specifies that, unless otherwise approved by the Department, calculations of assessable emission based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable emission are based on the previous year, the Department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match.

Condition 39, Good Air Pollution Control Practice

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(5) and applies to all emission units, **except** those subject to federal emission standards, those subject to continuous emission or parametric monitoring, and for insignificant emission units.

Factual Basis: The condition requires the Permittee to comply with good air pollution control practices for all emission units (except insignificant emission units).

Maintaining and operating equipment in good working order is fundamental to preventing unnecessary or excess emissions. Standard conditions for monitoring compliance with emission standards are based on the assumption that good maintenance is performed. Without appropriate maintenance, equipment can deteriorate more quickly than with appropriate maintenance. If appropriate maintenance is not applied to the equipment, the Department may have to apply more frequent periodic monitoring requirements (unless the monitoring is already continuous) to ensure that the monitoring results are representative of actual emissions.

The Permittee is required to keep maintenance records to show that proper maintenance procedures were followed, and to make the records available to the Department. The Department may use these records as a trigger for requesting source testing if the records show that maintenance has been deferred.

Condition 40, Dilution

Legal Basis: This condition prohibits the Permittee from using dilution as an emission control strategy as set out in 18 AAC 50.045(a). This State regulation applies to the Permittee because the Permittee is subject to emission standards in 18 AAC 50.

Factual Basis: The condition prohibits the Permittee from diluting emissions as a means of compliance with any standard in 18 AAC 50.

Condition 41, Reasonable Precautions to Prevent Fugitive Dust

Legal Basis: This condition requires the Permittee to use reasonable precautions when handling, storing or transporting bulk materials or engineering in an industrial activity in accordance with the applicable requirement in 18 AAC 50.045(d). Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the stationary source.

Factual Basis: The condition requires the Permittee to comply with 18 AAC 50.045(d), and take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air.

Condition 42, Stack Injection

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.045(e)-(f). It prohibits the Permittee from releasing materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack (i.e. disposing of material by injecting it into a stack). Stack injection requirements apply to the stationary source because the stationary source contains a stack or source constructed or modified after November 1, 1982.

Factual Basis: No specific monitoring for this condition is practical. Compliance is ensured by inspections, because the emission unit or stack would need to be modified to accommodate stack injection.

Condition 43, Air Pollution Prohibited

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.110. The condition prohibits the Permittee from causing any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. Air Pollution Prohibited requirements apply to the stationary source because the stationary source will have emissions.

Factual Basis: While the other permit conditions and emissions limitation should ensure compliance with this condition, unforeseen emission impacts can cause violations of this standard. These violations would go undetected except for complaints from affected persons. Therefore, to monitor compliance, the Permittee must monitor and respond to complaints.

ADEC adopted this standard condition into 18 AAC 50.346(a) pursuant to AS 46.14.010(d). The Department determined that this condition adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard condition meets the requirements of 40 C.F.R. 71.6(a)(3).

The Permittee is required to report any complaints and injurious emissions. The Permittee must keep records of the date, time, and nature of all complaints received and summary of

the investigation and corrective actions undertaken for these complaints and to submit copies of these records upon request of the Department.

Condition 44, Technology-Based Emission Standard

Legal Basis: The Permittee is required to take reasonable steps to minimize emissions if certain activity causes an exceedance of any technology-based emission standard in this permit. This condition ensures compliance with the applicable requirement in 18 AAC 50.235. Technology Based Emission Standard requirements apply to the stationary source because the stationary source contains equipment subject to a technology-based emission standard, such as BACT, MACT, LAER, NSPS or other “technologically feasible” determinations.

Factual Basis: The conditions of this permit list applicable technology-based emission standards and require excess emission reporting for each standard in accordance with condition 64. Excess emission reporting under condition 64 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under condition 64.

Condition 45, Asbestos NESHAP

Legal Basis: The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. This condition ensures compliance with the applicable requirement in 18 AAC 50.040(b)(1) and (2)(F). The asbestos demolition and renovation requirements apply if the Permittee engages in asbestos demolition or renovation.

Factual Basis: Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with these federal regulations.

Condition 46, Refrigerant Recycling and Disposal

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.040(d) and applies if the Permittee engages in the recycling or disposal of certain refrigerants. The condition requires the Permittee to comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F, which will apply if the Permittee uses certain refrigerants.

Factual Basis: Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with this federal regulation.

Condition 47, NESHAPs Applicability Determinations

Legal Basis: This condition requires the Permittee to keep and make available to the Department copies of the major stationary source determination and applicability of specific federal regulations that may apply to its stationary sources.

Factual Basis: The Permittee has conducted an analysis of the stationary source and determined that it is not a major HAPs stationary source based on emissions. This condition

requires the Permittee to keep and make available to the Department copies of the major stationary source determination.

Conditions 48 - 49, Halon Prohibitions

Legal Basis: These prohibitions apply to all stationary sources that use halon for fire extinguishing and explosion inerting. The condition prohibits the Permittee from causing or allowing violations of these prohibitions. The stationary source uses halon and is therefore subject to the federal regulations contained in 40 C.F.R. 82.

Factual Basis: These conditions incorporate applicable 40 C.F.R. 82 requirements.

Condition 50, Open Burning

Legal Basis: The open burning state regulation in 18 AAC 50.065 applies to the Permittee if the Permittee conducts open burning at the stationary source. The Permittee certified that they do not conduct open burning at the stationary source.

Factual Basis: No specific monitoring is required for this condition.

Condition 51, Requested Source Tests

Legal Basis: The Permittee is required to conduct source tests as requested by the Department. The Department adopted this condition under 18 AAC 50.345(k) as part of its operating permit program approved by EPA November 30, 2001.

Factual Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.220(a) and applies because this is a standard condition to be included in all operating permits. Monitoring consists of conducting the requested source test.

Conditions 52 - 54, Operating Conditions, Reference Test Methods, Excess Air Requirements

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.220(b) and applies because the Permittee is required to conduct source tests by this permit. The Permittee is required to conduct source test as set out in conditions 52 through 54.

Factual Basis: These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with conditions 52 through 54 consist of the test reports required by condition 59.

Condition 55, Test Exemption

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.345(a) and applies when the source exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), amended May 3, 2002, the requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

Conditions 56 - 59, Test Deadline Extension, Test Plans, Notifications and Reports

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.345(l) - (o) and applies because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions 18 AAC 50.345(l) - (o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with this condition.

Condition 60, Recordkeeping Requirements

Legal Basis: Applies because the Permittee is required by the permit to keep records.

Factual Basis: The condition restates the regulatory requirements for recordkeeping, and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide an evidence of compliance with this requirement.

Condition 61, Certification

Legal Basis: This condition requires the Permittee to comply with the certification requirement in 18 AAC 50.205 and applies to all Permittees under EPA's approved operating permit program of November 30, 2001.

Factual Basis: This standard condition is required in all operating permits under 18 AAC 50.345(j). This condition requires the Permittee to certify all reports submitted to the Department. To ease the certification burden on the Permittee, the condition allows the excess emission reports to be **certified** with the stationary source report, even though it must still be **submitted** more frequently than the stationary source operating report. This condition supplements the reporting requirements of this permit.

Condition 62, Submittals

Legal Basis: This condition requires the Permittee to comply with standardized reporting requirement in 18 AAC 50.326(j) and applies because the Permittee is required to send reports to the Department.

Factual Basis: This condition requires the Permittee to send submittals to the address specified in this condition. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the reporting requirements of this permit.

Condition 63, Information Requests

Legal Basis: This condition requires the Permittee to submit requested information to the Department. This is a standard condition from 18 AAC 50.345(i) of the State approved operating permit program effective November 30, 2001.

Factual Basis: This condition incorporates a standard condition in regulation, which requires the Permittee to submit information requested by the Department. Monitoring consists of receipt of the requested information.

Condition 64, Excess Emission and Permit Deviation Reports

Legal Basis: This condition requires the Permittee to comply with the applicable requirement in 18 AAC 50.235(a)(2) and 18 AAC 50.240. Also, the Permittee is required to notify the Department when emissions or operations deviate from the requirements of the permit.

Factual Basis: This condition satisfies two state regulations related to excess emissions - the technology-based emission standard regulation and the excess emission regulation.

Although there are some differences between the regulations, the condition satisfies the requirements of each regulation.

The Department adopted this condition as Standard Operating Permit Condition III under 18 AAC 50.346(c) pursuant to AS 46.14.010(d). The Department determined that this standard condition adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).

Section 13, Notification Form

The Department modified the notification form, deviating from Standard Permit Condition IV, to more adequately meet the requirements of Chapter 50, Air Quality Control. The modification consisted of correcting typos and moving failure to monitor/report and recordkeeping to the permit deviations Section 2.

Condition 65, Operating Reports

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(6) and applies to all permits.

Factual Basis: The condition restates the requirements for reports listed in regulation. The condition supplements the specific reporting requirements elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition.

The Department modified Standard Permit Condition VII to allow quarterly reporting. In addition, it was modified to clarify reporting for transition periods between an expiring permit and a renewal permit. The changes ensure that the Permittee reports against the permit terms and conditions of the permit that was in effect during those partial date periods of the transition. No format is specified. The Permittee may provide one report accounting for each permit term or condition and the effective permit at that time. The Permittee may chose to provide two reports: the first report accounting for reporting elements of permit terms and conditions from the end date of the previous operating report until the date of expiration of the old permit, and a second operating report accounting for reporting elements of terms and conditions in effect from the effective date of the renewal permit until the end of the reporting period.

The Department further modified this condition to allow the Permittee to submit one of the required two copies of the report electronically in lieu of paper. This change more adequately meets the requirements of 18 AAC 50 and agency needs provided the electronic version is compatible with ADEC software, as the Department can more efficiently distribute the electronic copy to staff in other locations.

A final change was inserted to ensure that permit deviation or excess emissions notices provided as part of condition 64 were also reported under this condition.

The Department adopted these changes into revised standard conditions on November 9, 2008.

Condition 66, Annual Compliance Certification

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.040(j)(4) and applies to all Permittees.

Factual Basis: This condition specifies the periodic compliance certification requirements, and specifies a due date for the annual compliance certification. The reports themselves provide monitoring for compliance with this condition.

Condition 66.2 provides clarification of transition periods between an expiring permit and a renewal permit to ensure that the Permittee certifies compliance with the permit terms and conditions of the permit that were in effect during those partial date periods involved in the transition. No format is specified: the Permittee may provide one report certifying compliance with each permit term or condition and the effective permit at that time, or may chose to provide two reports – one certifying compliance with permit terms and conditions from January 1 until the date of expiration of the old permit, and a second report certifying compliance with terms and conditions in effect from the effective date of the renewal permit until December 31.

This condition was further modified to allow the Permittee to submit one of the required two copies in electronic format. This change more adequately meets the requirements of 18 AAC 50 and agency needs, as the Department can more efficiently distribute the electronic copy to staff in other locations.

Condition 67, NSPS and NESHAP Reports

Legal Basis: The Permittee is required to provide the federal administrator and Department a copy of each emission unit report for units subject to NSPS or NESHAP federal regulations under 18 AAC 50.326(j)(4). 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: The condition supplements the specific reporting requirements in 40 C.F.R. 60 and 40 C.F.R. 61. The reports themselves provide monitoring for compliance with this condition.

Conditions 68 - 70, Permit Changes and Revisions Requirements

Legal Basis: The Permittee is obligated to notify the Department of certain off-permit source changes and operational changes under 18 AAC 50.326(j)(4). 40 C.F.R. 71.6(a)(10), (12), and (13) incorporated by reference under 18 AAC 50.040(j) require these provisions within this permit. 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: These are conditions required in 40 C.F.R. 71.6 for all operating permits to allow changes within a permitted stationary source without requiring a permit revision. The Permittee did not request trading of emission increases and decreases as described in 71.6(a)(13)(iii).

Condition 71, Permit Renewal

Legal Basis: The Permittee must submit a timely and complete operating permit renewal application if the Permittee intends to continue source operations in accord with the operating permit program under 18 AAC 50.326(j)(3). The obligations for a timely and complete operating permit application are set out in 40 C.F.R. 71.5 incorporated by reference

in 18 AAC 50.040(j)(3). 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: In accordance with AS 46.14.230(a), this operating permit is issued for a fixed term of five years after the date of issuance, unless a shorter term is requested by the permit applicant. The Permittee is required to submit an application for permit renewal by the specific dates applicable to the stationary source as listed in this condition. As stated in 40 C.F.R. 71.5(a)(1)(iii), submission for a permit renewal application is considered timely if it is submitted at least six months but no more than eighteen months prior to expiration of the operating permit. According to 71.5(a)(2), a complete renewal application is one that provides all information required pursuant to 40 C.F.R. 71.5(c) and must remit payment of fees owed under the fee schedule established pursuant to 18 AAC 50.400. 40 C.F.R. 71.7(b) states that if a source submits a timely and complete application for permit issuance (including renewal), the source's failure to have a permit is not a violation until the permitting authority takes final action on the permit application.

Therefore, for as long as an application has been submitted within the timeframe allowed under 40 C.F.R. 71.5(a)(1)(iii), and is complete before the expiration date of the existing permit, then the expiration of the existing permit is extended and the Permittee has the right to operate under that permit until the effective date of the new permit. However, this protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information needed to process the application. Monitoring, recordkeeping, and reporting for this condition consist of the application submittal.

Condition 72 - 73, Permit Applications

Legal Basis: These conditions set out the protocol the Permittee must follow to submit amendment, modification and renewal applications to the Department under 18 AAC 50.326(j)(3) and to the federal administrator under 40 C.F.R. 71.5, 71.7 and 71.10.

Factual Basis: This condition directs the Permittee to submit application materials to the Department's Anchorage office. The current address at time of permit issuance is provided in a footnote because it is likely to change during the life of this permit. The current address can be obtained by contacting the Department, checking the website, or by other reasonable means. The Permittee may submit copies of application materials in electronic formats compatible with ADEC software as the Department can more efficiently distribute the electronic copy to staff in other locations. Condition 73 directs the applicant to send copies of all application materials directly to the EPA, in electronic format if practicable.

Conditions 74 - 78, General Compliance Requirements and Schedule

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.326(j)(3). The Permittee is required to comply with these standard conditions set out in 18 AAC 50.345 included in all operating permits. 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: These are standard conditions for compliance required for all operating permits.

Conditions 79 - 80, Permit Shield

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.326(j) and applies because the Permittee has requested that the Department shield the source from the applicable requirements listed under this condition under the federally approved State operating program effective November 30, 2001.

Factual Basis: Table B of Operating Permit No. AQ0091TVP02 shows the permit shields that the Department granted to the Permittee. The Department denied a shield to sulfur monitoring under 40 C.F.R. 60.334(h)(1) and reporting under 40 C.F.R. 60.7(c) and (d). Although ConocoPhillips has certified that the fuel for EU IDs 1 – 4 meets the definition of natural gas as defined in 40 C.F.R. 60.334(u), the Department has retained both monitoring options in the permit. The Department denied a shield for NSPS Subpart KKKK as ConocoPhillips has existing emission units and may replace a unit with an affected facility turbine during the life of this permit. The Department denied a shield for 40 C.F.R. 63 Subpart ZZZZ because the Environmental Protection Agency adopted Area Source Standards within this provision.

Attachment A

Figure 1 -- Summary Report -- Excess Emission and Monitoring System Performance

Pollutant: (Circle One—SO₂/NO_x/fuel sulfur)

Reporting period dates:

From: _____ to _____

Company: _____

Emission Limitation: _____

Address: _____

Monitor Manufacturer and Model No.: _____

Date of latest CMS (CEMS and PEMS) Certification or Audit: _____

Process Unit(s) Description: _____

Total source operating time in reporting period¹: _____

Emission Data Summary¹	CMS (CEMS and PEMS) Performance Summary¹
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown _____ b. Control equipment problems _____ c. Process problems _____ d. Other known causes _____ e. Unknown causes _____	1. CMS (CEMS and PEMS) downtime in reporting period reporting period due to: a. Monitor equipment malfunctions _____ b. Non-Monitor equipment malfunctions _____ c. Quality assurance calibration _____ d. Other known causes _____ e. Unknown causes _____
2. Total duration of excess emission _____	2. Total CMS (CEMS and PEMS) Downtime _____
3. Total duration of excess emissions X (100)/[Total source operating time] _____ % ²	3. [Total CMS (CEMS and PEMS) Downtime] X (100)/[Total source operating time] _____ % ²

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS (CEMS or PEMS) downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in this condition shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name

Signature

**SECTION 7 -
PROPOSED OPERATING PERMIT
(PERMIT NO. AQ0091TVP03)**

**Tyonek Platform
Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1**

HILCORP ALASKA, LLC
3800 Centerpoint Dr., Suite 1400 (zip 99503)
P.O. Box 244027
Anchorage, AK 99524-4027

February 2023

DEPARTMENT OF ENVIRONMENTAL CONSERVATION AIR QUALITY OPERATING PERMIT

Permit No. ~~AQ0091TVP03~~~~AQ0091TVP02~~ Issue: ~~<Insert Date> March 31, 2009~~
~~Revision 1: November 1, 2016~~ Expiration Date: ~~<Insert Date> March 31, 2014~~

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues an operating permit to the Permittee, **Hilcorp Alaska, LLC**, for the operation of the **Tyonek Platform**.

This permit satisfies the obligation of the owner and operator to obtain an operating permit as set out in AS 46.14.130(b).

As set out in AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this operating permit.

Citations listed herein are contained within 18 AAC 50 dated <DATE, Register no.>. All Federal regulation citations are from those sections adopted by reference in this version of regulation in 18 AAC 50.040 unless otherwise specified.

All currently applicable stationary source-specific terms and conditions of Permit to Operate No. 9623-AA007 and Air Quality Minor Permits No. ~~AQ0091MSS01~~ ~~Revision 1~~~~AQ0091MSS03~~ ~~Revision 1~~ and ~~AQ0091MSS04~~ have been incorporated into this operating permit.

Upon effective date of this ~~operating~~ permit, Operating Permit No. ~~AQ0091TVP01~~ ~~Revision 3~~ ~~AQ0091TVP02~~ ~~Revision 1~~ expires.

This operating permit becomes effective ~~April 30, 2009~~~~<insert date – 30 days after issue date>~~. ~~This revised Operating Permit is effective November 1, 2016 and acknowledges the transfer of ownership of the Tyonek Platform from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC.~~

Commented [Hilcorp-1]: In the paragraph that identifies citations listed in the permit, the Department typically uses the phrase "within the effective version of 18 AAC 50 at permit issuance." We ask that the Department instead use the phrase "within 18 AAC 50 dated <DATE, Register no.>." This eliminates the need for the reader to research what version of 18 AAC 50 was in effect at the time of permit issuance and provides the specific applicable version of 18 AAC 50 that applies to the permit.

Commented [Hilcorp-2]: Permit AQ0091MSS01 Rev. 1 has been rescinded by permit AQ0091MSS03. We ask that the Department incorporate the appropriate terms and conditions of permit AQ0091MSS03 Rev. 1 (or Rev. 2 if it is issued prior to issuance of permit AQ0091TVP03) and permit AQ0091MSS04 into the renewed Tyonek Title V permit and update the permit citations accordingly.

Commented [Hilcorp-3]: Make general updates associated with a permit renewal using information found in the ADEC Title V permit template.

~~James R. Plosay~~~~John F. Kuterbach,~~
Manager
Air Permits Program

[https://slrgroup-my.sharepoint.com/personal/seduggins_slrconsulting_com/Documents/Documents/Temporary/_Hilcorp TYK TVP02 Renew/Permit \(Proposed\)/AQ0091TVP03 Permit and SOB \(HAK RLSO 2023\).docx](https://slrgroup-my.sharepoint.com/personal/seduggins_slrconsulting_com/Documents/Documents/Temporary/_Hilcorp TYK TVP02 Renew/Permit (Proposed)/AQ0091TVP03 Permit and SOB (HAK RLSO 2023).docx)

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Permit No. [AQ0091TVP02AQ0091TVP03](#)
[Tyonek Platform](#)
Revision 1: November 1, 2016

Issued: [March 31, 2009](#)<insert date>
Expires: [March 31, 2014](#)<insert date>

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List of Abbreviations Used in this Permit

AAQSQ	Alaska Ambient Air Quality Standards	MMBtu	Million British thermal units
AAC	Alaska Administrative Code	MMBtu/hr	Million British thermal units per Hour
ADEC	Alaska Department of Environmental Conservation	MMscf	Million standard cubic feet
AS	Alaska Statutes	MMscf/hr	Million standard cubic feet per hour
ASTM	American Society for Testing and Materials	MR&R	Monitoring, Recordkeeping, and Reporting
BACT	Best Available Control Technology	NAICS	North American Industry Classification System
Bbls	U.S. Petroleum Barrels	NESHAPs	Federal National Emission Standards for Hazardous Air Pollutants [<i>NESHAPs</i> as contained in 40 C.F.R. 61 and 63]
BHp	Boiler ~~H~~ orsepower	NOx	Nitrogen ~~O~~ xides
bHp	Brake horsepower	NSPS	Federal New Source Performance Standards [<i>NSPS</i> as contained in 40 C.F.R. 60]
CDX	Central Data Exchange	O&M	Operation and Maintenance
CEDRI	Compliance and Emissions Data Reporting Interface	O ₂	Oxygen
C.F.R.	Code of Federal Regulations	PAL	Plantwide Applicability Limitation
The Act	Clean Air Act	PM-10	Particulate Matter less than or equal to a nominal ten microns in diameter
CI	Compression ignition	ppm	Parts per million
CO	Carbon ~~M~~ onoxide	ppmv;	Parts per million by volume
CO₂	Carbon dioxide	ppmvd	Parts per million by volume on a dry basis
CO₂e	Carbon dioxide equivalent emissions	~~psia~~	~~Pounds per Square Inch (absolute)~~
dscf	Dry standard cubic foot	PSD	Prevention of Significant Deterioration
EPA	US Environmental Protection Agency	~~psia~~	~~Pounds per square inch (absolute)~~
EU	Emissions Unit	psi	Pounds per square inch (pressure)
FAHS	Federal Aid Highway System	PTE	Potential to Emit
GHG	Greenhouse Gas	RICE	Reciprocating internal combustion engine
gr/dscf	Grain per dry standard cubic foot (1 pound = 7000 grains)	RM	Reference Method
GPH	Gallons per hour	S	Sulfur
HAPs	Hazardous Air Pollutants [<i>HAPs</i> as defined in AS 46.14.990(14)]	scf	standard cubic feet
Hp	Horsepower	SIC.	Standard Industrial Classification
H₂S	Hydrogen sulfide	SO ₂	Sulfur dioxide
ICE	Internal combustion engine	TPH	Tons per hour
ID	Emissions Unit Identification Number	TPY	Tons per year
ISO	Operating conditions corresponding to sea level and 59 deg. F	VOC	Volatile organic compound [<i>VOC</i> as defined in 40 C.F.R. 51.100(s)]
kPa	KiloPascals	VOL	Volatile organic liquid [<i>VOL</i> as defined in 40 C.F.R. 60.111b, Subpart Kb]
kW	Kilowatt	vol%	Volume percent
LAER	Lowest Achievable Emission Rate	wt%	weight percent
LHV	Lower heating value		
MACT	Maximum Achievable Control Technology [<i>MACT</i> as defined in 40 C.F.R. 63]		

Commented [Hilcorp-4]: General updates associated with a permit renewal using information found in recent ADEC Title V permit template.

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Section 1. Stationary Source Information

Identification

Names and Addresses

Permittee:	Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524
Stationary Source Name:	Tyonek Platform
Location:	61° 04' 34 ⁶ " North Latitude; 150° 57' 03 ⁵² " West Longitude (NAD83)
Physical Address:	Upper Cook Inlet, AK
Owner/Operator:	Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524
Permittee's Responsible Official:	Chris Kanyer, Asset Team Lead ~~David S. Wilkins, Senior Vice President~~ Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524
Designated Agent:	CT Corporation System 9360 Glacier Highway, Suite 202 Juneau, AK 99801
Stationary Source and Building Contact:	~~Greg Arthur, Air Program Lead~~ ~~David S. Wilkins, Senior Vice President~~ Hilcorp Alaska, LLC ~~Hilcorp Alaska, LLC~~ P.O. Box 244027 Anchorage, AK 99524 (907) 777- ~~85098300~~ ~~greg.arthur@hilcorp.com~~ ~~dwilkins@hilcorp.com~~
Permit ~~and Fee~~ Contact:	~~Greg Arthur, Air Program Lead~~ ~~David S. Wilkins, Senior Vice President~~ Hilcorp Alaska, LLC P.O. Box 244027 Anchorage, AK 99524 (907) 777- ~~85098300~~ ~~greg.arthur@hilcorp.com~~ ~~dwilkins@hilcorp.com~~
Fee Contact:	Hilcorp Accounts Payable P.O. Box 61529 Houston, TX 77208

Commented [Hilcorp-5]: Update this section to match information provided in Form A1.

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	(713) 209-2400

Stationary Source Process Description

SIC Code ~~of the Stationary Source~~: 1311 -- Crude Petroleum and Natural Gas
[NAICS Code \(2017\): 211120 – Crude Petroleum Extraction](#)

[18 AAC 50.040(j)(3), ~~7/25/08~~; ~~18 AAC~~ & 50.326(a), ~~12/1/04~~]
[40 C.F.R. 71.5(c)(1) & (2)(1 & 2), ~~7/2/07~~]

Commented [Hilcorp-6]: Typographical correction

Section 2. Emissions Unit Inventory and Description

Emissions units listed in Table A and Table B have specific monitoring, recordkeeping, or reporting conditions in this permit. Emissions unit descriptions and ratings are given for identification purposes only.

Table A – Emissions Unit Inventory

EU ID	Emissions Unit Name	Emissions Unit Description	Rating/Size	Install Date
Gas Fired Turbines				
1	Turbine/Compressor SetTY-C-4101A	Solar Centaur T-4700 Turbine Compressor No. 1	4700 hp ISO (46.3 MMBtu/hr LHV @ 0°F)	1999
2	Turbine/Compressor SetTY-C-4101B	Solar Centaur T-4700 Turbine Compressor No. 2	4700 hp ISO (46.3 MMBtu/hr LHV @ 0°F)	1999
3	Turbine/Compressor SetTY-C-4102A	Solar Taurus 60 T-7300S Turbine Compressor No. 3	7170 hp ISO (61.4 MMBtu/hr LHV @ 0°F)	2000
4	Turbine/Compressor SetTY-C-4102B	Solar Taurus 60 T-7300S Turbine Compressor No. 4	7170 hp ISO (61.4 MMBtu/hr LHV @ 0°F)	2000
Gas Fired Engines, & Heaters, & Boilers				
8	Gas Electric Generator SetTY-G-3201A	Waukesha L-7042G Electric Generator Engine No. 1 with air-fuel controllers and catalytic converters	810 hp (604 kW)	1968
9	Gas Electric Generator SetTY-G-3201B	Waukesha L-7042G Electric Generator Engine No. 4 with air-fuel controllers and catalytic converters	810 hp (604 kW)	1968
10	Gas Heater	BS&B Glycol Heater No. 1	11.1 MMBtu/hr (heat input; HHV)	1968
~~11~~	~~Gas Heater~~	~~Glycol Heater No. 2~~	~~11.1 MMBtu/hr~~	~~1968~~
12	Gas Heater	BS&B Glycol Heater No. 3	11.1 MMBtu/hr (heat input; HHV)	1968
Diesel Fired Engines				
20	EngineTY-G-3502A	Caterpillar D-398 Standby Electric Generator Engine No. 1	795 hp (593 kW)	1968
21	EngineTY-G-3502B	Caterpillar D-398 Standby Electric Generator Engine No. 2	795 hp (593 kW)	1968
24	EngineTY-CR-0001	Manitowoc-Caterpillar C9.3 MY 2013 Tier 4i Crane Engine	230-350 hp (261 kW)	~~1968~~ 2013
25	EngineTY-CR-0002	Unit John Deere 6135HF485F MY 2008 Tier 3 Crane Engine	230-500 hp (373 kW)	~~1968~~ 2002
28	EngineTY-C-0015	John Deere 4039 DF001 Air Compressor Engine	80 hp	1992
33	EngineTY-P-2809A	Caterpillar 3306 Firewater Engine No. 1	231 hp	2002

Commented [Hilcorp-7]: Insert a reference to new Table B, which we propose be added to Section 2 to document the emissions unit inventory of the Spartan 151 drill rig, which is authorized to operate on the Tyonek platform by Minor Permit AQ0091MSS04.

Commented [Hilcorp-8]: Make general updates to Table A to match the emissions unit information provided in Form B of the application.

Commented [Hilcorp-9]: Remove "boilers" from the second heading. There are no boilers (as defined by NESHAP Subpart JJJJJ) at the stationary source.

Commented [Hilcorp-10]: EU ID 11 has been removed from service. Remove all references to this unit throughout the permit as shown in the permit markup.

Commented [Hilcorp-11]: EU IDs 24 and 25 have been replaced. Update the engine information for EU IDs 24 and 25 to match that provided in Form B of the application.

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EU ID	Emissions Unit Name	Emissions Unit Description	Rating/Size	Install Date
34	EngineTY-P-2809B	Caterpillar 3306 Firewater Engine No. 2	231 hp	2002
Flare Pilots and Flares				
37	Gas FlareTY-V-0006	HP/LP Flare Pilots	0.125 MMBtu/hr (HHV)	1968
38	Gas FlareTY-V-0005	HP Safety Flare	583.3 MMBtu/hr (HHV)	1968
39	Gas FlareTY-V-0007	LP Safety Flare	53.3 MMBtu/hr (HHV)	1968
Vents				
40	VentTY-H-2611	Glycol Regenerator No. 1 Reboiler Vent	NA	1968
41	VentTY-H-2612	Glycol Regenerator No. 2 Reboiler Vent	NA	1968
42	VentTY-H-2613	Glycol Regenerator No. 3 Reboiler Vent	NA	1968

Notes: ~~(1) The emission unit ratings provided in MMBtu/hr refer to the higher heating value of the fuel.~~
~~(2) The ratings for EU IDs 8, 9, 20, and 21 were updated consistent with the revisions made in Minor Permit No. AQ0091MSS01 Rev. 1 and Permit No. AQ0091TVP01 Rev. 3.~~
~~(3) EU IDs 13 – 15 in the Permit No. AQ0091TVP01 Rev. 3~~[AQ0091MSS03](#) are not included in the table because they are insignificant emission units that no longer have emission-unit specific requirements. The requirements ~~have been~~[were](#) rescinded by Minor Permit No. AQ0091MSS01 Rev. 1.

[18 AAC 50.326(a), ~~12/1/04~~]
~~[40 C.F.R. 51.166(b);~~ 40 C.F.R. 71.5(c)(3), ~~7/2/07~~]

Commented [Hilcorp-12]: We propose replacing Note (1) with information provided within the table to document where MMBtu/hr ratings are based on HHV and where they are based on LHV.

Delete Note (2), which is no longer necessary with the passing of another generation of the operating permit.

Retain and revise Note (3) (which will become Note (1)) to continue documenting why EU IDs 13 - 15 are not carried forward to the operating permit from the relevant minor source permit.

Commented [Hilcorp-13]: Remove the citation to 40 CFR 51.166(b). It is unnecessary.

The Spartan 151 Drill Rig and associated equipment may consist of the emissions units listed in Table B. The specific emissions unit descriptions do not restrict the Permittee from replacing an emissions unit identified in Table B.

Table B – Spartan 151 Drill Rig and Associated Emissions Unit Inventory^{1,2}

<u>EU ID</u>	<u>Description</u>	<u>Make/ Model</u>	<u>Rating/ Capacity</u>	<u>Fuel</u>	<u>Commenced Construction Date³</u>
<u>S1</u>	<u>Rig Engine #1</u>	<u>Caterpillar D-399</u>	<u>1,100 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S2</u>	<u>Rig Engine #2</u>	<u>Caterpillar D-399</u>	<u>1,100 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S3</u>	<u>Rig Engine #3</u>	<u>Caterpillar D-398</u>	<u>970 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S4</u>	<u>Rig Engine #4</u>	<u>Caterpillar D-398</u>	<u>970 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S5</u>	<u>Rig Engine #5</u>	<u>Caterpillar D-398</u>	<u>970 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S6</u>	<u>Rig Engine #6</u>	<u>Caterpillar D-398</u>	<u>970 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S7</u>	<u>Rig Engine #7</u>	<u>Caterpillar D-398</u>	<u>970 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S8</u>	<u>Crane Engine</u>	<u>Caterpillar D-3306</u>	<u>300 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S9</u>	<u>Crane Engine</u>	<u>Detroit Diesel 671</u>	<u>285 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S10</u>	<u>Cement Pump 1</u>	<u>Detroit Diesel 8V71</u>	<u>490 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S11</u>	<u>Cement Pump 2</u>	<u>Detroit Diesel 8V71</u>	<u>490 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S12</u>	<u>Diesel Fuel Storage Tank #10</u>	<u>NA</u>	<u>32,943 gallons</u>	<u>NA</u>	<u>1981</u>
	<u>Diesel Fuel Storage Tank #11</u>	<u>NA</u>	<u>646 gallons</u>	<u>NA</u>	<u>1981</u>
	<u>Diesel Fuel Storage Tank #12</u>	<u>NA</u>	<u>28,663 gallons</u>	<u>NA</u>	<u>1981</u>
	<u>Diesel Fuel Storage Tank #13</u>	<u>NA</u>	<u>3,305 gallons</u>	<u>NA</u>	<u>1981</u>
<u>S13</u>	<u>Lifeboat 1 Engine</u>	<u>BUKH DV36 RME</u>	<u>36 hp</u>	<u>Diesel</u>	<u>1981</u>
<u>S14</u>	<u>Lifeboat 1 Engine</u>	<u>BUKH DV36 RME</u>	<u>36 hp</u>	<u>Diesel</u>	<u>1981</u>

Notes:

- (1) EU IDs S1 through S11, S13, and S14 are nonroad engines (NREs), as defined in 40 C.F.R. 1068.30.
- (2) Diesel fuel storage tanks #10 through #13, collectively identified as EU ID S12, are insignificant emissions units under 18 AAC 50.326(e) that are not subject to any emission standards, operational limitations, or monitoring, recordkeeping, or reporting requirements.
- (3) There are no installation dates because Spartan 151 Drill Rig equipment rotates on and off the platform.

[18 AAC 50.326(a)]

[40 C.F.R. 71.5(c)(3)]

[Minor Permit AQ0091MSS04, Table 1, 12/23/2020]

Commented [Hilcorp-14]: Insert new Table B to display the emissions unit inventory of the Spartan 151 drill rig. These units have applicable requirements that have been carried forward from Minor Permit AQ0091MSS04 into the proposed TVP03 permit included with this application. We suggest using the presentation of Table B in the Granite Point Platform Operating Permit AQ0066TVP04 as a "go-by" for the Tyonek Platform operating permit.

Section 3. State Requirements

Visible Emissions Standards

1. **Industrial Process and Fuel-Burning Equipment Visible Emissions.** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from EU IDs 1 – 4, 8 – [10](#), 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 listed in Table A to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

[18 AAC 50.040(j), & 50.055(a)(1), ~~7/25/08~~; ~~18 AAC~~ & 50.326(j), ~~12/1/04~~]
[40 C.F.R. 71.6(a)(1), ~~7/2/07~~]

- 1.1 For EU IDs 1 – 4, ~~and 8~~ – [10](#), and 12, burn only gas as fuel.

a. ~~Monitoring for these emission units shall consist of a certification i~~In each operating report under ~~condition~~Condition ~~7365~~ indicate whether each of these emissions units burned only gas during the period covered by the report, ~~that each of these emission units fired only gas.~~

~~a.b.~~ Report under ~~condition~~Condition ~~7264~~ if any fuel ~~is burned~~ other than gas ~~is burned in any of these emissions units.~~

- 1.2 For ~~each of~~ EU IDs 20, ~~and 21, 24, 25, 28, 33, and 34, as long as the calendar year operating time of the emissions unit does not exceed the respective threshold in Table C, monitor, record, and report in accordance with Condition 20.4. Otherwise, comply with Condition 1.3.~~

- 1.3 If any of EU IDs 20, 21, 24, 25, 28, 33, or 34 operates for more than the number of hours shown in Table C in one calendar year, the Permittee shall report this occurrence in the operating report under Condition 73 and monitor, record, and report visible emissions for that unit in accordance with ~~conditions~~Conditions 2 – 4 for the remainder of the permit term.

- ~~1.3~~ For each of EU IDs 24, 25, 28, 33, and 34, as long as insignificant and actual emissions do not exceed 5 tons CO, 2 tons each for VOC, NO_x, and SO₂, and 0.75 tons PM-10 per 12-month period, monitor, record, and report in accordance with ~~conditions 17 and 18. Otherwise, monitor, record, and report in accordance with conditions 2 – 4 for the duration of the permit term.~~

- 1.4 For EU ID 37 (flare pilots; IEU), monitor, record, and report in accordance with Condition 20.4.

- ~~1.4.1.5~~ For EU IDs ~~3738~~ – and 39 (flares), monitor, record, and report in accordance with ~~condition~~Condition 5.

[18 AAC 50.040(j), ~~7/25/08~~; ~~18 AAC~~ 50.326(j), ~~12/1/04~~; & 18 AAC 50.346(c), ~~11/9/08~~]
[40 C.F.R. 71.6(a)(3), ~~7/2/07~~]

Commented [Hilcorp-15]: Update Conditions 1 through 5 to generally match Condition 1 of Standard Permit Condition (SPC) VIII and Conditions 1 through 5 of SPC IX as revised July 22, 2020. Differences between our proposed version of these conditions compared to the corresponding conditions in SPC IX are primarily stationary source-specific references to new permit Table C, which provides the operating time thresholds above which the liquid fuel fired emissions units subject to this standard are no longer considered IEUs and removal of the option to use the "smoke/no-smoke" method to assess compliance with the VE standard (because we are not interested in using that option). In addition, where our existing permit language has the same meaning as the language of the SPC, we may not have changed our permit language to exactly match the SPC.

Commented [Hilcorp-16]: Condense permit Condition 1.2 and former Condition 1.3 since all of the listed emissions units typically operate at levels below the insignificant emission unit thresholds. Added reference to new Table C, which identifies the annual operating hours that cause each individual unit to be considered significant emissions units. This provides the Permittee with a value to monitor against to ensure visible emissions monitoring is completed when required.

Commented [Hilcorp-17]: Separate the flare pilots emissions unit (EU ID 37) from the flare emissions units (EU IDs 38 and 39) and make it subject to the SIP standard MR&R that applies to insignificant emissions units, thereby creating new Conditions 1.4 and 1.5. The flare pilots are not flares, so should not be subject to the visible emissions MR&R found in permit Condition 5.

In addition, EU ID 37 is an insignificant emissions unit based on size (18 AAC 50.326(g)(5)) and potential emissions (18 AAC 50.326(e)). It also has no emissions unit-specific limits or other requirements.

Table C - Significant Emissions Unit Thresholds

<u>EU ID</u>	<u>Number of Hours per Calendar Year</u>
20	222
21	222
24	3,252
25	1,026
28	1,613
33	648
34	648

Commented [Hilcorp-18]: Insert new Table C and link to permit Condition 1.2 to provide a tool for monitoring when a visible emissions observation is triggered for listed emissions units, which tend to have limited operation. This will ensure monitoring is completed within the required time frame.

ADEC has used this approach for other Title V permits. It is easier to determine the trigger for conducting RM 9 monitoring using operating time than to use the IEU emissions thresholds that were stated in the Tyonek TVP02 permit.

Visible Emissions Monitoring, Recordkeeping and Reporting

For Liquid Fuel-Fired ~~Emission Units~~ Fuel-Burning Equipment (EU IDs 20, 21, 24, 25, 28, 33, and 34)

2. **Visible Emissions Monitoring.** When required by Condition 1.3 or in the event of replacement¹ during the permit term, the Permittee shall observe the exhaust of EU IDs 20, 21, 24, 25, 28, 33, and 34 for visible emissions using the Method 9 Plan under Condition 2.2. The Permittee shall observe the exhaust of EU IDs 20 and 21 (and units no longer considered insignificant as set out by condition 1.3) for visible emissions using either the Method 9 Plan under condition 2.1 or the Smoke/No-Smoke Plan under condition 2.2. The Permittee may change visible emissions plans for an emission unit at any time unless prohibited from doing so by condition 2.3. The Permittee may continue a visible emission monitoring schedule according to the prevailing schedule in effect from a previous permit at the time a renewed permit is issued.

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(c), 11/9/08]

[40 C.F.R. 71.6(a)(3)(i), 7/2/07]

Commented [Hilcorp-19]: Update existing Conditions 2 through 5 to generally match Conditions 2 through 5 of Standard Permit Condition IX as revised July 22, 2020 without including provisions for using the "smoke/no-smoke" plan. Hilcorp does not intend to use the smoke/no-smoke plan to demonstrate compliance with the visible emissions standard. Where our existing permit language has the same meaning as the language of the SPC, we may not have changed our permit language to exactly match the SPC.

Commented [Hilcorp-20]: Change "Emission Unit" to "Fuel-Burning Equipment" because the monitoring, recordkeeping, and reporting (MR&R) described in Conditions 2 through 5 applies specifically to "fuel-burning equipment." Nonroad engines, which are liquid fuel-fired emissions units at the stationary source and are not "fuel-burning equipment" as defined in 18 AAC 50.990(39), are not subject to the visible emissions standard and are, therefore, also not subject to the MR&R found in Conditions 2 through 5.

¹ Replacement as defined in 40 C.F.R. 51.166(b)(32).

2.1 The Permittee may, for each unit, elect to continue the visible emission monitoring schedule specified in Conditions 2.2b through 2.2d that remains in effect from a previous permit, if applicable.

2.2.2 Method 9 Plan. For all 18-minute observations in this plan, For all observations under this plan, observe the emissions units exhaust, following 40 C.F.R. 60, Appendix A-4, Method 9, adopted by reference in 18 AAC 50.040(a), for 18 minutes to obtain 72 consecutive 15-second opacity observations.²

a. First Method 9 Observation. Except as provided in Condition 2.1, observe the exhaust(s) of EU IDs 20, 21, 24, 25, 28, 33, and/or 34 according to the following:

(i) For any unit, observe exhaust for 18 minutes within 14 calendar days after changing from the Smoke/No-Smoke Plan of condition 2.2. For any units replaced during the term of this permit or for any new units, observe exhaust for 18 minutes within 3060 days of startup the newly installed emissions unit becoming fully operational.³ Except as provided in Condition 2.2e, after the First Method 9 observation, comply with Condition 1.3.

(ii) For each affected emissions unit, observe the exhaust of the emissions unit within 30 days after the end of the calendar month during which monitoring was triggered under Condition 1.3; or for an emissions unit with intermittent operations, within the first 30 days during the unit's next scheduled operation. For any unit no longer considered insignificant as set out by condition 1.3, observe for 18 minutes within 30 days of triggering a change in status.

b. **Monthly Method 9 Observations.** After the first Method 9 observation required by Condition 2.2a(ii), perform 18-minute observations at least once in each calendar month that ~~an~~the emissions unit operates.

c. **Semiannual Method 9 Observations.** After ~~observing emissions for at least three consecutive operating months~~monthly observations under ~~e~~Condition 2.2b2.1b, unless a six-consecutive-minute average opacity is greater than 15 percent and one or more individual observations are greater than 20 percent, ~~observe emissions at least semiannually for 18 minutes; perform semiannual observations:~~

~~Semiannual observations must be taken between four and seven months after the previous set of observations.~~

(i) No later than seven months, but not earlier than five months, after the preceding observation, or

² Visible emissions observations are not required during emergency operations.

³ Fully operational means upon completion of all functionality checks and commissioning after unit installation. Installation is complete when the unit is ready for functionality checks to begin.

- (ii) For an emissions unit with intermittent operations, during the next scheduled operation immediately following seven months after the preceding observation.
- d. **Annual Method 9 Observations.** After at least two semiannual ~~18-minute~~ observations under Condition 2.2c, unless a six-~~consecutive~~-minute average opacity is greater than 15 percent and one or more individual observations are greater than 20 percent, ~~observe emissions at least annually perform~~ observations:

~~Annual observations must be taken between 10 and 13 months after the previous observations.~~

- (i) No later than 14 months and not earlier than 10 months after the preceding observation; or
 - (ii) For an emissions unit with intermittent operations, during the next scheduled operation immediately following 14 months after the preceding observation.
- e. **Increased Method 9 Frequency.** If a six-~~consecutive~~-minute average opacity is observed during the most recent set of observations to be greater than 15 percent and one or more individual observations are greater than 20 percent, then increase or maintain the ~~18-minute~~ observation frequency for that emissions unit to at least monthly intervals, as described in Condition 2.2b, until the criteria in condition 2.1c for semiannual monitoring are met and continue monitoring in accordance with the Method 9 Plan.

2.2 ~~Smoke/No Smoke Plan.~~ ~~Observe the exhaust for the presence or absence of visible emissions, excluding condensed water vapor.~~

- a. ~~Initial Monitoring Frequency.~~ Observe the exhaust during each calendar day that an emission unit operates.
- b. ~~Reduced Monitoring Frequency.~~ After the emission unit has been observed on 30 consecutive operating days, if the emission unit operated without visible smoke in the exhaust for those 30 days, then observe emissions at least once in every calendar month that an emission unit operates.
- e. ~~Smoke Observed.~~ If smoke is observed, either begin the Method 9 Plan of condition 2.1 or perform the corrective action required under condition 2.3.

2.3 ~~Corrective Actions Based on Smoke/No Smoke Observations.~~ ~~If visible emissions are present in the exhaust during an observation performed under the Smoke/No Smoke Plan of condition 2.2, then the Permittee shall either follow the Method 9 plan of condition 2.1 or~~

- a. ~~initiate actions to eliminate smoke from the emission unit within 24 hours of the observation;~~

- b. ~~keep a written record of the starting date, the completion date, and a description of the actions taken to reduce smoke; and~~
- e. ~~after completing the actions required under condition 2.3a,~~
 - (i) ~~take Smoke/No Smoke observations in accordance with condition 2.2~~
 - (A) ~~at least once per day for the next seven operating days and until the initial 30 day observation period is completed; and~~
 - (B) ~~continue as described in condition 2.2b; or~~
 - (ii) ~~if the actions taken under condition 2.3a do not eliminate the smoke, or if subsequent smoke is observed under the schedule of condition 2.3c(i)(A), then observe the exhaust using the Method 9 Plan unless the Department gives written approval to resume observations under the Smoke/No Smoke Plan; after observing smoke and making observations under the Method 9 Plan, the Permittee may at any time take corrective action that eliminates smoke and restart the Smoke/No Smoke Plan under condition 2.2a.~~

3. **Visible Emissions Recordkeeping.** When Method 9 monitoring is conducted, The ~~the~~ Permittee shall keep records as follows:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(ii), 7/2/07]

3.1 ~~If using the Method 9 Plan of condition 2.1~~ For all Method 9 observations,

- a. ~~The~~ the observer shall record the following:
 - (i) the name of the stationary source, emissions unit, and location; ~~stationary source~~ emissions unit type, observer's name, and affiliation; and the date on the Visible Emissions ~~Field Data Sheet~~ Observation Form in ~~Section 11~~ Section 12;
 - (ii) the time, estimated distance to the emissions location, sun location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), plume background, and operating rate (*load or fuel consumption rate* or best estimate if unknown) on the sheet at the time opacity observations are initiated and completed;
 - (iii) the presence or absence of an attached or detached plume and the approximate distance from the emissions outlet to the point in the plume at which the observations are made;
 - (iv) opacity observations to the nearest five percent at 15-second intervals on the Visible Emissions Observation ~~Record Form~~ Record Form in ~~Section 11~~ Section 12, and

- (v) the minimum number of observations required by the permit; each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period;
- b. ~~To~~ determine the six-minute average opacity,
 - (i) divide the observations recorded on the record sheet into sets of 24 consecutive observations;
 - (ii) sets need not be consecutive in time and in no case shall two sets overlap;
 - (iii) for each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24; and
 - ~~b.~~(iv) record the average opacity on the sheet;
- c. ~~e~~Calculate and record the highest six-consecutive-minute and 18-consecutive-minute averages opacities observed.

3.2 ~~If using the Smoke/No Smoke Plan of condition 2.2, record the following information in a written log for each observation and submit copies of the recorded information upon request of the Department:~~

- a. ~~the date and time of the observation;~~
- b. ~~from Table A, the ID of the unit observed;~~
- e. ~~whether visible emissions are present or absent in the exhaust;~~
- d. ~~a description of the background to the exhaust during the observation;~~
- e. ~~if the unit starts operation on the day of the observation, the startup time of the unit;~~
- f. ~~name and title of the person making the observation; and~~
- g. ~~operating rate (load or fuel consumption rate).~~

4. **Visible Emissions Reporting.** When Method 9 monitoring is conducted, The the Permittee shall report visible emissions as follows:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(iii), 7/2/07]

4.1 In the first operating report required under Condition 73 during a new permit term, if applicable the Permittee shall state the intention to either continue the visible emissions monitoring schedule in effect from the previous permit or reset the visible emissions monitoring schedule.

4.14.2 Include in each stationary source operating report required under condition Condition 7365 for the period covered by the report:

Commented [Hilcorp-21]: We propose inserting Condition 4.1 of Standard Permit Condition IX (as revised July 22, 2020) into the TYK operating permit as new Condition 4.1. However, we added "if applicable" to the condition because the reporting required by this condition is only relevant if there are any emissions units at the source that have been subject to ongoing periodic Method 9 observations during the term of a previous permit. Otherwise, there should be no need to include the required information in an operating report.

~~a. which visible emissions plan of condition 2 was used for each emission unit; if more than one plan was used, give the time periods covered by each plan;~~

~~b.a. for all each emission unit under the~~ Method 9 Plan observations,

- (i) copies of the observation results (~~i.e.~~, opacity observations) for each emissions unit ~~that used the Method 9 Plan~~, except for the observations the Permittee has already supplied to the Department; and
- (ii) a summary to include:
 - (A) number of days observations were made;
 - (B) highest six-consecutive-minute and 18-consecutive minute average opacities observed; and
 - (C) dates when one or more observed six-consecutive-minute averages opacities were greater than 20 percent;

~~e. for each unit under the Smoke/No Smoke Plan, the number of days that Smoke/No Smoke observations were made and which days, if any, that smoke was observed; and~~

~~d.b.~~ a summary of any monitoring required under Condition 2 that was not done or recordkeeping required under ~~e~~Conditions 2 and 3 that was not done;

4.24.3 Report under ~~condition~~Condition 7264:

- a. the results of Method 9 observations that exceed ~~an average~~ 20 percent average opacity for any six-consecutive-minute period; and
- b. if any monitoring under ~~condition~~Condition 2 was not performed when required, report within three days of the date the monitoring was required.

For Flares (EU IDs ~~37~~ 38 and 39)

5. Visible Emissions Monitoring, Recordkeeping, and Reporting. The Permittee shall monitor, record, and report as follows:

~~5.5.1~~ Observe one flare events⁴ on EU IDs 38 and 39 for visible emissions following 40 C.F.R. 60, Appendix A-4, Method 9 for 18 minutes to obtain 72 consecutive 15-second opacity observations according to the following schedule: annually and six flare events total occurring during the life of this permit⁵.

Commented [Hilcorp-22]: Remove EU ID 37 from this heading. The flare pilots (EU ID 37) are not flares and should not be subject to the visible emissions MR&R that applies to flares.

⁴ For purposes of this permit, a *flare event* is flaring of gas during daylight for ~~approximately~~greater than one hour as a result of scheduled release operations, ~~i.e.~~, maintenance or well testing activities. It does not include non-scheduled release operations, ~~i.e.~~, process upsets, emergency flaring, or de-minimis venting of gas incidental to normal operations. Approximately is defined as any release with a duration of 50 minutes or more.

⁵ ~~Flare events monitored within 12 months prior to permit effective date may count towards the six event total.~~

- a. Conduct visible emissions observations within 14 months of, but not earlier than three months after, the preceding flare event visible emissions observation.
- b. If there are no flare events that occur during the period specified by Condition 5.1a, the Permittee shall observe the next daylight flare event.

~~5.1 Monitor flare events using Method 9.~~

5.2 Record the following information for each observed events:

- a. ~~the~~ flare(s) EU ID number;
- b. results of the Method-9 observations;
- c. reason(s) for flaring;
- d. date, beginning and ending time of event; and
- e. volume of gas flared.

5.3 The records required by Condition 5.2 may be kept in electronic format.

~~5.3.5.4~~ Monitoring of a flare event may be postponed for safety or weather reasons, or because a qualified observer is not available. ~~Until monitoring has been completed on the six flare events described in this condition, the Permittee shall either monitor each qualifying flare event or include in the next report required by condition 7.165, an explanation of the reason the event was not monitored.~~

~~5.4.5.5~~ Include ~~in the following in the stationary source~~ operating report required by ~~condition~~Condition 7365: for the period covered by the report:

- a. ~~the number of flare events (as defined by condition 5) that occurred during the reporting period; and~~
- a. copies of the records required by eCondition 5.2; and
- b. if an annual flare event observation required by Condition 5.1a has not been fulfilled for the year and/or monitoring of a flare event is postponed, an explanation of the reason the event was not monitored.

5.6 Report under ~~condition~~Condition 7264:

- a. whenever the ~~opacity~~ visible emissions standard in ~~condition~~Condition 1 is exceeded; or
- b. the monitoring required under Condition 5.1 is not completed, except as allowed under Condition 5.4.

~~5.5.7~~ 5.7 If no flare events are monitored during a certification period, the Permittee shall certify compliance under Condition 74 with the visible emissions standard in Condition 1 and the particulate matter standard in Condition 6 based on reasonable inquiry.

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(34), & 50.346(c), 12/1/04]
[40 C.F.R. 71.6(a)(3)(i) – (iii) & (e)(6), 7/2/07]

Particulate Matter Emissions Standards

6. **Industrial Process and Fuel-Burning Equipment Particulate Matter Emissions.** The Permittee shall not cause or allow particulate matter emitted from EU IDs 1 – 4, 8 –~~10~~, 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 listed in Table A to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.040(j)(4), & 50.055(b)(1), 7/25/08; 18 AAC 50.326(j)(3) & 50.346(c), 12/1/04]
[40 C.F.R. 71.6(a)(1), 7/2/07]

- 6.1 For EU IDs 1 – 4 and 8 –~~10~~, and 12, the Permittee shall comply with Condition 1.1, burn only gas as fuel. Monitoring for these emission units shall consist of a certification in each operating report under condition 65 that each of these emission units fired only gas. Report under condition 64 if any fuel is burned other than gas.
- 6.2 For each of EU IDs 20, 21, 24, 25, 28, 33, and 34, ~~20 and 24 as long as the calendar year operating time of the emissions unit does not exceed the respective threshold in Table C, monitor, record, and report in accordance with Condition 20.4. Otherwise, comply with Condition 6.3.~~
- 6.3 If any of EU IDs 20, 21, 24, 25, 28, 33, or 34 operates for more than the number of hours shown in Table C in one calendar year, the Permittee shall report this occurrence in the operating report under Condition 73 and monitor, record, and report in accordance with Conditions 7 through 9 for that emissions unit for the remainder of the permit term.
- 6.3 ~~For each of EU IDs 24, 25, 28, 33, and 34, as long as insignificant and actual emissions do not exceed 5 tons CO, 2 tons each for VOC, NOx, and SO₂, and 0.75 tons PM 10 per 12-month period, monitor, record, and report in accordance with conditions 17 and 19. Otherwise, monitor, record, and report in accordance with conditions 7 – 8 for the duration of the permit term.~~
- 6.4 For EU ID 37 (flare pilots; IEU), monitor, record, and report in accordance with Condition 20.4.
- ~~6.4.5~~ 6.5 For EU IDs ~~37 – 38 and 39~~ (flares), the Permittee shall comply with Condition 5 ~~must annually certify compliance under condition 66 with the particulate matter standard.~~

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3), 7/2/07]

Commented [Hilcorp-23]: Condition 6.4 of the proposed TVP03 permit, as updated to incorporate the provisions of Condition 6 of Standard Permit Condition IX as revised July 22, 2020, states that for flares subject to the particulate matter standard, the Permittee shall comply with Condition 6 of the operating permit. Therefore, new Condition 5.7 of the TYK operating permit should instruct the Permittee to certify compliance with both the visible emissions standard and the particulate matter standard based on reasonable inquiry if no VE observations are completed during the period covered by the compliance certification report. Therefore, our proposed Condition 5.7 differs from Condition 5.7 of SPC IX.

Commented [Hilcorp-24]: Update existing Conditions 6 through 8 and add a new Condition 8 to generally match Condition 2 of Standard Permit Condition VIII and Conditions 6 through 9 of Standard Permit Condition IX as revised July 22, 2020. Where our existing permit language has the same meaning as the language of the SPC, we may not have changed our permit language to exactly match the SPC.

Commented [Hilcorp-25]: Separate the flare pilots emissions unit (EU ID 37) from the flare emissions units (EU IDs 38 and 39) and make it subject to the SIP standard MR&R that applies to insignificant emissions units, thereby creating new Conditions 6.4 and 6.5. The flare pilots are not flares, so should not be subject to the visible emissions/ particulate matter MR&R found in permit Condition 5.

In addition, EU ID 37 is an insignificant emissions unit based on size (18 AAC 50.326(g)(5)) and potential emissions (18 AAC 50.326(e)). It also has no emissions unit-specific limits or other requirements.

Particulate Matter Monitoring, Recordkeeping and Reporting

For Liquid Fuel-Fired ~~Diesel~~ Engines (EU IDs 20, 21, 24, 25, 28, 33, and 34)

7. **Particulate Matter Monitoring**~~for Diesel Engines~~. When required by Condition 6.3, ~~the~~ Permittee shall conduct source tests on ~~diesel-liquid fuel-fired~~ engines, EU IDs 20, 21, 24, 25, 28, 33, and 34 ~~and 20 and 21 (and engines no longer considered insignificant as set out by condition 6.3)~~, to determine the concentration of particulate matter (PM) in the exhaust ~~of the emissions unit in accordance with this condition 7 as follows:~~

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(i), 7/2/07]

7.1 If the result of any Method 9 observation conducted under Condition 2.2 for any of EU IDs 20, 21, 24, 25, 28, 33, and 34 is greater than the criteria of Condition 7.2a or 7.2b, the Permittee shall, within six months of that Method 9 observation, either:

~~7.1 Within six months of exceeding the criteria of conditions 7.2a or 7.2b, either~~

- a. Except as exempted under Condition 7.4, conduct a PM source test according to requirements set out in Section 6; or
 - b. take corrective action and observe the emissions unit exhaust make repairs so that emissions no longer exceed the criteria of condition 7.2; to show that emissions are below those criteria, observe emissions as described in condition 2.4 under load conditions comparable to those when the criteria were exceeded, following 40 C.F.R. 60, Appendix A-4 Method 9 for 18 minutes to obtain 72 consecutive 15-second opacity observations, to show that emissions are no longer greater than the criteria of Condition 7.2.
- 7.2 Take corrective action or conduct a PM source test~~Conduct the test according to condition in accordance with Condition 7.1 if any Method 9 observation under Condition 2.2 results in an 18-minute average opacity greater than~~
- a. 20 percent for an emissions unit with an exhaust stack diameter that is equal to or greater than 18 inches~~18 consecutive minutes of Method 9 observations result in an 18-minute average opacity greater than 20 percent; or~~
 - b. 15 percent for an emissions unit with an exhaust stack diameter that is less than 18 inches~~for an emission unit with an exhaust stack diameter that is less than 18 inches, 18 consecutive minutes of Method 9 observations result in an 18-minute average opacity that is greater than 15 percent and not more than 20 percent, unless the Department has waived this requirement in writing.~~
- 7.3 During each one-hour PM source test run under Condition 7.1a, observe the emissions unit exhaust for 60 minutes in accordance with Method 9 and calculate the highest average~~618-consecutive-minute average~~ opacity ~~that was~~ measured during each one-hour test run. Submit a copy of these observations with the source test report.

7.4 The ~~automatic~~ PM source test requirement in ~~condition~~ Conditions 7.1a-7.1 and 7.2 is waived for an emissions unit if:

a. a PM source test on that unit has shown compliance with the PM standard during this permit term; or

7.4b. corrective action was taken to reduce visible emissions and two consecutive 18-minute Method 9 visible emissions observations conducted thereafter within a six-month period show visible emissions less than the applicable threshold in Condition 7.2.

8. **Particulate Matter Recordkeeping.** The Permittee shall keep records of the results of any source test and visible emissions observations conducted under Condition 7.

[18 AAC 50.040(j)(4), 50.326(j)(3) & 50.346(c)]
[40 CFR 71.6(a)(3)(ii)]

8.9. **Particulate Matter Reporting for Diesel Engines.** The Permittee shall report as follows:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(c), 11/9/08]
[40 C.F.R. 71.6(a)(3)(iii), 7/2/07]

8.9.1 Report under ~~condition~~ Condition 7.2

- a. anytime the results of any PM source test ~~that exceeds~~ the PM emissions ~~limit~~ standard in Condition 6; or
- b. if ~~one of the criteria of condition 7.2 was exceeded~~ the requirements under Condition 7.1 were triggered and the Permittee did not comply on time with either ~~condition~~ Condition 7.1a or 7.1b, ~~this must be reported by the day~~ Report the deviation within 24 hours following of the day date compliance with ~~condition~~ Condition 7.1 was required.

8.9.2 Notify the Department of any Method 9 observation results that are greater than the threshold of either Condition 7.2a or 7.2b within 30 days of the end of the month in which the observations occurred. Include the dates, EU ID(s), and results when an observed 18-minute average opacity was greater than an applicable threshold in Condition 7.2. ~~Report observations in excess of the threshold of condition 7.2b within 30 days of the end of the month in which the observations occur;~~

8.9.3 In each ~~stationary source~~ operating report under ~~condition~~ Condition 7.3, include for the period covered by the report:

- a. the dates, EU ID(s), and results when an observed 18 minute average was greater than an applicable threshold in condition 7.2;
- b.a. a summary of the results of any PM source testing and visible emissions observations conducted under ~~condition~~ Condition 7; and

Commented [Hilcorp-26]: We do not propose adding Condition 8.1 of Standard Permit Condition IX to this condition because all stack diameters of liquid fuel fired fuel burning equipment at TYK have been reported to the Department.

- e.b. copies of any visible emissions observation results (~~opacity observations~~) greater than the thresholds of ~~condition~~Condition 7.2, if they were not already submitted.

Sulfur Compound Emission Standards Requirements

9.10. Sulfur Compound Emissions. ~~In accordance with 18 AAC 50.055(c),~~ The Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from EU IDs 1 – 4, 8 – 10, 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 to exceed 500 ppm averaged over three hours.

[18 AAC 50.040(j)(4), & 50.055(c), 7/25/08; 18 AAC 50.326(j)(3), & 50.346(c), 12/1/04]
[40 C.F.R. 71.6(a)(1), 7/2/07]

For Fuel Oil-Fired Emissions Units

~~9.4~~10.1 The Permittee shall comply with the fuel sulfur content limit of 0.25 percent sulfur by weight as required by ~~condition~~Condition 16.43.7.

10.2 The Permittee shall monitor, keep records, and report as required by ~~condition~~Conditions 16.243.2 through 16.543.5.

10.3 If a shipment of fuel contains greater than 0.75 percent sulfur by weight or the results of a fuel sulfur content test indicate that the fuel contains greater than 0.75 percent sulfur by weight, the Permittee shall calculate SO₂ emissions in PPM using Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a)(3).

10.4 If SO₂ emissions calculated under Condition 10.3 exceed 500 ppm, the Permittee shall report under Condition 72. The report shall document the calculation under Condition 10.3.

~~9.2~~10.5 For fuel with sulfur content greater than 0.75 percent by weight, the Permittee shall include in the operating report required by Condition 73 the SO₂ emissions in PPM calculated under Condition 10.3.

~~9.3 Report as excess emissions, in accordance with condition 64, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of condition 9. When reporting under this condition, include the calculated SO₂ emissions in ppm using Method 19 of 40 C.F.R. 60, Appendix A-7, adopted by reference in 18 AAC 50.040(a).~~

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j)(3), & 50.346(c), 12/1/04]
[40 C.F.R. 71.6(a)(3) & (c)(6)e(6), 7/2/07]

Commented [Hilcorp-27]: Update the citation date or delete the phrase "effective 7/1/07" entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.

Commented [Hilcorp-28]: Edit this footnote to add a sentence to clarify that an exceedance of the liquid fuel sulfur content limit does not necessarily mean that the SIP sulfur compound standard has been exceeded.

Commented [Hilcorp-29]: Replace Condition 9.3 with the corresponding provisions of Standard Permit Condition XI that are not addressed under Conditions 13.2 through 13.5 of the TVP02 permit (Conditions 16.2 through 16.5 of the proposed TVP03 permit). The inserted conditions spell out when and how to determine if the fuel combusted causes sulfur compound emissions to exceed the standard.

Commented [Hilcorp-30]: Correct typographical error.

⁶ Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil, as defined in 40 C.F.R. 60.41b, effective 7/1/07.

⁷ Compliance with the fuel sulfur limit of ~~condition~~Condition 16.43 will assure compliance with the 500-ppm SO₂ emission limit of ~~condition~~Condition 109. However, an exceedance of Condition 16 does not necessarily result in an exceedance of the emission limit in Condition 10.

Permit No. [AQ0091TVP02AQ0091TVP03](#)
Tyonek Platform
Revision 1: November 1, 2016

Issued: [March 31, 2009](#)<insert date>
Expires: [March 31, 2014](#)<insert date>

For Fuel Gas⁸-Fired Emissions Units

~~9.4.10.6~~ The Permittee shall comply with the fuel hydrogen sulfide content limit of 200-ppm hydrogen sulfide as required by ~~condition~~Condition ~~1643~~.⁹

~~9.5.10.7~~ The Permittee shall monitor, keep records, and report as required by ~~condition~~Conditions ~~16.143.4~~, ~~16.413.4~~, and ~~16.513.5~~.

~~9.6.10.8~~ Report as excess emissions, in accordance with ~~condition~~Condition ~~7264~~, whenever the fuel combusted causes sulfur compound emissions to exceed the standard of ~~condition~~Condition ~~109~~.

[18 AAC 50.040(j)(~~4~~), 7/25/08; 18 AAC & 50.326(j)(~~4~~), 12/1/04]
[40 C.F.R. 71.6(a)(3) & ~~s(6)(c)(6)~~, 7/2/07]

Title I-Preconstruction¹⁰ Permit Requirements

Ambient Air Quality Protection Limits

~~10.11.~~ The Permittee shall not place a total cumulative rating of more than 12,000 hp of non-road engines upon the Tyonek Platform except as indicated in ~~condition~~Condition ~~1244~~.

[Minor Permit No. AQ0091MSS03MSS01 Rev. 1, [Condition 7, 11/1/1644/2/08](#)]

~~10.11.1~~ Maintain a written inventory for each non-road reciprocating internal combustion engine on-platform listing the following parameters: make, model, and rated capacity (BHp). Once each month calculate the total installed non-road engine capacity by summing the rated capacity of each unit on-platform.

~~10.211.2~~ Report for each month the total installed non-road engine capacity on-platform for each calendar month in the operating report required by ~~condition~~Condition ~~7065~~.

~~10.311.3~~ Report under ~~condition~~Condition ~~7264~~ whenever the non-road engine capacity limit of ~~condition~~Condition ~~1140~~ is exceeded as determined by a calculation performed under ~~condition~~Condition ~~11.140.4~~.

[18 AAC 50.040(j)(~~4~~), 7/25/08; 18 AAC & 50.326(j)(~~4~~), 12/1/04]
[40 C.F.R. 71.6(a)(~~1~~), (a)(3) & ~~s(6)(c)(6)~~, 7/2/07]

Commented [Hilcorp-31]: Update the citation date or delete the phrase "effective 7/1/07" entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.

Also, while the definition of "natural gas" is the same in 40 CFR 60.41b and 40 CFR 60.41c, we suggest referring to 40 CFR 60.41b in this footnote to be consistent with the reference to 40 CFR 60.41b in the previous footnote that provides the definition for "oil".

Commented [Hilcorp-32]: Edit Footnote 6 (Footnote 9 in the proposed permit) to include a brief note on when excess emissions reporting required under Condition 9.6 could be applicable.

Commented [Hilcorp-33]: Correct typographical error.

Commented [Hilcorp-34]: Correct typographical error.

Commented [Hilcorp-35]: Update to reflect the language used by the Department in other Title V permits, including the addition of new Footnote 10.

Commented [Hilcorp-36]: Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.

Commented [Hilcorp-37]: Correct typographical error.

⁸ Fuel gas has the definition of "natural gas" taken from 40 C.F.R. 60.41b, effective 7/1/07.

⁹ Compliance with the fuel sulfur limit of ~~condition~~Condition ~~1643~~ will assure compliance with the 500-ppm SO₂ emission limit of ~~condition~~Condition ~~109~~. Fuel gas containing no more than 4000 ppm H₂S will comply with this emission standard at stoichiometric or excess air combustion conditions. See the Factual Basis for Condition 10 in the Statement of Basis that accompanies this permit.

¹⁰ "Pre-Construction" refers to permits issued pursuant to regulations approved or promulgated through rulemaking under Title I of the Act, including State and Federal PSD permits and State-issued Permits-to-Operate (prior to January 18, 1997), construction permits issued effective January 18, 1997 or later, and minor permits issued effective October 1, 2004 or later.

~~14.12.~~ 14.12. The Permittee may increase the non-road engine cumulative hp limit in ~~Condition 1140~~ Condition 1140 upon written Department approval. To obtain approval, the Permittee shall submit a proposed threshold; and an ambient demonstration that demonstrates that the stationary source will still comply with the ambient air quality standards and increments for the following pollutants of concern: nitrogen dioxides, sulfur dioxide, and particulate matter at the proposed threshold. Submit the proposed threshold and the required ambient modeling demonstration to the Construction Permits Supervisor, Air Quality Division, 619 East Ship Creek, Suite 249, Anchorage, AK 99501.

[Minor Permit No. AQ0091MSS03MSS01 Rev. 1, [Condition 8, 11/1/1611/12/08](#)]
[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(1), (a)(3), & (c)(6), 7/2/07]

13. Liquid Fuel Sulfur Content Limit, Drill Rig Emissions Units (EU IDs S1 – S11, S13, S14). To protect the 1-hour, 3-hour, 24-hour and annual SO₂ AAAQS, the Permittee shall limit the sulfur content of the liquid fuel burned by the Spartan 151 Drill Rig emissions units, listed in Table B, to no more than 15 ppmw.

Commented [Hilcorp-38]: Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.

Commented [Hilcorp-39]: Add this new condition to carry forward the provisions of Minor Permit AQ0091MSS04, Condition 4 that apply to the Spartan 151 Drill Rig when operating at the Tyonek Platform.

13.1 The Permittee shall do one of the following for each shipment of fuel for the Spartan 151 Drill Rig:

- a. If the fuel grade requires a sulfur content of 15 ppmw or less, keep receipts that specify the fuel grade and amount of fuel; or
- b. If the fuel grade does not require a sulfur content of 15 ppmw or less, keep receipts that specify the fuel grade and amount of fuel, and:
 - (i) Test the fuel for sulfur content; or
 - (ii) Obtain test results showing the sulfur content of the fuel from the supplier or refinery; the test results must include a statement signed by the supplier or refinery of what fuel they represent.

13.2 Fuel testing under Condition 13.1b must follow an appropriate method listed in 18 AAC 50.035(b)-(c) or 40 C.F.R. 60.17 incorporated by reference in 18 AAC 50.040(a)(1).

13.3 Report in each operating report required by Condition 73, for the period covered by the report:

- a. a list of the fuel grades received for combustion by the Spartan 151 Drill Rig emissions units; and
- b. copies of any test results obtained in accordance with Condition 13.1b.

13.4 Report as described in Condition 72 any time the sulfur content of any liquid fuel delivered for combustion by the Spartan 151 drill rig emissions units exceeds the limit in Condition 13.

[Minor Permit AQ0091MSS04, Condition 4, 12/23/2020]

14. Drill Rig NREs Rated Capacity Limit. To protect the annual NO₂, 24-hour PM₁₀, annual PM_{2.5}, and 1-hour, 3-hour, 24-hour and annual SO₂ AAAQS, the Permittee shall:

14.1 Limit the cumulative rated capacity of the drill rig nonroad engines at Tyonek Platform to no more than 8,615 bHp.

- Any time a change is made to the drill rig nonroad engine emissions unit inventory, calculate and record the cumulative drill rig nonroad engine rated capacity.
- Include the cumulative drill rig nonroad engine rated capacity in each operating report required under Condition 73 for each month of the reporting period.
- Report in accordance with Condition 72 any time the cumulative drill rig nonroad engine rated capacity exceeds the limit in Condition 14.1.

[Minor Permit AQ0091MSS04, Condition 5, 12/23/2020]

Owner Requested Limits to Avoid Classification as PSD Major

12.15. The Permittee shall limit the combined oxides of nitrogen (NO_x) emissions, expressed as nitrogen dioxide (NO₂), from EU IDs 20, 21, 24, 25, 28, 33, and 34 to no greater than 20.2 tons per 12-month period as follows:

~~12.15.1~~ Limit fuel consumption for these emissions units such that the following equation holds true:

$$\frac{\left(0.45 \frac{\text{lb}}{\text{gal}}\right)(FC_{20,21}) + \left(0.62 \frac{\text{lb}}{\text{gal}}\right)(FC_{24,25}) + \left(0.58 \frac{\text{lb}}{\text{gal}}\right)(FC_{28}) + \left(0.51 \frac{\text{lb}}{\text{gal}}\right)(FC_{33,34})}{2000 \frac{\text{lb}}{\text{ton}}} \leq 20.2 \frac{\text{ton}}{\text{yr}} \text{NO}_x$$

$$\frac{\left(0.45 \frac{\text{lb}}{\text{gal}} \times FC_{20,21}\right) + \left(0.07 \frac{\text{lb}}{\text{gal}} \times FC_{24}\right) + \left(0.15 \frac{\text{lb}}{\text{gal}} \times FC_{25}\right) + \left(0.58 \frac{\text{lb}}{\text{gal}} \times FC_{28}\right) + \left(0.51 \frac{\text{lb}}{\text{gal}} \times FC_{33,34}\right)}{2,000 \frac{\text{lb}}{\text{ton}}} \leq 20.2 \text{ tpy NO}_x$$

Where:

FC_{20, 21} = total fuel consumption per rolling 12-month period for EU IDs 20 and 21

FC_{24, 25} = total fuel consumption per rolling 12-month period for EU IDs 24 and 25

FC₂₅ = total fuel consumption per rolling 12-month period for EU ID 25

FC₂₈ = total fuel consumption per rolling 12-month period for EU ID 28

FC_{33, 34} = total fuel consumption per rolling 12-month period for EU IDs 33 and 34

~~12.2~~15.2 Monitor the diesel fuel use for each emissions unit. The fuel use shall be measured via a fuel meter with a minimum accuracy of plus or minus five percent, or estimated by measurement techniques and calculations approved by the Department.

Commented [Hilcorp-40]: Add this new condition to carry forward the provisions of Minor Permit AQ0091MSS04, Condition 5 that apply to the Spartan 151 Drill Rig when operating at the Tyonek Platform.

Commented [Hilcorp-41]: Update to match the equation provided in our 12/20/2022 application to revise Minor Permit AQ0091MSS03, Rev 1.

15.3 Monitor the monthly (calendar) and rolling 12-month hours of operation of each emissions unit.

~~12.3~~ 15.4 Maintain records of the monthly (calendar) and rolling 12-month fuel use for each emissions unit. Using the rolling 12-month fuel use, calculate and record the combined NOx emissions from each emissions unit using the equation in ~~condition~~ Condition 15.1+2+4. Calculations shall be performed on a monthly (calendar) basis.

~~12.4~~ Monitor the monthly (calendar) and rolling 12-month hours of operation of each emission unit.

~~12.5~~ 15.5 Maintain records of the monthly (calendar) and rolling 12-month hours of operation ~~of for~~ each emissions unit.

~~12.6~~ 15.6 If, during the period being reported, any one or more of the fuel meters for EU IDs 20, 21, 24, 25, 28, 33 and 34 did not function for any period of time when fuel is being supplied to the emissions unit for the purpose of combustion, then:

- a. Using the monthly (calendar) and the rolling 12-month hours of operation, calculate and record the combined NOx emissions from EU IDs 20, 21, 24, 25, 28, 33 and 34 using the maximum NOx emission rates in lb/hr shown in the table below, listed in Section 11.

EU ID	20	21	24	25	28	33	34
Maximum NOx Emission Rate (lb/hr)	18.0	18.0	1.23	3.9	2.5	6.2	6.2

- ~~a-b.~~ Report the rolling 12-month consecutive NOx emissions calculated under Condition 15.6a and the monthly hours (calendar) of operation for EU IDs 20, 21, 24, 25, 28, 33 and 34 in the operating report required by ~~condition~~ Condition 7365 for the period covered by the report.

~~12.7~~ 15.7 Report the combined 12-month consecutive NOx emissions and the rolling 12-month fuel usage from EU IDs 20, 21, 24, 25, 28, 33 and 34 in the operating report required by ~~condition~~ Condition 7365 for the period covered by the report.

~~12.8~~ 15.8 Report as described in ~~condition~~ Condition 7264 any time the NOx limit in ~~condition~~ Condition 15+2 is exceeded.

[Minor Permit No. AQ0091MSS03MSS01 Rev. 12, Condition 9, {Date TBD} 11/12/08]
[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(1), (a)(3) & 6(6)(c)(6), 7/2/07]

~~13.16.~~ The Permittee shall limit the sulfur content of the gaseous fuel burned at the stationary source to 200 ppmv hydrogen sulfide (H₂S) and the liquid fuels burned by EU IDs 20, 21, 24, 25, 28, 33, and 34 to 200 ppm hydrogen sulfide (H₂S) and 0.25 percent sulfur by weight, respectively.

~~13.16.1~~ Measure the H₂S content of the process or natural gas burned as fuel using ASTM D 4810-88, ASTM D 4913-89, or Gas Producers Association (GPA) method 2377-86 once every six months.

Commented [Hilcorp-42]: Former Condition 12.4 appears in the minor permit before former Condition 12.3; therefore, we ask that the Department change the condition order in the Title V permit to be consistent with the minor permit.

In addition, this will result in the monitoring conditions being grouped together and the recordkeeping conditions being grouped together.

Commented [Hilcorp-43]: Revise to match Condition 9.7a and Table 2 from Minor Permit AQ0091MSS03, Rev. 1 and change the maximum NOx emission rate for EU ID 25 from 1.48 lb/hr to 3.9 lb/hr as documented on page D-2 of our 12/20/2022 application to revise Minor Permit AQ0091MSS03, Rev 1.

Commented [Hilcorp-44]: Revise as shown to clarify the reporting requirement.

Commented [Hilcorp-45]: Revise as shown to clarify the reporting requirement.

Commented [Hilcorp-46]: Update the citation to refer to Minor Permit AQ0091MSS03, Revision 2, which we anticipate will be issued in response to our 12/20/2022 application to revise Minor Permit AQ0091MSS03, Revision 1. Permit AQ0091MSS03 replaced Minor Permit AQ0091MSS01.

Commented [Hilcorp-47]: Correct typographical error.

Commented [Hilcorp-48]: List the specific emissions units that are subject to the liquid fuel 0.25 wt% sulfur content limit to distinguish the liquid fuel sulfur content limit in this condition from the ULSD fuel sulfur content limit that applies to the Spartan 151 drill rig emissions units.

Also, correct the units associated with the natural gas limit from "ppm" to "ppmv". See Condition 10 of permit no. AQ0091MSS03.

Commented [Hilcorp-49]: Remove the year designations from the approved analytical methods shown in this condition. The corresponding condition in Minor Permit AQ0091MSS03, Rev. 1 (Condition 10.2) does not include the year designations. This is appropriate because the methods are occasionally updated, and labs typically update their processes to match the latest version of the methods. Removing the year designations means that there is no question as to whether or not using an updated version of the method to conduct the fuel analyses is acceptable.

~~13.2~~16.2 For each shipment of distillate fuel:

- a. if the fuel grade requires a sulfur content ~~less than~~ 0.25 percent sulfur by weight or less, keep receipts that specify the fuel grade and amount received; or
- b. if the fuel grade does not require a sulfur content ~~less than~~ 0.25 percent by weight or less, keep receipts that specify the fuel grade and amount received, and
 - (i) test the fuel for sulfur content; or
 - (ii) obtain test results showing the sulfur content of the fuel from the supplier or refinery; the test results must include a statement signed by the supplier or refinery of what fuel they represent ^{H1}; or
- (ii)c. As an alternative to complying with Condition 16.2a or Condition 16.2b, test the sulfur content of the fuel in each storage tank that supplies fuel to EU IDs 20, 21, 24, 25, 28, 33, and 34 at least monthly.

~~13.3~~16.3 Perform the ~~fuel~~ testing under ~~condition~~Condition 16.2b(i)~~13.2b(i)~~ by following must follow an appropriate method listed in 18 AAC 50.035(b)-(c) or 40 C.F.R. 60.17 incorporated by reference in 18 AAC 50.040(a)(1)~~another method approved in writing by the Department.~~

~~13.4~~16.4 Maintain records of each H₂S content analysis of gaseous fuel obtained under ~~condition~~Condition 16.143.1, and records of the sulfur content of each distillate fuel delivery obtained under ~~condition~~Condition 16.243.2.

~~13.5~~16.5 Report in each operating report required by ~~condition~~Condition 7365, the results of each H₂S content analysis of gaseous fuel obtained under ~~condition~~Condition 16.143.1, and the sulfur content of each distillate fuel delivery obtained under ~~condition~~Condition 16.243.2 for the period covered by the report.

~~13.6~~16.6 Report as described in ~~condition~~Condition 7264 any time the fuel H₂S concentration or sulfur content exceeds the limits of ~~condition~~Condition 1643.

[Minor Permit No. AQ0091MSS03MSS04 Rev. 1, Condition 10, 11/1/1644/12/08]
[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(1), (a)(3) & (6)(c)(6), 7/2/07]

14.17. The Permittee shall limit the natural gas consumption for:

- a. Solar Centaur T-4700 Turbines (EU IDs 1 and 2) to a combined use not to exceed 805 million standard cubic feet (MMscf) per rolling 12-month period;
- b. Glycol Heaters (EU IDs 10, ~~11~~, and 12) to a combined use not to exceed 195 MMscf per rolling 12-month period; and

Commented [Hilcorp-50]: Delete this footnote. The error mentioned in the note was corrected upon issuance of Minor Permit AQ0091MSS03, so the note is no longer relevant.

Commented [Hilcorp-51]: Update the permit condition language to more closely reflect the language found in Standard Permit Condition XI.

Insert "received" as noted in the permit markup to add clarity to the conditions/ requirement.

Commented [Hilcorp-52]: Revise as shown to clarify the reporting requirement.

Commented [Hilcorp-53]: Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.

Commented [Hilcorp-54]: Correct typographical error.

^{H1} Corrected this Title I provision by deleting reference to MR&R based on a fuel grade less than 0.5 percent sulfur. Since the sulfur limit is 0.25 percent, the sulfur content must be identified on a fuel grade of less than 0.25 percent.

- c. Gas Production Flares (EU IDs 38 and 39) to a combined throughput not to exceed 252 MMscf per rolling 12-month period¹².

~~14.17.1~~ **Monitoring.** Monitor the natural gas consumption for EU IDs 1, 2, 10, ~~through~~ 12, 38, and 39. The ~~fuel-natural~~ gas shall be measured via a fuel meter with a minimum accuracy of plus or minus five percent, or estimated by measurement techniques and calculations approved by the Department.

17.2 Recordkeeping. Maintain records of

- a. the monthly and rolling 12-month combined natural gas consumption for EU IDs 1 and 2.
- b. ~~Maintain records of~~ the monthly and rolling 12-month combined natural gas consumption for EU IDs 10 ~~through and~~ 12.
- ~~a-c.~~ ~~Maintain records of~~ the monthly and rolling 12-month combined natural gas consumption for EU IDs 38 and 39.

~~14.217.3~~ **Reporting.** Report in the operating report required by ~~econdition~~ Condition 7365 for the period covered by the report,

- a. the monthly and rolling 12-month combined natural gas consumption for EU IDs 1 and 2;
- b. the monthly and rolling 12-month combined natural gas consumption for EU IDs 10 ~~through and~~ 12; and
- ~~a-c.~~ the monthly and rolling 12-month combined natural gas consumption for EU IDs 38 and 39.

~~14.317.4~~ Report as described in ~~econdition~~ Condition 7264 any time the natural gas consumption limits in ~~econdition~~ Condition 1744 are exceeded.

[Minor Permit No. AQ0091MSS03MSS04 Rev. 1, Condition 11, 11/1/16+12/08]
[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(1), (a)(3) & ~~6(6)(c)(6)~~, 7/2/07]

Best Available Control Technology (BACT) Limits for NOx

~~15.18.~~ The Permittee shall operate the Solar Taurus 60 T-7300S Turbines, EU IDs 3 and 4, only in the dry low NOx mode, except during low-load transient operations of ~~start~~ ~~upstartup~~ and ~~shut-down~~ shutdown.

~~15.118.1~~ When the turbine is operating in the low NOx mode as set out in ~~econdition~~ Condition 1845, limit NOx emissions of each unit to no greater than 25 parts per million by volume, dry (ppmvd) at 15 percent O₂ and 6.2 lb/hr, expressed as NO₂, averaged over any three consecutive hours.

Commented [Hilcorp-55]: Add clarity by revising the language to change "per 12-month period" to "per rolling 12-month period" in the limit description for EU IDs 1 and 2 and EU IDs 38 and 39 to match the limit description for EU IDs 10 and 12. Also, delete the reference to EU ID 11, which is no longer in service.

Commented [Hilcorp-56]: Delete this footnote. The error mentioned in the note has been corrected in Minor Permit AQ0091MSS03, Revision 1, so the note is no longer relevant.

Commented [Hilcorp-57]: Reformat and reorganize these conditions to add clarity to the permit. Also, update the language to match the language of Minor Permit AQ0091MSS03, Rev. 1, Conditions 11.2 and 11.3.

Commented [Hilcorp-58]: Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.

Commented [Hilcorp-59]: Correct typographical error.

¹² Corrected this Title I provision by deleting reference to the Well Test Flare (old EU ID 40) as the unit has been removed from the stationary source.

~~15.2~~18.2 Conduct source tests on EU IDs 3 and 4 to ensure compliance with the NO_x BACT limit of ~~condition~~[Condition 18.145.1](#) as set out by ~~condition~~[Condition 29.129.1](#). Keep records and report as indicated in ~~condition~~[Conditions 29.229.2](#) and [29.329.3](#).

~~15.3~~18.3 Monitor for non-dry low NO_x mode operation, which is indicated by the presence of a P1 pilot flame¹³. Record the date, time, and duration for which the P1 pilot flame is present for EU IDs 3 and 4.

~~15.4~~18.4 Monitor and record the date, time, and duration when either EU ID 3 or 4 is in transient operations of [start-up](#)~~startup~~ and [shut-down](#)~~shutdown~~ mode.

~~15.5~~18.5 ~~Report~~[Include](#) in each operating report required by ~~condition~~[Condition 7365](#), ~~for the period covered by the report:~~

a. the date, time, duration, and emission~~s~~ unit number if either EU ID 3 or 4 is operating, but not in the low NO_x mode. Specify whether each non-dry low NO_x mode operation was during [startup](#)~~start-up~~, [shutdown](#)~~shut-down~~, or another activity~~;~~

b. ~~Submit a summary report of events resulting from in the operation of EU ID 3 or 4 out of low NO_x mode.~~¹⁴

~~15.6~~18.6 Report as an excess emission as set out in ~~condition~~[Condition 7264](#):

- all ~~other~~ activities (i.e., other than [start-up](#)~~startup~~ and [shut](#)~~shut~~down) that result in operation out of the low NO_x mode for more than 6 minutes in any 3-hour period; and
- if the source test results of ~~condition~~[Condition 18.245.2](#) show an exceedance of the limit of ~~condition~~[Condition 18.145.1](#).

[Minor Permit No. AQ0091MSS03MSS01 Rev. 1, [Condition 12, 11/1/1611/12/08](#)]
[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(1), (a)(3), & (c)(6), 7/2/07]

Specific Operational Limits

~~16.19.~~ The Permittee shall operate and maintain the two Waukesha natural gas-fired generators (EU IDs 8 and 9) with air-fuel controllers and catalytic converters.

~~16.1~~19.1 ~~Certify~~[State](#) in each operating report under ~~condition~~[Condition 7365](#) ~~that whether~~ each of these emission~~s~~ units ~~were~~[is](#) operated with air-fuel controllers and catalytic converters.

¹³ Corrected this Title I provision by replacing the word “absence” with “presence”; non-dry low NO_x is indicated by a present flame.

¹⁴ Corrected this Title I provision by replacing “events resulting from the operation of EUs 3 or 4 out of low NO_x mode” with “events resulting in the operation of EUs 3 or 4 out of low NO_x mode.” The information of interest is what events caused the units to operate out of low NO_x mode, not what events were caused by operation of these units out of low NO_x mode.

Commented [Hilcorp-60]: Delete this footnote. The error mentioned in the note has been corrected in Minor Permit AQ0091MSS03, Revision 1, so the note is no longer relevant.

Commented [Hilcorp-61]: Revise as shown to clarify the reporting requirement.

Commented [Hilcorp-62]: Reformat and reorganize this condition to add clarity to the permit.

Commented [Hilcorp-63]: Add new Footnote 14 to document a change made to this condition when carried forward from Minor Permit no. AQ0091MSS03, Rev 1, Condition 12.

Commented [Hilcorp-64]: Update the citation to refer to Minor Permit AQ0091MSS03, Revision 1, which has replaced Minor Permit AQ0091MSS01.

Commented [Hilcorp-65]: Update to reflect the language used by the Department in other Title V permits.

~~16.2~~19.2 Report under ~~condition~~Condition 7264 if either of the units is operated without air-fuel controllers and catalytic converters.

~~16.3~~ Within 18 months of the permit effective date, conduct a NOx and diluent emission source test of EU IDs 8 and 9 at no less than three loads representing the normal operating range of that unit using methods listed in Section 6. Using the test results and operating parameters recorded during the test runs, determine the NOx emission factors for EU IDs 8 and 9 expressed as gram/hp-hour and lb/hour as listed in Section 11, Table C, columns C and E, respectively. Attach the determination to the emission source test report.

[Permit to Operate No. 9623-AA007, Condition 6, 4/14/97]
[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(1), (a)(3), & e(6)(c)(6), 7/2/97]

Insignificant Emissions Units

~~17.20.~~ For EU IDs 20, 21, 24, 25, 28, 33, and 34 as long as actual emissions are below the insignificant emissions unit thresholds of 18 AAC 50.326(e), for EU ID 37, and for emissions units at the stationary source that are insignificant as defined in 18 AAC 50.326(d)-(i) that are not listed in this permit, the following apply:

20.1 **Visible Emission Standard.** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, or fuel-burning equipment to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.

[18 AAC 50.055(a)(1)]

20.2 **Particulate Matter Standard.** The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel-burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

[18 AAC 50.055(b)(1)]

20.3 **Sulfur Standard.** The Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from an industrial process or fuel-burning equipment, to exceed 500 ppm averaged over three hours.

[18 AAC 50.055(c)]

20.4 **General MR&R for Insignificant Emissions Units.** The Permittee shall comply with the following:

~~17.1a.~~ The Permittee shall sSubmit the compliance certifications of ~~condition~~Condition 7465.4 for the standards in Conditions 20.1 and 20.2 based on reasonable inquiry;

~~17.2b.~~ The Permittee shall eComply with the requirements of ~~condition~~Condition 5543; and

Commented [Hilcorp-66]: Permit condition can be removed since this one-time requirement has been fulfilled.

Commented [Hilcorp-67]: Insert the specific permit condition in the citation section of each permit condition carried forward from a pre-construction permit.

Commented [Hilcorp-68]: Correct typographical error.

Commented [Hilcorp-69]: Include EU IDs 20 and 21 here since they, too, could qualify as IEUs for purposes of the SIP limits based on operating time.

Commented [Hilcorp-70]: Add EU ID 37 to this condition. EU ID 37 is an insignificant emissions unit based on size and potential emissions. It also has no emissions unit-specific limits or other requirements.

~~17.3c.~~ ~~The Permittee shall r~~Report in the operating report required by ~~eondition~~Condition 7365 if an emissions unit has historically been classified as insignificant because of actual emissions less than the thresholds of 18 AAC 50.326(e) and current actual emissions have become greater than any of those thresholds.

~~a.d.~~ No other monitoring, recordkeeping or reporting is required for insignificant emissions units to demonstrate compliance with the emissions standards under Conditions 20.1, 20.2, and 20.3, except as indicated in conditions 12 and 13.

[18 AAC 50.346(b)(4), 11/9/08]

~~18.~~ ~~The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from an industrial process, fuel burning equipment, or an incinerator to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.~~

[18 AAC 50.050(a)(2) & 50.055(a)(1), 7/25/08]

~~19.~~ ~~The Permittee shall not cause or allow particulate matter emitted from an industrial process or fuel burning equipment to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.~~

[18 AAC 50.055(b)(1), 7/25/08]

~~20.~~ ~~The Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from an industrial process or fuel burning equipment, to exceed 500 ppm averaged over three hours.~~

[18 AAC 50.055(e), 7/25/08]

Commented [Hilcorp-71]: Update to reflect the language and layout used by the Department in other Title V permits and in Standard Permit Condition V as revised July 22, 2020.

Note: there are no incinerators at the Tyonek Platform, so the reference to an incinerator and the citation to 18 AAC 50.050(a) are not included in our proposed version of these conditions.

Section 4. Federal Requirements

Emissions Units Subject to Federal New Source Performance Standards (NSPS), Subpart A

21. **NSPS Subpart A Notification**¹⁵. For any affected facility¹⁶ or existing facility¹⁷ regulated under NSPS requirements in 40 C.F.R. 60, the Permittee shall furnish the Department and EPA written or electronic notification of:

[18 AAC [50.035](#) & [50.040](#)(a)(1), [7/25/08](#)]
[40 C.F.R. 60.7(a) & 60.15(d), Subpart A, [7/1/07](#)]

21.1 the date that construction or reconstruction of an affected facility [commences is commenced](#), postmarked no later than 30 days after such date;

[40 C.F.R. 60.7(a)(1), Subpart A, [7/1/07](#)]

21.2 the actual date of initial startup of an affected facility postmarked within 15 days after such date;

[40 C.F.R. 60.7(a)(3), Subpart A, [7/1/07](#)]

21.3 any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies unless that change is specifically exempted under an applicable subpart or in 40 C.F.R. 60.14(e), postmarked 60 days or as soon as practicable before the change is commenced and shall include:

- information describing the precise nature of the change,
- present and proposed emission control systems,
- productive capacity of the facility before and after the change, and
- the expected completion date of the change [and](#).

[40 C.F.R. 60.7(a)(4), Subpart A, [7/1/07](#)]

21.4 any proposed replacement of [components at](#) an existing facility, for which the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

[40 C.F.R. 60.15(d), [Subpart A](#), [7/1/07](#)]

Commented [Hilcorp-72]: Update the citation date or delete the phrase "effective 7/1/07" entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.

Also, update the footnote to follow the language used in other Title V permits.

Commented [Hilcorp-73]: Update the citation date or delete the phrase "effective 7/1/07" entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.

Also, update the footnote to follow the language used in other Title V permits.

Commented [Hilcorp-74]: Update to match the citation used in other Title V permits.

Commented [Hilcorp-75]: Revise to match the language of 40 CFR 60.7(a)(1).

Commented [Hilcorp-76]: Revise as shown to clarify the condition.

Commented [Hilcorp-77]: Revise to match the language of 40 CFR 60.15(d).

Commented [Hilcorp-78]: Make this change for consistency within the permit.

¹⁵ All requirements are one-time only in nature and have already been satisfied absent activities initiated during the permit term that constitute modification or reconstruction of an existing facility or construction and initial startup of an affected facility. The requirements apply as indicated unless otherwise specified by an applicable subpart.

¹⁶ *Affected facility* means, with reference to a stationary source, any apparatus to which a [New Source Performance Standard](#) applies, as defined in 40 C.F.R. 60.2, [effective 7/1/07](#).

¹⁷ *Existing facility* means, with reference to a stationary source, any apparatus of the type for which a [New Source Performance Standard](#) is promulgated [in this part](#), and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type, as defined in 40 C.F.R. 60.2, [effective 7/1/07](#).

- a. the name and address of owner or operator,
- b. the location of the existing facility,
- c. a brief description of the existing facility and the components that are to be replaced,
- d. a description of the existing and proposed air pollution control equipment,
- e. an estimate of the fixed capital cost of the replacements, and of constructing a comparable entirely new facility,
- f. the estimated life of the existing facility after the replacements, and
- g. a discussion of any economic or technical limitations the facility may have in complying with the applicable [standards of performance New Source Performance Standards](#) after the proposed replacements.

22. **NSPS Subpart A Startup, Shutdown, & Malfunction Requirements.** The Permittee shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of [any of EU IDs 1 – 4](#), any malfunctions of associated air-pollution control equipment, or any periods during which a continuous monitoring system or monitoring device for [any of EU IDs 1 – 4](#) is inoperative.

[18 AAC 50.040(a)(1), [7/25/08](#)]
[40 C.F.R. 60.7(b), Subpart A, [7/1/07](#)]

23. **NSPS Subpart A Excess Emissions and Monitoring Systems Performance Report.** Except as provided for in ~~condition~~[Condition 30.4a\(iii\)](#)~~24~~, the Permittee shall submit ~~to the Department and to EPA a written~~ "excess emissions and monitoring systems performance report" (EEMSP) ~~reports~~¹⁸ as ~~described in~~[required by](#) this condition ~~and/or summary report forms as required by Condition 24~~ for EU IDs 1 – 4 ~~to the Department and~~. ~~Except as provided for in condition 30.4, submit the EEMSP reports to EPA semi-annually, postmarked by the 30th day following the end of each 6-month period. Report excess emissions for all periods of unit operation, including startup, shutdown, and malfunction.~~¹⁹

[18 AAC 50.040(a)(1), [7/25/08](#)]
[40 C.F.R. 60.7(c), Subpart A; [40 C.F.R. 60.334\(j\)](#), Subpart GG, [7/1/07](#)]

- 23.1 ~~Except as provided for in Condition 24.1, submit the EEMSP reports with the summary report form required under Condition 24. Written EEMSP reports shall include the following information:~~

- 23.1a. ~~The magnitude of excess emissions computed in accordance with 40 C.F.R. 60.13(h), any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the process operating time during the reporting period.~~

[40 C.F.R. 60.7(c)(1), Subpart A, [7/1/07](#)]

¹⁸ The ~~federal~~ Federal EEMSP report is not the same as the State excess emission report required by ~~condition~~[Condition 72](#)~~64~~.

¹⁹ Periods of excess emissions and monitor downtime are defined in [40 C.F.R. 60.334\(j\)\(2\)](#) for Subpart GG affected units.

Commented [Hilcorp-79]: Revise to clarify.

Commented [Hilcorp-80]: Revise to clarify and correct grammatical error.

Commented [Hilcorp-81]: Update to reflect the language used by the Department in more recent Title V permits. These changes add clarity and correct the condition referenced to which the exception applies.

Commented [Hilcorp-82]: Update to match the citation used in other Title V permits. The Subpart GG citation is appropriate here.

- a.b. Specific identification of each period of excess emissions that occurred during startup, shutdown, and malfunction of EU IDs 1 ~~and 2~~through 4; the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

[40 C.F.R. 60.7(c)(2), Subpart A, 7/1/07]

- c. When no excess emissions have occurred, such information shall be stated in the report.

[40 C.F.R. 60.7(c)(4), Subpart A]

24. **NSPS Subpart A Summary Report Form.** Except as provided for in ~~condition~~Condition 30.4, submit to the Department and to EPA a "summary report form"²⁰ ~~semi-annually, postmarked by the 30th day following the end of each six-month period, containing the information and~~ in the format shown in ~~Figure 1-1~~ of 40 C.F.R. 60.7²¹ ~~unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored for EU IDs 1 – 4 as follows:~~

[18 AAC 50.040(a)(1), 7/25/08]

[40 C.F.R. 60.7(d), Subpart A, 7/1/07]

- 24.1 If the total duration of excess emissions for the reporting period is less than ~~1~~one percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than ~~5~~five percent of the total operating time for the reporting period, ~~submit a only the summary report form shall be submitted and instead of the EEMSP report described in condition~~Condition 23 ~~need not be submitted, unless requested by the Administrator, otherwise~~

[40 C.F.R. 60.7(d)(1), Subpart A, 7/1/07]

- 24.2 ~~If the total duration of excess emissions for the reporting period is one percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is five percent or greater of the total operating time for the reporting period, the~~ Submit a summary report form ~~along with and the EEMSP report~~ described in ~~condition~~Condition 23 ~~shall both be submitted.~~

[40 C.F.R. 60.7(d)(2), Subpart A, 7/1/07]

25. **NSPS Subpart A Performance (Source) Tests**²². The Permittee shall conduct performance tests on any affected facility within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup, or at such other times specified in 40 C.F.R. 60, and at such other times as may be required by ~~EPA, and~~EPA and shall provide the Department and EPA with a written report of the results of such performance test(s). Tests shall be conducted according to Section 6 of this permit and as outlined in 40 C.F.R. 60.8(a) through (e). The Permittee shall:

[18 AAC 50.040(a)(1), 7/25/08]

[40 C.F.R. 60.8(a), Subpart A, 7/1/07]

²⁰ See Summary Report Form in Attachment A of the Statement of Basis.

²¹ See Summary Report Form in Attachment A of the Statement of Basis.

²² Initial performance tests for Subpart GG turbines, EU IDs 1 – 4, have already been satisfied. The requirements apply as indicated unless otherwise specified by an applicable subpart.

Commented [Hilcorp-83]: There is no CEMS at this source, so the deleted text is not applicable.

Update to reflect the language used by the Department in other Title V permits including the edit to original permit Footnote 13 and the addition of new Footnote 19.

Also, include the requirement of 40 CFR 60.7(c)(4), which applies to the EEMSP reports.

Commented [Hilcorp-84]: Update to reflect the language used by the Department in more recent Title V permits. These changes add clarity.

25.1 Conduct source tests and reduce data as set out in 40 C.F.R. 60.8(b), and provide the Department copies of any EPA waivers or approvals of alternative methods.

[40 C.F.R. 60.8(b), Subpart A, [7/1/07](#)]

25.2 Conduct source tests under conditions specified by EPA to be based on representative performance of EU IDs 1 – 4.

[40 C.F.R. 60.8(c), Subpart A, [7/1/07](#)]

25.3 Notify the Department and EPA at least 30 days in advance of the source test.

[40 C.F.R. 60.8(d), Subpart A, [7/1/07](#)]

25.4 Provide adequate sampling ports, safe sampling platform(s), safe access to sampling platform(s), and utilities for sampling and testing equipment.

[40 C.F.R. 60.8(e), Subpart A, [7/1/07](#)]

26. NSPS Subpart A Good Air Pollution Control Practice. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate EU IDs 1 – 4 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. [The Administrator will determine](#) [Determination of](#) whether acceptable operating and maintenance procedures are being used [will be](#) based on information available to the [Department Administrator](#) which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspections of EU IDs 1 – 4.

[18 AAC 50.040(a)(1), [7/25/08](#)]
[40 C.F.R. 60.11(d), Subpart A, [7/1/07](#)]

27. NSPS Subpart A Credible Evidence. For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of the standards set forth in [econdition](#) [Condition](#) 29 and/or 30, nothing in 40 C.F.R. Part 60 shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether EU IDs 1 – 4 would have been in compliance with applicable requirements of 40 C.F.R. Part 60 if the appropriate performance or compliance test or procedure had been performed.

[18 AAC 50.040(a)(1), [7/25/08](#)]
[40 C.F.R. 60.11(g), Subpart A, [7/1/07](#)]

28. NSPS Subpart A Concealment of Emissions. The Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of a standard set forth in [econdition](#) [Condition](#) 29, [30](#) and/or [3130](#). Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[18 AAC 50.040(a)(1), [7/25/08](#)]
[40 C.F.R. 60.12, Subpart A, [7/1/07](#)]

Commented [Hilcorp-85]: Revise to match the language of 40 CFR 60.11(d).

Commented [Hilcorp-86]: Add a reference to the condition that addresses Subpart IIII standards. The engines subject to Subpart IIII are also subject to 40 CFR 60.12.

Turbines Subject to NSPS Subpart GG, EU IDs 1 – 4

29. **NSPS Subpart GG NO_x Standard.** The Permittee shall not allow the exhaust gas concentration of NO_x from EU IDs 1 and 2 to exceed 165 ppmv ISO corrected at 15 percent O₂ dry exhaust basis and from EU IDs 3 and 4 to exceed 181 ppmv ISO corrected at 15 percent O₂ dry exhaust basis.

[18 AAC 50.040(a)(2)(V), 7/25/08]
[40 C.F.R. 60.332(a)(2) & (d), Subpart GG, 7/1/07]

- a. ~~Waivers. The Permittee shall provide to the Department a written copy of any U.S. EPA granted waiver of the federal emission standards, recordkeeping, monitoring, performance testing, or reporting requirements, or approved custom monitoring schedules upon request by the Department. The Permittee shall keep a copy of each U.S. EPA issued monitoring waiver or custom monitoring schedule with the permit.~~

~~29.229.1~~ **Monitoring.** The Permittee shall comply with the following:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3)(i) & (c)(6), 7/2/07]

- a. **Periodic Testing.** For each turbine subject to ~~condition~~ Conditions 18.1 and/or 29 that operates for 400 hours or more in any 12-month period during the life of this permit, the Permittee shall satisfy either ~~e~~ Conditions 29.1a(i) or 29.1a(ii).

- (i) For existing turbines whose latest emissions source testing was certified as operating at less than or equal to 90 percent of the limits shown in ~~condition~~ Condition 29 (for EU IDs 1 and 2) and ~~condition~~ Condition 18.145.1 (for EU IDs 3 and 4), the Permittee shall conduct subsequent source tests using approved reference methods according to the following schedule: NO_x and O₂ source test under 40 C.F.R. 60, Appendix A, Method 20, or Method 7E and either Method 3 or 3A within the first applicable criteria below in the noted timeframe no later than the permit expiration date except as set out in ~~conditions~~ 29.1a(i)(C) and 29.1a(ii):

- (A) Within 1 year of the effective date of this permit if the most recent source test occurred greater than four years prior to the effective date of this permit and the turbine operated 400 hours or more in any consecutive 12-month period ending during any of the 6 months that precede the permit effective date, or
- (B) Within 1 year after a trigger event²³ if the last source test occurred greater than four years prior to the trigger event.
- (A) Within 5 years of the latest performance test, or

Commented [Hilcorp-87]: Modify to reflect that the Subpart GG standard is compared to ISO corrected emissions.

Commented [Hilcorp-88]: Update to reflect the language used by the Department in other Title V permits. This condition is now replaced by new Condition 75.2 of this proposed permit.

²³ A trigger event is defined as turbine operations of 400 hours or more on a given fuel in any consecutive 12-month period.

- (B) ~~Within 1 year of the date of issue of this permit if the last source test occurred greater than five years prior to issuance of this permit and the 400 hour threshold was triggered within 6 months of the permit issue date, or~~
- (C) ~~Within 1 year after exceeding 400 hours of operation in a 12-month period if the last source test occurred greater than 5 years prior to the exceedance.~~
- (ii) For an existing turbines whose latest emissions source testing was certified as operating at greater than 90 percent of any of the applicable limits shown in ~~condition~~Condition 29 (for EU IDs 1 and 2) ~~and/or condition-Condition 18.145.1~~ (for EU IDs 3 and 4), the Permittee shall conduct a NO_x and O₂ source test under 40 C.F.R. 60, Appendix A, Method 20, or Method 7E and either Method 3 or 3A, subsequent source tests using approved methods annually until two consecutive tests show performance results certified at less than or equal to 90 percent of the limits of ~~condition~~Condition 29 (for EU IDs 1 and 2) and ~~condition-Condition 18.145.1~~ (for EU IDs 3 and 4).
- b. **Substituting Test Data.** The Permittee may use a Method 20, or Method 7E and either EPA Method 3 or 3A, source test completed under ~~condition~~Condition 29.1a performed on only one of a group of turbines to satisfy the requirements of those conditions for the other turbines in the group if
- (i) The Permittee demonstrates that test results are less than or equal to 90 percent of the emission limits of ~~condition~~Condition 29 (for EU IDs 1 and 2) and ~~condition-Condition 18.145.1~~ (for EU IDs 3 and 4), and are projected under ~~condition~~Condition 29.1c to be less than or equal to 90 percent of the limit at maximum load;
- (ii) For any source test done after the issuance effective date of this permit, the Permittee identifies in a source test plan under ~~condition~~Condition 6457
- (A) the turbine to be tested;
- (B) the other turbines in the group that are to be represented by the test; and
- (C) why the turbine to be tested is representative, including that each turbine in the group
- (1) is located at a stationary source operated and maintained by the Permittee;

Commented [Hilcorp-89]: Update to reflect the language used by the Department in more recent Title V permits.

Commented [Hilcorp-90]: Update to reflect the language used by the Department in more recent Title V permits.

Commented [Hilcorp-91]: All other references of this type in the permit regarding a deadline for source testing are to the permit effective date. We ask for consistency.

- (2) ~~is tested~~[operates](#) under close to identical ambient conditions;
 - (3) is the same make and model and has identical injectors and combustor;
 - (4) uses the same fuel type from the same ~~supply origin~~[source](#).
 - (iii) The Permittee may not use substitute test results to represent emissions from a turbine or group of turbines if that turbine or group of turbines is operating at greater than 90 percent of the emission limits of ~~condition~~[Condition](#) 29 (for EU IDs 1 and 2) and ~~condition~~[Condition](#) ~~18.145.1~~ (for EU IDs 3 and 4).
- c. **Load.** [The Permittee shall comply with the following:](#)
- (i) ~~The Permittee shall e~~Conduct all tests under ~~condition~~[Condition](#) 29.1 in accordance with 40 C.F.R. 60.335(~~b~~)(2), except as otherwise approved in writing by the Department, or by EPA if the circumstances at the time of the EPA approval are still valid. For the highest load condition, if it is not possible to operate the turbine during the test at maximum load, the Permittee will test the turbine when operating at the highest load achievable by the turbine under the ambient and stationary source operating conditions in effect at the time of the test.
 - (ii) ~~The Permittee shall d~~Demonstrate in the source test plan for any test performed after the ~~issue effective~~ date of this permit whether the test is scheduled when maximum NOx emissions are expected.
 - (iii) If the highest operating rate tested is less than the maximum load of the tested turbine or another turbine represented by the test data,
 - (A) for each such turbine the Permittee shall provide to the Department as an attachment to the source test report
 - (1) additional test information from the manufacturer or from previous testing of units in the group of turbines; if using previous testing of the group of turbines, the information must include all available test data for the turbines in the group, and
 - (2) a demonstration based on the additional test information that projects the test results from ~~condition~~[Condition](#) 29.1 to predict the highest load at which emissions will comply with the limits in ~~condition~~[Condition](#) 29 (for EU IDs 1 and 2) and ~~condition~~[Condition](#) ~~18.145.1~~ (for EU IDs 3 and 4);

Commented [Hilcorp-92]: Update to reflect the language used by the Department in more recent Title V permits.

Commented [Hilcorp-93]: Update to reflect the language used by the Department in more recent Title V permits.

Also, correct the referenced rule citation for the portion of Subpart GG that pertains to load.

- (B) the Permittee shall not operate any turbine represented by the test data at loads for which the Permittee's demonstration predicts that emissions will exceed the limits of [eonditionCondition 29](#) (for EU IDs 1 and 2) and [eonditionCondition 18.145.4](#) (for EU IDs 3 and 4);
- (C) the Permittee shall comply with a written finding prepared by the Department that
 - (1) the information is inadequate for the Department to reasonably conclude that compliance is assured at any load greater than the test load, and that the Permittee must not exceed the test load;
 - (2) the highest load at which the information is adequate for the Department to reasonably conclude that [compliance is assured](#) ~~is at~~ less than maximum load, and the Permittee must not exceed the highest load at which compliance is predicted, or
 - (3) the Permittee must retest during a period of greater expected demand on the turbine; and
- (D) the Permittee may revise a load limit by submitting results of a more recent [approved Method 20 or Method 7E and either Method 3 or 3E](#) ~~source~~ test done at a higher load, and, if necessary, the accompanying information and demonstration described in [eonditionCondition 29.1c\(iii\)\(A\)](#); the new limit is subject to any new Department finding under [eonditionCondition 29.1c\(iii\)\(C\)](#).
- (iv) In order to [perform a Method 20 or Method 7E and either Method 3 or 3E](#) ~~emission source~~ tests, the Permittee may operate a turbine at a higher load than that prescribed by [eonditionCondition 29.1c\(iii\)](#).
- (v) For the purposes of [eonditionCondition 29.1](#) through [29.3](#), maximum load means the hourly average load that is the smallest of
 - (A) 100 percent of manufacturer's design capacity of the gas turbine at ISO standard day conditions;
 - (B) the highest load allowed by an enforceable condition that applies to the turbine; or
 - (C) the highest load possible considering permanent physical restraints on the turbine or the equipment which it powers.

Commented [Hilcorp-94]: Correct grammatical error.

Commented [Hilcorp-95]: Update to reflect the language used by the Department in more recent Title V permits.

Commented [Hilcorp-96]: Update to reflect the language used by the Department in more recent Title V permits.

29.329.2 Recordkeeping. The Permittee shall keep records as follows:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3)(ii) & (c)(6), 7/2/07]

- a. The Permittee shall comply with the following for each turbine for which a demonstration under ~~condition~~Condition 29.1c(iii) does not show compliance with the limits of ~~condition~~Condition 29 (for EU IDs 1 and 2) and ~~condition~~Condition 18.145.1 (for EU IDs 3 and 4) at maximum load.
 - (i) The Permittee shall keep records of
 - (A) load; or
 - (B) as approved by the Department, surrogate measurements for load and the method for calculating load from those measurements.
 - (ii) Records in ~~condition~~Condition 29.2a shall be hourly or otherwise as approved by the Department.
 - (iii) Within one month after submitting a demonstration under ~~condition~~Condition 29.1c(iii)(A)(2) that predicts that the highest load at which emissions will comply is less than maximum load, or within one month of a Department finding under ~~condition~~Condition 29.1c(iii)(C), whichever is earlier, the Permittee shall propose for Department approval how they will measure load or load surrogates, and shall propose and comply with a schedule for installing any necessary equipment and beginning monitoring. The Permittee shall comply with any subsequent Department direction on the load monitoring methods, equipment, or schedule.
- b. For any turbine subject to ~~condition~~Conditions 18.1 and/or 29 that will operate less than 400 hours in any 12 consecutive months, the Permittee shall keep monthly records of the hours of operation.

29.429.3 Reporting. The Permittee shall report as follows:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC & 50.326(j)(4), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii) & (c)(6), 7/2/07]

- a. In each ~~stationary source~~operating report under ~~condition~~Condition 7365, the Permittee shall list for each turbine tested or represented by testing at less than maximum load and for which the Permittee must limit load under ~~condition~~Condition 29.1c(iii)
 - (i) the load limit;
 - (ii) the turbine identification; and
 - (iii) the highest load recorded under ~~condition~~Condition 29.2a during the period covered by the operating report.

Commented [Hilcorp-97]: Update to reflect the language used by the Department in more recent Title V permits.

Commented [Hilcorp-98]: Update to reflect the language used by the Department in more recent Title V permits.

Since source testing here is referenced by Condition 18.1 of this proposed permit, all discussions pertaining to compliance with a limit should also point to Condition 18.1.

Commented [Hilcorp-99]: Update to reflect the language used by the Department in more recent Title V permits.

- b. In each ~~stationary source~~ operating report under ~~condition~~[Condition 7365](#) for each turbine for which ~~condition~~[Condition 29.1](#) has not been satisfied because the turbine normally operates less than 400 hours in any 12 consecutive months, the Permittee shall identify
- (i) the turbine;
 - (ii) the highest number of operating hours for any 12 consecutive months ending during the period covered by the report.
- c. The Permittee shall report under ~~condition~~[Condition 7264](#) if
- (i) a test result exceeds the emission standard;
 - (ii) ~~Method 20, or Method 7E and either Method 3 or 3A, emissions source~~ testing is required under ~~condition~~[Condition 29.1a\(i\)](#) or [29.1a\(ii\)](#) but not performed, or
 - (iii) the turbine was operated at a load exceeding that allowed by ~~condition~~[Conditions 29.1c\(iii\)\(B\)](#) and [29.1c\(iii\)\(C\)](#); exceeding a load limit is deemed a single violation rather than a multiple violation of both monitoring and the underlying emission limit.

[18 AAC 50.220(a) - (c), ~~10/1/04~~; 18 AAC & 50.040(a)(1), ~~7/25/08~~]
[40 C.F.R. 60.8(b), Subpart A, ~~7/1/07~~]

30. NSPS Subpart GG Sulfur Standard. The Permittee shall not allow the sulfur content for the fuel burned in EU IDs 1 – 4 to exceed 0.8 percent by weight.

[18 AAC 50.040(a)(2)(V), ~~7/25/08~~]
[40 C.F.R. 60.333(b), Subpart GG, ~~7/1/07~~]

30.1 Monitoring. Monitor compliance with the standards listed in this condition as follows:

[18 AAC 50.040(a)(2)(V), ~~7/25/08~~]
[40 C.F.R. 60.334 & 60.335, Subpart GG, ~~7/1/07~~]

- a. Monitor the total sulfur content of the fuel being fired in the turbine, except as provided in ~~condition~~[Conditions 30.1b and 30.1c](#). The sulfur content of the fuel must be determined using total sulfur methods described in ~~40 C.F.R. 60.335(b)(10) and condition~~[Condition 30.2](#). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084–82, 94, D5504–01, D6228–98, or Gas Processors Association Standard 2377–86, which measure the major sulfur compounds may be used.

[40 C.F.R. 60.334(h)(1), Subpart GG, ~~7/1/07~~]

Commented [Hilcorp-100]: We ask that the Department consistently refer to these reports as “Operating Reports”, not “Stationary Source Operating Reports”.

Commented [Hilcorp-101]: Update to reflect the language used by the Department in more recent Title V permits.

Commented [Hilcorp-102]: Add a reference to Condition 30.1c. The provisions in Condition 30.1c are also exceptions to the monitoring required by this condition.

Commented [Hilcorp-103]: Simplify the permit by referring to the permit condition that lists the required methods instead of referring to an outside document. The citation following Condition 30.2 includes the reference to 40 CFR 60.335(b)(10).

- b. The ~~owner or operator~~Permittee may elect not to monitor the total sulfur content of the gaseous fuel combusted ~~by an affected emissions unit in the turbine~~, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 C.F.R. 60.331(u), regardless of whether an existing custom schedule approved by the Administrator requires such monitoring. The ~~owner or operator~~Permittee shall use one of the following sources of information to make the required demonstration²⁴:

- (i) The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or
- (ii) Representative fuel sampling data, which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in 40 C.F.R. 75, Appendix D, Section 2.3.1.4 or 2.3.2.4 is required.

[40 C.F.R. 60.334(h)(3), Subpart GG, ~~7/1/07~~]

- c. For any turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and for which a custom fuel monitoring schedule has previously been approved, the owner or operator may, without submitting a special petition to the Administrator, continue monitoring on this schedule.

[40 C.F.R. 60.334(h)(4), Subpart GG, ~~7/1/07~~]

- d. The frequency of determining the sulfur content of the fuel shall be as follows:

- (i) **Gaseous fuel.** ~~For owners and operators that~~If the Permittee elects not to demonstrate sulfur content using options in ~~condition~~Condition 30.1b, and for which the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel shall be determined and recorded ~~under Condition 30.1a~~once per unit operating day.

Commented [Hilcorp-104]: Change language to reflect its use in the context of the permit instead of the Subpart GG rule.

Commented [Hilcorp-105]: Replace the term "turbine" with "by an affected emissions unit" to be consistent with language in NSPS rule.

Commented [Hilcorp-106]: Revise to correct and clarify the sentence regarding the exemption that pertains to a demonstration that the fuel gas burned by affected turbines meets the definition of natural gas under §60.331(u).

Commented [Hilcorp-107]: Change to bold font to clarify the permit.

Commented [Hilcorp-108]: Change language to reflect its use in the context of the permit instead of the Subpart GG rule.

Commented [Hilcorp-109]: Make the change noted here to clarify the permit.

²⁴ The Permittee submitted a certified statement to the Department dated 1/26/09 indicating that the fuel gas combusted at the stationary source meets the definition of natural gas in 40 C.F.R. 60.331(u), pursuant to 40 C.F.R. 60.334(h)(3). Periodic fuel sulfur monitoring under ~~condition~~Condition 30.1a~~30.1a~~ and reporting under ~~condition~~Conditions 2323, 2424, and ~~30.430.4~~ do not apply to Subpart GG turbines that ~~have demonstrated that natural gas burn~~ fuel gas meetings the definition of ~~natural gas in~~ 40 C.F.R. 60.331(u) as set out by ~~condition~~Condition 30.1b~~30.1b~~. Per 40 C.F.R. 60.334(i)(3)(i), a custom sulfur monitoring schedule under §60.334(i)(3)(ii)(A) is acceptable without prior ~~Administrative~~administrative approval.

- (ii) **Custom schedules.** Notwithstanding the requirements of ~~condition~~Condition 30.1d(i), ~~operators or fuel vendors~~the Permittee may develop a custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in 40 C.F.R. 60.334(i)(3)(i) and (i)(3)(ii), custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in ~~condition~~Condition 30. The two custom sulfur monitoring schedules set forth in 40 C.F.R. 60.334(i)(3)(i)(A) through (D) and 60.334(i)(3)(ii) are acceptable without prior ~~Administrative~~administrative approval.

[18 AAC 50.040(j), 7/25/08; 18 AAC & 50.326(j), 12/1/04]
[40 C.F.R. 60.334(i), Subpart GG, 7/1/07]

- 30.2 **Test Methods and Procedures.** If the ~~owner or operator~~Permittee is required under 40 C.F.R. 60.334(i) to periodically determines the sulfur content of the fuel combusted in the turbine under Condition 27.1a or 27.1d, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using:

[18 AAC 50.040(a)(2)(V)]
[40 C.F.R. 60.335(b)(10), Subpart GG]

- a. **For gaseous fuels,** ASTM D1072-80, 90 (reapproved 1994); D3246-81, 92, 96; D4468-85 (reapproved 2000); or D6667-01 (all of which are incorporated by reference; see 40 C.F.R. 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Administrator.

[40 C.F.R. 60.335(b)(10)(ii), Subpart GG]

- a.b. The fuel analyses required under ~~condition~~Conditions 30.1 and 30.2 may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

[18 AAC 50.040(j), 7/25/08; 18 AAC & 50.326(j), 12/1/04]
[40 C.F.R. 60.335(b)(10 & 11), Subpart GG, 7/1/07]

- 30.3 **Recordkeeping.** Keep records of the analyses as required by ~~condition~~Conditions 30.1 and 30.2, and in accordance with ~~condition~~Condition 6860.

[18 AAC 50.040(j), 7/25/08; 18 AAC & 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/2/07]

- 30.4 **Reporting.** The Permittee shall:

- a. For each affected unit that for which the Permittee periodically determines the fuel sulfur content under ~~condition~~Condition 30.1a, 30.1c, or 30.1d:

Commented [Hilcorp-110]: Change to bold font to clarify the permit.

Commented [Hilcorp-111]: Change language to reflect its use in the context of the permit instead of the Subpart GG rule.

Commented [Hilcorp-112]: Update to reflect the language used by the Department in other Title V permits

Commented [Hilcorp-113]: These citations are appropriate as the basis for the language in this condition.

Commented [Hilcorp-114]: Requested changes will make the permit condition match the language of the rule. Also, use bold formatting as shown to clarify the permit.

Commented [Hilcorp-115]: This citation is appropriate as the basis for the language in this condition.

Commented [Hilcorp-116]: The cross referenced conditions should be expanded since fuel analyses could be done under both of the conditions shown in our proposed revision.

Commented [Hilcorp-117]: The revised citation is appropriate as the basis for this condition.

Commented [Hilcorp-118]: Revise to add clarity.

- (i) semi-annually report the results of all sulfur monitoring to EPA and send a copy to the Department by the 30th day following the end of each 6-month period, except as otherwise approved by a custom fuel monitoring schedule;
 - (ii) the owner or operator shall include with the report submitted under Condition 30.4a(i) submit a reports of excess emissions and monitoring system downtime, in accordance with 40 C.F.R. 60.7(c) as summarized in condition Condition 23 and as defined under 40 C.F.R. 60.334(j)(2) except where otherwise approved by a custom fuel monitoring schedule. Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction as described by 40 C.F.R. 60.334(j)(2).
 - (iii) If periodic gaseous fuel sulfur monitoring is not required because the demonstration under Condition 30.1b has been made, fuel gas sulfur reporting under Conditions 23, 24 and this condition is not required.
- [40 C.F.R. 60.334(j), Subpart GG]
- b. Include a copy of the records required by Condition 30.3 with the operating report required by Condition 73 for the period covered by the report;
 - c. Report under Condition 72 if
 - (i) a test result exceeds the limit in Condition 30;
 - (ii) monitoring is required under Condition 30.1 but not performed; or
 - (iii) any reporting required under Condition 30.4 is not completed.

[18 AAC 50.040(j), 7/25/08; 18 AAC & 50.326(j), 12/1/04]

[40 C.F.R. 71.6(a)(3) & (c)(6)]

[40 C.F.R. 60.334(j), Subpart GG, 7/1/07]

Stationary Compression Ignition Internal Combustion Engines (CI ICE) Subject to NSPS Subpart IIII, EU IDs 24 and 25

31. NSPS Subpart IIII Requirements. For EU IDs 24 and 25, the Permittee shall comply with the following:

[18 AAC 50.040(a)(2)(OO), 50.040(j)(4) & 50.326(j)]

[40 C.F.R. 60.4200(a)(2)(i), Subpart IIII]

[40 C.F.R. 71.6(a)(1)]

- 31.1 For EU ID 24, purchase an engine certified by the engine manufacturer to meet the emission standards in Table 6 of 40 C.F.R. 1039.102 (EPA Tier 4-interim). The engine must be installed and configured according to the manufacturer's emission-related specifications except as allowed under Condition 31.5.

[40 C.F.R. 60.4201(a), 60.4204(b) & 60.4211(c), Subpart IIII]

[40 C.F.R. 1039.102, Table 6, Subpart B]

Commented [Hilcorp-119]: Update to reflect the language used by the Department in other Title V permits.

31.2 For EU ID 25, purchase an engine certified by the engine manufacturer to meet the emission standards in Table 3 to Appendix I to 40 C.F.R. 1039 (EPA Tier 3) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications except as allowed under Condition 31.5.

[40 C.F.R. 60.4201(a), 60.4204(b) & 60.4211(c), Subpart IIII]
[Appendix I to 40 C.F.R. 1039, Table 3]

31.3 Operate and maintain EU IDs 24 and 25 to achieve the emissions standards in Conditions 31.1 and 31.2, respectively, over the entire life of the engine.

[40 C.F.R. 60.4206, Subpart IIII]

31.4 Except as allowed under Condition 31.5, operate and maintain the stationary CI ICE and control device (if applicable) according to the manufacturer's emission-related written instructions. The Permittee may change only those emissions-related settings that are permitted by the manufacturer.

[40 C.F.R. 60.4211(a), Subpart IIII]

31.5 If an engine is not installed and configured according to the manufacturer's emission-related specifications, or the engine and control device (if applicable) are not operated and maintained according to the manufacturer's emission-related written instructions, or if emission-related settings are changed in a way that is not permitted by the manufacturer, demonstrate compliance as follows:

- a. Keep a maintenance plan and records of conducted maintenance;
- b. To the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions; and
- c. Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after changing emission-related settings in a way that is not permitted by the manufacturer.

[40 C.F.R. 60.4211(g)(2), Subpart IIII]

31.6 Conduct the performance test under Condition 31.5c in accordance with 40 C.F.R. 60.4212.

[40 C.F.R. 60.4212, Subpart IIII]

31.7 **Monitoring.** If the stationary CI ICE is equipped with a diesel particulate filter to comply with the applicable emission standards in Condition 31.1 or 31.2, the diesel particulate filter must be installed with a backpressure monitor that notifies the Permittee when the high backpressure limit of the engine is approached.

[40 C.F.R. 60.4209(b), Subpart IIII]

31.8 Recordkeeping.

- a. If the stationary CI ICE is equipped with a diesel particulate filter, keep records of any corrective action taken after the backpressure monitor has notified the Permittee that the high backpressure limit of the engine is approached.

[40 C.F.R. 60.4214(c), Subpart IIII]

- b. Maintain records of the manufacturer's certification that the engines meet the emission standards referenced in Conditions 31.1 and 31.2.

[18 AAC 50.040(j)(4) & 50.326(j)(4)]
[40 C.F.R. 71.6(a)(3) & (c)(6)]

31.9 Reporting. The Permittee shall notify the Department per Condition 72 if any of the requirements in Condition 31 are not met.

[18 AAC 50.040(j)(4) & 50.326(j)(4)]
[40 C.F.R. 71.6(a)(3) & (c)(6)]

Emissions Units Subject to Federal National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 C.F.R. 63 Subparts A and HH, EU IDs 40 – 42, EU IDs 8, 9, 20, 21, 28, 33, 34, and 40 – 42

31.32. NESHAPs (40 C.F.R. 63) Subpart A and HH General Provisions. The Permittee shall:

- 32.1 For EU IDs 8, 9, 20, 21, 28, 33, and 34, comply with the applicable general requirements of 40 C.F.R. 63, Subpart A, in accordance with the provisions for applicability of Subpart A in Table 8 to 40 C.F.R. 63, Subpart ZZZZ.

[18 AAC 50.040(j) & 50.326(j)]
[40 C.F.R. 71.6(a)(1)]
[40 C.F.R. 63.6665 & Table 8, Subpart ZZZZ]
[40 C.F.R. 63.1-63.15, Subpart A]

- 31.32.2 For EU IDs 40, 41, and 42, The Permittee shall comply with the applicable general standards requirements of 40 C.F.R. 63, Subparts A, and HH in accordance with applicable requirements of 40 C.F.R. 63.764 and the provisions for applicability of Subpart A in 40 C.F.R. 63, Subpart HH (Appendix to Subpart HH, Table 2).

[18 AAC 50.040(c)(1) & (13)(1 & 13) & (j), 7/25/08]
[40 C.F.R. 63.1-63.16, Subpart A, 7/2/07]
[40 C.F.R. 63.764(a) & Appendix to Subpart HH, Table 2, 7/16/07]

Emissions Units Subject to NESHAPs Subpart HH at an Area Source, EU IDs 40, 41, 42

- 32.33. Beginning on January 5, 2009, the Permittee shall maintain a record of the actual average emissions of benzene from the glycol dehydration units (EU IDs 40 – 42) vented to the atmosphere to demonstrate emissions are less than 0.90 megagram per year, as determined by the procedures specified in 40 C.F.R. 63.772(b)(2) Condition 33.1.

[18 AAC 50.040(c)(13) & (j), 7/25/08; 18 AAC & 50.326(j), 12/4/04]
[40 C.F.R. 63.760(a), (b)(2), 63.760(f)(5)(ii), 63.764(e)(1)(ii), Subpart HH, 7/16/07]

Commented [Hilcorp-120]: These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 60 Subpart IIII for EU IDs 24 and 25.

Commented [Hilcorp-121]: These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 60 Subpart IIII for EU IDs 24 and 25.

Commented [Hilcorp-122]: Revise to combine appropriate language pertaining to Part 63 NESHAP Subpart A with respect to Subpart ZZZZ as well as the existing permit language that addresses Subpart A with respect to Subpart HH.

We also propose to add a new heading that helps to distinguish the Subpart HH section from Subpart A and new conditions pertaining to Subpart ZZZZ.

Commented [Hilcorp-123]: We propose to replace the rule citation shown here with a reference to the permit condition that contains the cited rule requirements. We prefer this approach when the applicable requirement is stated in a permit condition.

Commented [Hilcorp-124]: Our proposed change to this citation will make it consistent with other citations in the permit that state the specific NSPS or NESHAP rule.

~~32.133.1~~ The Permittee shall determine actual average benzene emissions:

- a. using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration units and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled “Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions” (GRI-95/0368.1); or-

[18 AAC 50.040(j), ~~7/25/08~~; ~~18 AAC~~ & 50.326(j), ~~12/1/04~~]
[40 C.F.R. 63.772(b)(2)(i), [Subpart HH, 7/16/07](#)]

- b. through direct measurement using the methods in 40 C.F.R. 63.772(a)(1)(i) or (ii), or an alternative method according to 40 C.F.R. 63.7(f). Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year.

[40 C.F.R. 63.772(b)(2)(ii), [Subpart HH](#)]

~~32.233.2~~ The Permittee shall maintain records to show the actual average benzene emissions (in terms of benzene emissions per year).

[18 AAC 50.040(j), ~~7/25/08~~; ~~18 AAC~~ & 50.326(j), ~~12/1/04~~]
[40 C.F.R. 63.774(d)(1)(ii), [Subpart HH, 7/16/07](#)]

34. At all times operate and maintain EU IDs 40 - 42, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the units.

[18 AAC 50.040(j) & 50.326(j)]
[40 C.F.R. 63.764(j), [Subpart HH](#)]

New Stationary Reciprocating Internal Combustion Engines (RICE) Subject to NESHAPs Subpart ZZZZ, EU IDs 24 and 25

35. NESHAP Subpart ZZZZ Requirement for New CI RICE at an Area Source. For EU IDs 24 and 25, the Permittee shall comply with 40 C.F.R. 63 Subpart ZZZZ by meeting the applicable requirements of 40 C.F.R. 60 Subpart IIII as outlined in Condition 31.

[18 AAC 50.040(c)(23) & (j); and 50.326(j)]
[40 C.F.R. 71.6(a)(1)]
[40 C.F.R. 63.6585, §63.6590(c)(1), [Subpart ZZZZ](#)]

Commented [Hilcorp-125]: Our proposed change to this citation will make it consistent with other citations in the permit that state the specific NSPS or NESHAP rule.

Commented [Hilcorp-126]: NESHAP Subpart HH allows for direct measurement of benzene emissions from dehydration units. The proposed addition includes the provision of 40 CFR 63.772(b)(2)(ii) as an option for determining actual benzene emissions.

Commented [Hilcorp-127]: Add the good air pollution control practices provision of Subpart HH under 40 CFR 63.764(j) to the permit. The provision applies to EU IDs 40 through 42.

Commented [Hilcorp-128]: This is our proposed condition pertaining to the applicable requirement of 40 CFR 63 Subpart ZZZZ for EU IDs 24 and 25. These engines are classified for purposes of Subpart ZZZZ as new CI RICE at an area source of HAP emissions.

Existing Stationary Reciprocating Internal Combustion Engines (RICE) Subject to NESHAPs Subparts A and ZZZZ, EU IDs 8, 9, 20, 21, 28, 33, and 34

36. NESHAP Subpart ZZZZ Requirements for Existing SI Engines at an Area Source.

For EU IDs 8 and 9, comply with the following requirements at all times:

[18 AAC 50.040(c)(23) & (j); and 50.326(j)]

[40 C.F.R. 71.6(a)(1)]

[40 C.F.R. 63.6585, §63.6590(a)(1)(iii), §63.6595(a)(1), §63.6605(a), Subpart ZZZZ]

NESHAP Subpart ZZZZ Emissions Reduction Requirement

36.1 For EU IDs 8 and 9, install NSCR to reduce HAP emissions.

[40 C.F.R. 63.6603(a) and Table 2d, Item 12, Subpart ZZZZ]

NESHAP Subpart ZZZZ General Monitoring, Operation, and Maintenance Requirements

36.2 **Good Air Pollution Control Practices.** At all times, operate and maintain EU IDs 8 and 9, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of EU IDs 8 and 9.

[40 C.F.R. 63.6605(b), Subpart ZZZZ]

36.3 **Operation Requirement.** For EU IDs 8 and 9, minimize the time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading, not to exceed 30 minutes.

[40 C.F.R. 63.6625(h), Table 2d, Subpart ZZZZ]

NESHAP Subpart ZZZZ Specific Monitoring, Installation, Collection, and Compliance Demonstration Requirements

36.4 For EU IDs 8 and 9, comply with Conditions 36.4a and 36.4b, or comply with Condition 36.4c.

a. Install, operate, and maintain a Continuous Parametric Monitoring System (CPMS) to collect the catalyst inlet temperature data according to the following requirements and Condition 36.6:

(i) prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in 40 C.F.R. 63.6625(b)(1)(i) through (v) and in 40 C.F.R. 63.8(d). As specified in 40 C.F.R. 63.8(f)(4), the Permittee may request approval to use monitoring system quality assurance and quality

- control procedures alternative to those specified in Conditions 36.4a(i) through 36.4a(v) in the site-specific monitoring plan;
 - (ii) install, operate, and maintain each CPMS in continuous operation according to the procedures in the site-specific monitoring plan;
 - (iii) the CPMS must collect data at least once every 15 minutes (see also Condition 36.6);
 - (iv) the temperature sensor must have a minimum tolerance of 5 °F or 1 percent of the measurement range, whichever is larger;
 - (v) conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least annually;
 - (vi) conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan; and
 - b. Reduce the collected catalyst inlet temperature data to 4-hour rolling averages and maintain the 4-hour rolling averages to within greater than or equal to 750 °F and less than or equal to 1250 °F; or
 - c. Install equipment to automatically shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F and immediately shut down the affected engine if the catalyst inlet temperature exceeds 1250 °F.

[40 C.F.R. 63.6625(b), §63.6630(a) and Table 5, Item 14.a.ii, Subpart ZZZZ]
[40 C.F.R. 63.6640(a) and Table 6, Items 15.a.ii & 15.a.iii, Subpart ZZZZ]

36.5 Initial Compliance Demonstration Requirements. Demonstrate initial compliance with applicable emission limitations and other requirements as follows:

- a. Conduct an initial compliance demonstration as specified in 40 C.F.R. 63.6630(e) by no later than 180 days after October 19, 2013 (i.e., by April 17, 2014) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O₂, or the average reduction of emissions of THC is 30 percent or more;
- b. Install the equipment required under Condition 36.4; and
- c. Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in Condition 38.1.

[40 C.F.R. 63.6612(a); §63.6630, and Table 5, Items 14.a.i and 14.a.ii, Subpart ZZZZ]
[40 C.F.R. 63.7(a)(2), Subpart A]

36.6 Continuous Compliance Monitoring and Data Collection Requirements. If the Permittee elects to employ the optional CPMS under Conditions 36.4a and 36.4b, then comply with the following:

- a. Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
- b. The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. The Permittee must, however, use all the valid data collected during all other periods.

[40 C.F.R. 63.6635, Subpart ZZZZ]

36.7 Continuous Compliance Demonstration Requirements. Comply with the following annual compliance demonstration requirements:

- a. Conduct annual compliance demonstrations to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O₂, or the average reduction of emissions of THC is 30 percent or more.
- b. The compliance demonstration must consist of at least one test run.
- c. Each test run must be of at least 15 minute duration, except that each test conducted using the method in Appendix A of Subpart ZZZZ must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.
- d. If demonstrating compliance with the CO concentration or CO percent reduction requirement in Condition 36.5a or 36.7a, measure CO emissions using one of the CO measurement methods specified in Table 4 of Subpart ZZZZ, or using Appendix A of Subpart ZZZZ.
- e. If demonstrating compliance with the THC percent reduction requirement in Condition 36.5a or 36.7a, measure THC emissions using Method 25A, reported as propane, of 40 CFR Part 60, Appendix A.
- f. Measure O₂ using one of the O₂ measurement methods specified in Table 4 of Subpart ZZZZ. Measurements to determine O₂ concentration must be made at the same time as the measurements for CO or THC concentration.

- g. If demonstrating compliance with the CO or THC percent reduction requirement in Condition 36.5a or 36.7a, measure CO or THC emissions and O₂ emissions simultaneously at the inlet and outlet of the control device.
- h. If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of Subpart ZZZZ (i.e., Condition 36.7a), the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Condition 36.7a. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until subsequent testing demonstrates that emissions do not exceed the levels specified in Condition 36.7a.

[40 C.F.R. 63.6640(a), §63.6640(c); and Table 6, Item 15.a.i, Subpart ZZZZ]

NESHAP Subpart ZZZZ Recordkeeping for SI Engines

37. The Permittee shall keep records as follows for each of EU IDs 8 and 9:

- 37.1 If the Permittee elects to employ the optional CPMS under Conditions 36.4a and 36.4b, then keep records as described in 40 C.F.R. 63.6655(a), (b), and (d).

[40 C.F.R. 63.6655(a), (b), & (d), Subpart ZZZZ]

- 37.2 Keep records in a form suitable and readily available for expeditious inspection and review, readily accessible in hard copy or electronic form, for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record pertaining to 40 C.F.R Part 63 applicable requirements. All records may be retained off site.

[40 C.F.R. 63.6660, §63.6665 & Table 8, Subpart ZZZZ]

[40 C.F.R. 63.10(b)(1), Subpart A]

NESHAP Subpart ZZZZ Notifications and Reporting for SI Engines

38. The Permittee shall notify and report as follows for each of EU IDs 8 and 9:

- 38.1 Submit a Notification of Compliance Status according to the requirement of 40 C.F.R. 63.6645(h) and 40 C.F.R. 63.9(h)(2)(ii) following completion of the initial compliance demonstration under Condition 36.5a.

[40 C.F.R. 63.6645(h), Subpart ZZZZ]

[40 C.F.R. 63.9(h)(2)(ii), Subpart A]

38.2 Semi-annual Compliance Reports

- a. Compliance Reports must cover the semi-annual reporting period from January 1 through June 30 or the semi-annual reporting period from July 1 through December 31 and shall be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semi-annual reporting period.
- b. The Permittee may submit the semi-annual Compliance Reports according to the dates established in Condition 73 instead of the dates in Condition 38.2a.
[40 C.F.R. 63.6650(a) & (b)(3)–(5) and Table 7, Item 3, Subpart ZZZZ]
- c. The Compliance Report must contain the information in §63.6650(c) and (e), as applicable; and the results of the annual compliance demonstration under Condition 36.7, if conducted during the reporting period.
[40 C.F.R. 63.6650(a), (c) & (e) and Table 7, Item 3, Subpart ZZZZ]

- 38.3 Include in the operating report required by Condition 73 a report of Subpart ZZZZ deviations as defined in 40 C.F.R. 63.6675 and of each instance in which an applicable requirement in 40 C.F.R. 63, Subpart A (Table 8 of Subpart ZZZZ) was not met. If you submit a Compliance Report pursuant to Condition 38.2 with, or as part of, the operating report required by Condition 73, and the Compliance Report includes all required information concerning deviations from any emission or operating limitation, submission of the Compliance Report shall be deemed to satisfy any obligation to report the same deviations in the operating report. However, submission of a Compliance Report shall not otherwise affect any obligation to report deviations from permit requirements under Condition 38.4.
[40 C.F.R. 63.6640(b), (c) & §63.6650(f), Subpart ZZZZ]

- 38.4 Notify the Department per Condition 72 of any deviation from the requirements in Conditions 32.1, and 36 through 38.

[18 AAC 50.040(j)(4) and 50.326(j)(4)]
[40 C.F.R. 71.6(a)(3) & (c)(6)]

39. **NESHAP Subpart ZZZZ Requirements for Existing CI Engines at an Area Source.**
For EU IDs 20, 21, 28, 33, and 34, comply with the following requirements at all times:

[18 AAC 50.040(c)(23) & (i); and 50.326(i)]
[40 C.F.R. 71.6(a)(1)]
[40 C.F.R. 63.6585, §63.6590(a)(1)(iii), §63.6595(a)(1), §63.6605(a), Subpart ZZZZ]

NESHAP Subpart ZZZZ General Monitoring, Operation, and Maintenance Requirements

- 39.1 **Good Air Pollution Control Practices.** At all times, operate and maintain EU IDs 20, 21, 28, 33, and 34, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and

Commented [Hilcorp-129]: These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 63 Subpart ZZZZ for EU IDs 8 and 9. These engines are classified for purposes of Subpart ZZZZ as existing SI RICE at an area source of HAP emissions.

maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of EU IDs 20, 21, 28, 33, and 34. The Permittee shall comply with either:

- a. the manufacturer's emission-related written operation and maintenance instructions; or
- b. a maintenance plan developed by the Permittee which must provide, to the extent practicable, for the maintenance and operation of the engine(s) in a manner consistent with good air pollution control practice for minimizing emissions.

[40 C.F.R. 63.6605(b), 63.6625(e), 63.6640(a), and Table 6, Item 9, Subpart ZZZZ]

39.2 Startup and Idle Time. For EU IDs 20, 21, 28, 33, and 34, minimize the time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading, not to exceed 30 minutes.

[40 C.F.R. 63.6625(h) and Table 2d, Subpart ZZZZ]

NESHAP Subpart ZZZZ Emissions Management Practices

39.3 For EU IDs 20, 21, 28, 33, and 34, comply with the following:

- a. Change the oil and filter every 1,000 hours of operation or annually, whichever comes first²⁵;
- b. Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

[40 C.F.R. 63.6603(a), 63.6603(b) and Table 2d, Item 1, Subpart ZZZZ]

NESHAP Subpart ZZZZ Recordkeeping for CI Engines

40. The Permittee shall keep records as follows for each of EU IDs 20, 21, 28, 33, and 34:

- 40.1** Keep records of maintenance conducted on each engine to demonstrate that the engine and after-treatment control device (if any) are operated and maintained according to the Permittee's own maintenance plan, if maintenance is performed as allowed under Condition 39.1b. These records must include, at a minimum: oil and filter change dates and corresponding hour on the hour meter; inspection and replacement dates for air cleaners, hoses, and belts; and records of other emission-related repairs and maintenance performed.

[40 C.F.R. 63.6655(e), 75 FR 9654, Subpart ZZZZ]

²⁵ The Permittee may use an oil analysis program as described in 40 C.F.R. 63.6625(i) to extend the specified oil change requirement in Condition 39.3a [ref. 40 C.F.R. 63, Subpart ZZZZ, Table 2d, Footnote 1]

40.2 Keep records in a form suitable and readily available for expeditious inspection and review, readily accessible in hard copy or electronic form, for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record pertaining to 40 C.F.R. Part 63 applicable requirements. All records may be retained off site.

[40 C.F.R. 63.6660, 63.6665 & Table 8, Subpart ZZZZ]
[40 C.F.R. 63.10(b)(1), Subpart A]

NESHAP Subpart ZZZZ Reporting for CI Engines

41. The Permittee shall report as follows for each of EU IDs 20, 21, 28, 33, and 34:

41.1 Include in the operating report required by Condition 73 a report of Subpart ZZZZ deviations as defined in 40 C.F.R. 63.6675 and of each instance in which an applicable requirement in 40 C.F.R. 63, Subpart A (Table 8 of Subpart ZZZZ) was not met.

[40 C.F.R. 63.6640(e) & 63.6650(f), Subpart ZZZZ]

41.2 Notify the Department per Condition 72 of any deviation from the requirements in Conditions 32.1, and 39 through 41.

[18 AAC 50.040(j)(4) & 50.326(j)(4)]
[40 C.F.R. 71.6(a)(3) & (c)(6)]

General Federal Requirements

42. Asbestos NESHAP. The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145 and 61.150 of Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A.

[18 AAC 50.040(b)(1) & (b)(2)(F); and 50.326(j)]
[40 C.F.R. 61, Subparts A & M, & Appendix A]

43. Protection of Stratospheric Ozone, 40 C.F.R. 82

Part 82 Subpart F – Recycling and Emissions Reduction

43.1 Refrigerant Recycling and Disposal. The Permittee shall comply with applicable standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F. Applicable requirements include 40 C.F.R. 82.154, §82.156, §82.161, and §82.166.

[18 AAC 50.040(d) & 50.326(j)]
[40 C.F.R. 82, Subpart F]

Part 82 Subpart G – Significant New Alternatives Policy Program (Halon)

43.2 The Permittee shall comply with the applicable prohibitions set out in 40 C.F.R. 82.174(b) through (d) (Protection of Stratospheric Ozone Subpart G – Significant New Alternatives Policy Program).

[18 AAC 50.040(d)]
[40 C.F.R. 82.174(b)-(d), Subpart G]

Commented [Hilcorp-130]: These are our proposed terms and conditions pertaining to the applicable requirements of 40 CFR 63 Subpart ZZZZ for EU IDs 20, 21, 28, 33, and 34. These engines are classified for purposes of Subpart ZZZZ as existing non-emergency engines located at an area source of HAP emissions not accessible by the Federal Aid Highway System.

Permit No. AQ0091TVP02AQ0091TVP03
Tyonek Platform
Revision 1: November 1, 2016

Issued: March 31, 2009<insert date>
Expires: March 31, 2014<insert date>

Part 82 Subpart H – Halon Emissions Reduction

43.3 The Permittee shall comply with the applicable prohibitions set out in 40 C.F.R. 82.270(b) through (f) (Protection of Stratospheric Ozone Subpart H – Halon Emission Reduction).

[18 AAC 50.040(d)]

[40 C.F.R. 82.270(b)-(f), Subpart H]

NESHAPs Applicability Determinations

44. The Permittee shall determine rule applicability and designation of affected sources under National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories (40 C.F.R. 63) in accordance with the procedures described in 40 C.F.R. 63.1(b). If a source becomes affected by an applicable subpart of 40 C.F.R. 63, the Permittee shall notify the Department and the Administrator as required by the applicable subpart and in accordance with 40 C.F.R. 63.9(b)(1) and shall comply with such standard by the compliance date established by the Administrator in the applicable subpart, in accordance with 40 C.F.R. 63.6(c).

[18 AAC 50.040(c)(1), 50.040(j), & 50.326(j)]

[40 C.F.R. 71.6(a)(3)(ii)]

[40 C.F.R. 63.1(b), 63.1(c)(5), 63.5(b)(4), 63.6(c)(1) & 63.9(b)(1), Subpart A]

Commented [Hilcorp-131]: Update to match the layout, permit location, and language of other Title V permits. (These were Conditions 45 – 49 of the TVP02 permit, except we have removed 40 CFR 61.152 from the condition because §61.152 does not apply. Air cleaning equipment is not used at the Tyonek Platform.)

Section 5. General Conditions

Standard Terms and Conditions

33.45. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

[18 AAC 50.326(j)(3), ~~12/1/04; 18 AAC~~ and 50.345(a) & (c), ~~11/9/08~~]

34.46. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and re-issuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[18 AAC 50.326(j)(3), ~~12/1/04; 18 AAC~~ and 50.345(a) & (f), ~~11/9/08~~]

35.47. The permit does not convey any property rights of any sort, nor any exclusive privilege.

[18 AAC 50.326(j)(3), ~~12/1/04; 18 AAC~~ and 50.345(a) & (g), ~~11/9/08~~]

36.48. **Administration Fees.** The Permittee shall pay to the Department all assessed permit administration fees. Administration fee rates are set out in 18 AAC 50.400-403~~5~~.

[18 AAC 50.326(j)(1), ~~12/1/04; 18 AAC~~ 50.400, ~~7/25/08; 18 AAC~~ & 50.403, ~~12/3/05; 18 AAC~~ 50.405, ~~1/29/05~~]
[AS 37.10.052(b), 11/04; AS 46.14.240, ~~6/7/03/7/1/10~~]

37.49. **Assessable Emissions.** For each period from July 1 through the following June 30,

~~The Permittee shall pay to the Department an annual emission fee based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410(b). The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities greater than 10 tons per year (TPY). The quantity for which fees will be assessed is the lesser of the stationary source's:~~

~~37.149.1 the stationary source's assessable potential to emit of 695-705 TPY; or~~

~~37.249.2 the stationary source's projected annual rate of emissions in TPY, that will occur from July 1 to the following June 30, based upon actual annual emissions emitted during for the most recent calendar year or another 12-month period approved in writing by the Department, when demonstrated by credible evidence of actual emissions, based upon representative information available from one or more the following methods:~~

- an enforceable test method described in 18 AAC 50.220;
- material balance calculations;
- emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or

Commented [Hilcorp-132]: Update to match the current date of the Alaska Statutes.

Commented [Hilcorp-133]: Update Conditions 37 and 38 to match Standard Permit Condition I as revised July 22, 2020, excluding the condition that pertains to a new stationary source that has not commenced construction or operation on or before March 31 as such a provision is not applicable to the Tyonek Platform and excluding the statement that fees are assessed for each pollutant emitted in quantities greater than 10 tons per year. That provision has been removed from 18 AAC 50.410 as of September 7, 2022.

We also request that Condition 37.2 be revised to change "based upon the most representative information available" to "based upon representative information available." For emissions estimation purposes related to fees, it should not matter to the Department if emissions estimates are grossly overestimated (thus resulting in higher fees) or are more accurately estimated using "the most representative information available" as long as the emissions are not grossly underestimated. None of the approved methods listed in Condition 37.2 would provide grossly underestimated emissions estimates. AP-42, which is one of the options presented in this condition, is considered representative and is widely regarded as providing very conservative (i.e., high) emissions estimates -- significantly above actual emissions -- that are useful when making a first pass at estimating whether or not permit emissions thresholds have been exceeded. Use of this approved approach should be allowed regardless of whether or not a more "representative" method may be available.

All of the emissions estimation methods listed in Condition 37.2 are approved for use. The Permittee should not be required to attempt to determine which of the approved emissions estimation methods is "the most representative." Determining whether a particular method used to estimate emissions is "the most representative" for each pollutant and each emissions unit requires supporting calculations, data for comparison, and a qualitative judgement that one estimation method is, in fact, more representative of actual emissions than another. This is an unnecessary added burden to both the Permittee and the Department.

Commented [Hilcorp-134]: Revise the stationary source assessable PTE to match the updated information provided in this permit renewal application.

- d. other methods and calculations approved by the Department, including appropriate vendor-provided emissions factors when sufficient documentation is provided.

[18 AAC 50.040(j)(43)-7/25/08; 50.035, 18 AAC 50.326(j)(1), 12/1/04; 18 AAC 50.035 & 50.346(b)(1), 11/9/08; 18 AAC 50.410, 12/14/06; 18 AAC & 50.420, 1/29/05]
[40 C.F.R. 71.5(c)(3)(ii), 7/2/07]

38.50. Assessable Emission Estimates. Emission fees will be assessedThe Permittee shall comply as follows:

~~38.50.1~~50.1 No later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions as determined in Condition 49.2. to ADEC, Air Permits Program, ATTN: Assessable Emissions Estimate, 410 Willoughby Ave., Juneau, AK 99801-1795; the submittal must include all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates; or

- a. Submit actual emissions estimates in accordance with the submission instructions on the Department's Standard Permit Conditions web page at . <https://dec.alaska.gov/air/air-permit/standard-conditions/standard-condition-i-submission-instructions/>; or
- b. Submit actual emissions estimates by submitting information contained in the Assessable Emission Estimate report through the Air Online System (AOS) at <http://dec.alaska.gov/applications/air/airtoolsweb/> by using the Permittee Portal and filling out the Emission Fee Estimate form; or
- c. The Department may, on a case-by-case basis, grant approval for an alternative submission method if unable to submit by the AOS. Upon approval by the Department, the Permittee may submit the report under a cover letter, by either an email addressed to dec.aq.airreports@alaska.gov, or a hard copy to the following address or an alternate address provided by the Department: ADEC Air Permits Program ATTN: Assessable Emissions Estimate 555 Cordova Street Anchorage, Alaska 99501

50.2 Include with the assessable emissions report all the assumptions and calculations used to estimate assessable emissions in sufficient detail so the Department can verify the estimates.

~~38.50.3~~50.3 If no estimate is ~~received~~ submitted on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit set forth in conditionCondition 49.137-1.

[18 AAC 50.040(j)(43)-7/25/08; 18 AAC 50.326(j)(1) & (3), 12/1/04; 18 AAC 50.346(b)(1), 11/9/08; 18 AAC 50.410, 12/14/06; & 18 AAC 50.420, 1/29/05]
[40 C.F.R. 71.5(c)(3)(ii), 7/2/07]

Commented [Hilcorp-135]: We propose expanding the options for submittal of actual emissions beyond those specifically stated in Standard Permit Condition I. Our proposed changes to this condition do not modify the existing language in SPC I (proposed Conditions 50.1 and 50.1a), but simply add to the condition the information found in the current version of the SPC I submission instructions (proposed Conditions 50.1b and 50.1c).

Reliance on a web page with submittal instructions that can be changed without a public process is problematic. Therefore, we request that this condition be revised to explicitly list the submittal instructions on the web page that the Permittee is directed to in this condition thereby assuring consistent submittal instructions throughout the permit term. This request is based on consideration of the following issues:

- 1) The web page instructions at issue are subject to change without notice. Therefore, the requirement to submit estimates in accordance with instructions on the web page creates an added burden and results in a potential compliance trap for the Permittee putting the Permittee at risk of administrative permit deviations.
- 2) A permit condition relying on instructions posted on a web page that can be changed without notice means that the permit is also subject to change without notice. We are concerned that information on the web page is not static and can be revised without notification or a public process.
- 3) The web page instructions need to be revised to correct inconsistencies. For example, the web page explicitly requires an E signer and submittal via the AOS portal. However, the AOS portal allows for submittal options that do not require an E-signer. This implies that the "Print Document" feature under "Report Options" within the AOS portal cannot be used because it does not require an E-signer. We request that the Department revise the web page instructions to allow for all submittal options that are available using the AOS Portal, not just the E-signer option.

39.51. Good Air Pollution Control Practice. The Permittee shall do the following for EU IDs ~~8, 12, 10, 12, 20, 21, and 37~~ [38, and 39](#):

~~39.1~~[51.1](#) perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;

~~39.2~~[51.2](#) keep records of any maintenance that would have a significant effect on emissions; the records may be kept in electronic format; and

~~39.3~~[51.3](#) keep a copy of either the manufacturer's or the operator's maintenance procedures.

[18 AAC 50.030, ~~11/9/08~~; ~~18 AAC~~ 50.326(j)(3), ~~12/1/04~~; & ~~18 AAC~~ 50.346(b)(5), ~~11/9/08~~]

40.52. Dilution. The Permittee shall not dilute emissions with air to comply with this permit. Monitoring shall consist of an annual certification that the Permittee does not dilute emissions to comply with this permit.

[18 AAC 50.045(a), ~~10/1/04~~]

41.53. Reasonable Precautions to Prevent Fugitive Dust. A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.

[18 AAC 50.045(d), ~~10/1/04~~; ~~18 AAC~~ 50.040(e), ~~7/25/08~~; ~~18 AAC~~ 50.326(j)(3), ~~12/1/04~~; ~~18 AAC~~ & 50.346(c), ~~11/9/08~~]

~~41.1~~[53.1](#) The Permittee shall keep records of

- a. complaints received by the Permittee and complaints received by the Department and conveyed to the Permittee; and
- b. any additional precautions that are taken
 - (i) to address complaints described in ~~e~~Condition ~~53.1a~~[41.1](#) or to address the results of Department inspections that found potential problems; and
 - (ii) to prevent future dust problems.

~~41.2~~[53.2](#) The Permittee shall report according to ~~e~~Condition ~~55~~[43](#).

42.54. Stack Injection. The Permittee shall not release materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack at a [stationary](#) source constructed or modified after November 1, 1982, except as authorized by a construction permit, Title V permit, or air quality control permit issued before October 1, 2004. [Monitoring shall consist of an annual certification that the Permittee does not conduct stack injection at the stationary source.](#)

[18 AAC 50.055(g), ~~7/25/08~~]

Commented [Hilcorp-136]: Update the list of emissions units to which this requirement applies. Emissions units 8, 9, 20 and 21 are covered under GAPCP in NESHA Subpart ZZZZ, so the State GAPCP rule no longer applies to these units. Emissions unit 11 has been removed from service. Emissions unit 37 is an insignificant emissions unit. The State's standard Good Air Pollution Control Practices condition does not apply to IEUs.

Commented [Hilcorp-137]: Update Condition 41 and the associated rule citations to match Standard Permit Condition X as revised July 22, 2020.

Commented [Hilcorp-138]: Update Condition 42 to reflect the language used by the Department in other Title V permits, and to match 18 AAC 50.055(g).

~~43.55.~~ Air Pollution Prohibited. No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.

[18 AAC 50.110, 5/26/72; 18 AAC 50.040(j)(4)(e), 7/25/08, 50.110; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC & 50.346(a), 11/9/08]
[40 C.F.R. 71.6(a)(3), 7/2/07]

Commented [Hilcorp-139]: Update Condition 43 to match Standard Permit Condition II as revised July 22, 2020.

~~43.1~~ Monitoring, Recordkeeping, and Reporting for Air Pollution Prohibited:

~~a.55.1~~ Monitoring. The Permittee shall monitor as follows: ~~If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to condition 64.~~

~~b.a.~~ As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of ~~condition~~Condition 5543.

~~43.2b.~~ The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

~~a.(i)~~ after an investigation because of a complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of ~~condition~~Condition 5543; or

~~b.(ii)~~ the Department notifies the Permittee that it has found a violation of ~~condition~~Condition 5543.

~~43.355.2~~ Recordkeeping. The Permittee shall keep records of

- a. the date, time, and nature of all emissions complaints received;
- b. the name of the person or persons that complained, if known;
- c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of ~~condition~~Condition 5543; and
- d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.

~~55.3~~ Reporting. The Permittee shall report as follows:

~~43.4a.~~ With each ~~stationary source~~-operating report under ~~condition~~Condition 7365, the Permittee shall include a brief summary report which must include ~~the following for the period covered by the report:~~

~~a.(i)~~ the number of complaints received;

~~b.(ii)~~ the number of times the Permittee or the Department found corrective action necessary;

~~e.(iii)~~ the number of times action was taken on a complaint within 24 hours; and

~~d.(iv)~~ the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.

b. The Permittee shall notify the Department of a complaint that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.

~~43.5c.~~ If emissions present a potential threat to human health or safety, the Permittee shall report any such emissions according to Condition 72.

~~44.56.~~ **Technology-Based Emission Standard.** If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235(d), causes emissions in excess of a technology-based emission standard²⁶ listed in ~~condition~~Conditions 18, 2929, 3030, 31.1, or 3331, 32, or 46 (refrigerants), the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard. Excess emissions reporting under ~~condition~~Condition 7264 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under ~~condition~~Condition 7264.

[18 AAC 50.040(j)(4), 50.235(a), 10/1/04; 18 AAC 50.326(j)(4), 12/1/04; 18 AAC 50.040(j)(4), 7/25/08]
[40 C.F.R. 71.6(c)(6), 7/2/07]

~~45.~~ **Asbestos NESHAP.** The Permittee shall comply with the requirements set forth in 40 C.F.R. 61.145, 61.150, and 61.152 of Subpart M, and the applicable sections set forth in 40 C.F.R. 61, Subpart A and Appendix A.

[18 AAC 50.040(b)(1) & (2)(F), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 61, Subparts A & M, & Appendix A, 5/16/07]

~~46.~~ **Refrigerant Recycling and Disposal.** The Permittee shall comply with applicable standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F.

[18 AAC 50.040(d), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 82, Subpart F, 7/1/07]

Commented [Hilcorp-140]: Update the list of identified conditions to include all technology-based emissions standards that apply.

²⁶ *Technology-based emission standard* means a best available control technology standard (BACT); a lowest achievable emission rate standard (LAER); a maximum achievable control technology standard established under 40 C.F.R. 63, Subpart B, adopted by reference in 18 AAC 50.040(c); a standard adopted by reference in 18 AAC 50.040(a) or (c); and any other similar standard for which the stringency of the standard is based on determinations of what is technologically feasible, considering relevant factors.

NESHAPs Applicability Determinations

47. The Permittee shall determine rule applicability and designation of affected sources under National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories (40 C.F.R. 63) in accordance with the procedures described in 40 C.F.R. 63.1(b) and 63.10(b)(3). If a source becomes affected by an applicable subpart of 40 C.F.R. 63, Permittee shall comply with such standard by the compliance date established by the Administrator in the applicable subpart, in accordance with 40 C.F.R. 63.6(c).

47.1 If the Permittee determines that the source is not subject to a relevant standard or other requirement established under 40 C.F.R. 63, the Permittee must keep a record of the applicability determination on site for a period of 5 years after the determination or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the Permittee believes the source is unaffected. The analysis (or other information) must be sufficiently detailed to allow the Department to make a finding about the source's applicability status with regard to the relevant standard or other requirement.

[18 AAC 50.040(c)(1)(A) & (E) & 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(ii), 7/2/07; 40 C.F.R. 63.1(b), 63.6(c)(1), & 63.10(b)(3), 7/16/07]

Halon Prohibitions, 40 C.F.R. 82

48. The Permittee shall comply with the applicable prohibitions set out in 40 C.F.R. 82.174 (Protection of Stratospheric Ozone Subpart G—Significant New Alternatives Policy Program).

[18 AAC 50.040(d), 7/25/08]
[40 C.F.R. 82.174 (b) –(d), 7/1/07]

48.1 Do not use a substitute which a person knows or has reason to know was manufactured, processed, or imported in violation of the regulations of 40 C.F.R. 82 Subpart G or knows or has reason to know was manufactured, processed, or imported in violation of any use restriction in the acceptability determination, after the effective date of any rulemaking imposing such restrictions.

48.2 Do not use a substitute without adhering to any use restrictions set by the acceptability decision, after the effective date of any rulemaking imposing such restrictions.

48.3 Do not use a substitute after the effective date of any rulemaking adding such substitute to the list of unacceptable substitutes.

49. The Permittee shall comply with the following prohibitions set out in 40 C.F.R. 82.270.

[18 AAC 50.040(d), 7/25/08]
[40 C.F.R. 82.270 (b) –(f), 7/1/07]

49.1 No person testing, maintaining, servicing, repairing, or disposing of halon-containing equipment or using such equipment for technician training may knowingly vent or otherwise release into the environment any halons used in such equipment, as follows:

- a. De minimis²⁷ releases associated with good faith attempts to recycle or recover halon are not subject to this prohibition.
- b. Release of residual halon contained in fully discharged total flooding fire extinguishing systems would be considered a de minimis release associated with good faith attempts to recycle or recover halon.
- e. Release of halons during testing of fire extinguishing systems is not subject to this prohibition if the following four conditions are met:
 - (i) systems or equipment employing suitable alternative fire extinguishing agents are not available;
 - (ii) system or equipment testing requiring release of extinguishing agent is essential to demonstrate system or equipment functionality;
 - (iii) failure of the system or equipment would pose great risk to human safety or the environment; and
 - (iv) a simulant agent cannot be used in place of the halon during system or equipment testing for technical reasons.
- d. Releases of halons associated with research and development of halon alternatives, and releases of halons necessary during analytical determination of halon purity using established laboratory practices are exempt from this prohibition.
- e. This prohibition does not apply to qualification and development testing during the design and development process of halon-containing systems or equipment when such tests are essential to demonstrate system or equipment functionality and when a suitable simulant agent cannot be used in place of the halon for technical reasons.
- f. This prohibition does not apply to the emergency release of halons for the legitimate purpose of fire extinguishing, explosion inertion, or other emergency applications for which the equipment or systems were designed.

²⁷ Legal term meaning "of minimum importance."

- 49.2 ~~Organizations that employ technicians who test, maintain, service, repair or dispose of halon-containing equipment shall take appropriate steps to ensure that technicians hired on or before April 6, 1998 will be trained regarding halon emissions reduction by September 1, 1998. Technicians hired after April 6, 1998 shall be trained regarding halon emissions reduction within 30 days of hiring, or by September 1, 1998, whichever is later.~~
- 49.3 ~~No person shall dispose of halon-containing equipment except by sending it for halon recovery to a manufacturer operating in accordance with NFPA²⁶ 10 and NFPA 12A standards, a fire equipment dealer operating in accordance with NFPA 10 and NFPA 12A standards, or a recycler operating in accordance with NFPA 10 and NFPA 12A standards. This provision does not apply to ancillary system devices such as electrical detection control components which are not necessary to the safe and secure containment of the halon within the equipment, to fully discharged total flooding systems, or to equipment containing only de minimis quantities of halons.~~
- 49.4 ~~No person shall dispose of halon except by sending it for recycling to a recycler operating in accordance with NFPA 10 and NFPA 12A standards, or by arranging for its destruction using one of the following controlled processes:~~
- a. ~~Liquid injection incineration;~~
 - b. ~~Reactor cracking;~~
 - e. ~~Gaseous/fume oxidation;~~
 - d. ~~Rotary kiln incineration;~~
 - e. ~~Cement kiln;~~
 - f. ~~Radio frequency plasma destruction; or~~
 - g. ~~An EPA approved destruction technology that achieves a destruction efficiency of 98 percent or greater.~~
- 49.5 ~~No owner of halon-containing equipment shall allow halon release to occur as a result of failure to maintain such equipment.~~

[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3), 7/2/07]

Open Burning Requirements

50.57. The Permittee shall not conduct open burning at the stationary source.

[18 AAC 50.040(j), 50.065, 1/18/97; 18 AAC 50.040(j), 7/25/08; & 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3), 7/2/07]

²⁶ National Fire Protection Association

Commented [Hilcorp-141]: Update and move to new permit location to match other Title V permits. (These are now new permit Conditions 42, 43, and 44.)

Section 6. General Source Testing and Monitoring Requirements

51.58. Requested Source Tests. In addition to any source testing explicitly required by the permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.

[18 AAC 50.220(a), ~~10/1/01~~; ~~18 AAC~~ [50.345\(a\) & \(k\)](#), ~~11/9/08~~]

52.59. Operating Conditions. Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing

[18 AAC 50.220(b), ~~10/1/04~~]

~~52.159.1~~ at a point or points that characterize the actual discharge into the ambient air; and

~~52.259.2~~ at the maximum rated burning or operating capacity of the emissions unit or another rate determined by the Department to characterize the actual discharge into the ambient air.

53.60. Reference Test Methods. The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:

~~53.160.1~~ Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.

[~~18 AAC 50.220(e)(1)(A)~~, ~~10/1/04~~; 18 AAC 50.040(a) & [50.220\(c\)\(1\)\(A\)](#), ~~7/25/08~~]
[40 C.F.R. 60, ~~7/1/07~~]

~~53.260.2~~ Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(b) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 61.

[18 AAC 50.040(b), ~~7/25/08~~; & ~~18 AAC~~ [50.220\(c\)\(1\)\(B\)](#), ~~10/1/04~~]
[40 C.F.R. 61, ~~5/16/07~~]

~~53.360.3~~ Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(c) must be conducted in accordance with the source test methods and procedures specified in 40 C.F.R. 63.

[18 AAC 50.040(c), ~~7/25/08~~; & ~~18 AAC~~ [50.220\(c\)\(1\)\(C\)](#), ~~10/1/04~~]
[40 C.F.R. 63, ~~7/16/07~~]

~~53.460.4~~ Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9 and. The Permittee may use the form in [Section 11](#) ~~Section 12~~ to record data.

[18 AAC 50.030, ~~11/9/08~~; & ~~18 AAC~~ [50.220\(c\)\(1\)\(D\)](#), ~~10/1/04~~]

~~53.560.5~~ Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.

[18 AAC 50.040(a)(3), ~~7/25/08~~; & ~~18 AAC~~ [50.220\(c\)\(1\)\(E\)](#), ~~10/1/04~~]

Commented [Hilcorp-142]: Update to reflect the language used by the Department in other Title V permits.

[40 C.F.R. 60, Appendix A, ~~7/1/07~~]

~~53-60.6~~ Source testing for emissions of PM-10 must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M, Methods 201 or 201A and 202.

[18 AAC 50.035(b)(2), ~~11/9/08; 18 AAC & 50.220(c)(1)(F), 10/1/04~~
[40 C.F.R. 51, Appendix M, ~~7/1/07~~]

~~53-760.7~~ Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63, Appendix A, Method 301.

[18 AAC 50.040(c)(24), ~~7/25/08; 18 AAC & 50.18 AAC 50.220(c)(2), 10/1/04~~
[40 C.F.R. 63, Appendix A, Method 301, ~~7/16/07~~]

54.61. Excess Air Requirements. To determine compliance with this permit, standard exhaust gas volumes must include only the volume of gases formed from the theoretical combustion of the fuel, plus the excess air volume normal for the specific emission unit type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).

[18 AAC 50.220(c)(3), ~~10/1/04; 18 AAC & 50.990(102), 7/25/08~~]

55.62. Test Exemption. The Permittee is not required to comply with ~~condition~~ [Conditions 6457, 6558 and 6659 \(Test Plans, Test Notifications, and Test Reports\)](#) when the exhaust is observed for visible emissions by Method 9 Plan (~~condition~~ [Condition 2.1](#)) ~~or Smoke/No Smoke Plan (condition 2.2)~~.

[18 AAC 50.345(a), ~~11/9/08~~]

56.63. Test Deadline Extension. The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.

[18 AAC 50.345(a) & (l), ~~11/9/08~~]

57.64. Test Plans. Except as provided in ~~condition~~ [Condition 6255](#), before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance and must specify how the emissions unit will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under ~~condition~~ [Condition 5854](#) and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

[18 AAC 50.345(a) & (m), ~~11/9/08~~]

58.65. Test Notification. Except as provided in ~~condition~~ [Condition 6255](#), at least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and the time the source test will begin.

[18 AAC 50.345(a) & (n), ~~11/9/08~~]

Commented [Hilcorp-143]: We request additional language be included to increase clarity and removal of the reference to use of the smoke/no smoke plan. All such references should be removed from the permit since we will not use the smoke/no smoke plan.

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59.66. Test Reports. Except as provided in ~~condition~~[Condition 6255](#), within 60 days after completing a source test, the Permittee shall submit ~~two copies~~[one certified copy](#) of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall ~~additionally~~ certify the results in the manner set out in ~~condition~~[Condition 6964](#). If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

[18 AAC 50.345(a) & (o), ~~11/9/08~~]

67. Particulate Matter Calculations. In source testing for compliance with the particulate matter standards in Conditions 6 and 20.2, the three-hour average is determined using the average of three one-hour test runs.

[18 AAC 50.220(f)]

Commented [Hilcorp-144]: Revise to match the language of 18 AAC 50.345(o).

Commented [Hilcorp-145]: Add this condition, which is found in other Title V permits.

Section 7. General Recordkeeping and Reporting Requirements

Recordkeeping Requirements

60-68. Recordkeeping Requirements. The Permittee shall keep all records required by this permit for at least five years after the date of collection, including:

[[18 AAC 50.040\(a\)\(1\)](#) & ~~18 AAC 50.326(j)~~, ~~12/1/04~~]
[40 C.F.R 60.7(f), Subpart A, ~~7/1/07~~];
[40 C.F.R. 71.6(a)(3)(ii)(B), ~~7/2/07~~]

~~60-68.1~~ copies of all reports and certifications submitted pursuant to this section of the permit; and

~~60-68.2~~ records of all monitoring required by this permit, and information about the monitoring including:

- the date, place, and time of sampling or measurements;
- the date(s) analyses were performed;
- the company or entity that performed the analyses;
- the analytical techniques or methods used;
- the results of such analyses; and
- the operating conditions as existing at the time of sampling or measurement.

Reporting Requirements

61-69. Certification. The Permittee shall certify any permit application, report, affirmation, or compliance certification submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: “*Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.*” Excess emission reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.

~~61-69.1~~ The Department may accept an electronic signature on an electronic application or other electronic record required by the Department if [the person providing the electronic signature](#)

- [uses a security procedure, as defined in AS 09.80.190, that the Department has approved; and a certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and](#)
- [the person providing the electronic signature has made an agreement, with the certifying authority described in condition 61.1a, that the person](#) accepts or agrees to be bound by an electronic record executed or adopted with that signature.

[18 AAC 50.345(a) & (j), ~~11/9/08~~; 18 AAC 50.205, ~~10/1/04~~; 18 AAC 50.326(j) & [50.346\(b\)\(10\)](#), ~~12/1/04~~]

Commented [Hilcorp-146]: Update Condition 61 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition XVII.

[40 C.F.R. 71.6(a)(3)(iii)(A), 7/2/07]

62.70. Submittals. Unless otherwise directed by the Department or this permit, the Permittee shall ~~send two copies submit to the Department one certified copy~~ of reports, compliance certifications, and/or other submittals required by this permit ~~to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician.~~ The Permittee may ~~submit the documents electronically or by hard copy, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with condition 61.~~

Commented [Hilcorp-147]: Update Condition 62 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition XVII.

70.1 Submit the certified copy of reports, compliance certifications, and/or other submittals in accordance with the submission instructions on the Department's Standard Permit Conditions web page at <https://dec.alaska.gov/air/air-permit/standard-conditions/standard-condition-xvii-submission-instructions/>.

[18 AAC 50.326(j)(3) & 50.346(b)(10), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/2/07]

63.71. Information Requests. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the ~~federal~~ Federal ~~administrator~~ Administrator.

[18 AAC 50.345(a) & (i), 11/9/08; 18 AAC 50.200, 10/1/04; 18 AAC 50.326(a) & (j), 12/1/04]
[40 C.F.R. 71.5(a)(2) & 71.6(a)(3), 7/2/07]

Commented [Hilcorp-148]: Update to reflect the capitalization used by the Department in other Title V permits.

64.72. Excess Emissions and Permit Deviation Reports. The Permittee shall report excess emissions and permit deviations as follows:

[18 AAC 50.235(a)(2) & 50.240(e), 10/1/04; 18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.346(b)(2) & (3), 11/9/08]

Commented [Hilcorp-149]: Update Condition 64 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition III.

64.72.1 Excess Emissions Reporting. Except as provided in ~~condition~~ Condition 5543, the Permittee shall report all emissions or operations that exceed ~~or deviate from the requirements~~ emissions standards or limits of this permit as follows:

- a. ~~In~~ In accordance with 18 AAC 50.240(c), as soon as possible ~~after the event commenced or is discovered~~, report
 - (i) excess emissions that present a potential threat to human health or safety; and
 - (ii) excess emissions that the Permittee believes to be unavoidable;
- b. ~~In~~ In accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or nonroutine repair that causes emissions in excess of a technology based emission standard.

- c. If a continuous or recurring excess emissions is not corrected within 48 hours of discovery, report within 72 hours of discovery unless the Department provides written permission to report under Condition 72.1d.
- d. Report all other excess emissions not described in Conditions 72.1a, 72.1b, and 72.1c within 30 days after the end of the month during which the excess emissions occurred or as part of the next routine operating report in Condition 73 for excess emissions that occurred during the period covered by the report, whichever is sooner.
- e. If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.
[18 AAC 50.235(a), 50.240(c), 50.326(j)(3), & 50.346(b)(2)]
- ~~e. report all other excess emissions and permit deviations~~
 - ~~(i) within 30 days of the end of the month in which the emissions or deviation occurs, except as provided in conditions 64.1c(ii) and 64.1c(iii);~~
 - ~~(ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under condition 64.1c(i); and~~
 - ~~(iii) for failure to monitor, as required in other applicable conditions of this permit.~~

72.2 Permit Deviations Reporting. For permit deviations that are not “excess emissions” as defined under 18 AAC 50.990:

- a. Report according to the required deadline for failure to monitor, as specified in other applicable conditions of this permit.
- b. Report all other permit deviations within 30 days after the end of the month during which the deviation occurred, or as part of the next routine operating report in Condition 73 for deviations that occurred during the period covered by the report, whichever is sooner.

[18 AAC 50.326(j)(3) & 50.346(b)(2)]

~~64.2~~**72.3 Notification Form.** When reporting either excess emissions or permit deviations, ~~the~~the Permittee ~~must~~shall report using either the Department’s on-line form, which can be found at the Division of Air Quality’s Air Online Services (AOS) system webpage Permittee Portal option, <http://dec.alaska.gov/applications/air/airtoolsweb/>, or, if the Permittee prefers, the form contained in ~~Section 12~~Section 13 of this permit. The Permittee must provide all information called for by the form that is used. Submit the report in accordance with the submission instructions on the Department’s Standard Permit Conditions webpage found at <https://dec.alaska.gov/air/air-permit/standard-conditions/standard-conditions-iii-and-iv-submission-instructions/>.

~~64.3~~ If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

[18 AAC 50.326(j)(3) & 50.346(b)(3)]

65.73. Operating Reports. During the life of this permit²⁹, the Permittee shall submit to the Department ~~one original and one copy of~~ an operating report in accordance with Condition 70 by ~~April 30~~ August 1 for the period January 1 to ~~March 31~~ June 30, ~~by July 30 for the period April 1 to June 30, by October 30 for the period July 1 to September 30, and by February 15 for the period October 1 to December 31 of the previous year. The Permittee, at their discretion, may submit one original and one copy in electronic format (PDF or other Department compatible image format).~~

[18 AAC 50.346(b)(6), 11/9/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(3)(iii)(A), 7/2/07]

~~65.173.1~~ The operating report must include all information required to be in operating reports by other conditions of this permit for the period covered by the report.

~~65.273.2~~ If ~~When~~ excess emissions or permit deviations that occurred during the reporting period are not ~~reported included with the operating report~~ under ~~condition~~ Condition 73.165.1, ~~either~~ the Permittee shall identify:

a. ~~The Permittee shall identify~~

(i) ~~a.~~ the date of the excess emissions or permit deviation;

(ii) ~~b.~~ the equipment involved;

(iii) ~~c.~~ the permit condition affected;

(iv) ~~d.~~ a description of the excess emissions or permit deviation; and

(v) ~~e.~~ any corrective action or preventive measures taken and the date(s) of such actions; ~~or,~~

73.3 When excess emissions or permit deviations reports have already been ~~reported~~ submitted under ~~condition~~ Condition 7264 during the period covered by the operating report, the Permittee ~~may~~ shall either:

a. include a copy of those excess emissions or permit deviation reports with the operating report, or

b. cite the ~~date or date(s)~~ of those reports.

Commented [Hilcorp-150]: This citation should be changed from the one found in Standard Permit Condition III because it should pertain specifically and only to the Notification Form described in Condition 64.2. The revised citation references the appropriate regulatory bases for use of SPC IV (the Notification Form) in a permit.

Commented [Hilcorp-151]: Update Condition 65 to match the current (July 22, 2020) adopted version of the Department's Standard Permit Condition VII. Our request includes removal of the quarterly operating report submittal schedule found in the current permit. We would like to change the reporting period for the Tyonek Platform to match the reporting periods found in the Title V permits of other Hilcorp Cook Inlet sources.

²⁹ *Life of this permit* is defined as the permit effective dates, including any periods of reporting obligations that extend beyond the permit effective dates. For example, if a permit expires prior to the end of a calendar year, there is still a reporting obligation to provide operating reports for the periods when the permit was in effect.

~~65.373.4~~ The operating report must include [for the period covered by the report](#) a listing of emissions monitored under ~~condition~~ [Conditions 2.2e2.1e, 2.2e.7.2, and 29.1a29.1a](#), which trigger additional testing or monitoring, whether or not the emissions monitored exceed an emission standard. The Permittee shall include in the report:

- the date of the emissions;
- the equipment involved;
- the permit condition affected; and
- the monitoring result which triggered the additional monitoring.

~~65.473.5~~ **Transition from Expired to Renewed Permit.** For the first period of ~~this a~~ renewed [or revised](#) operating permit, also provide the previous permit's [\(or previous permit version's\)](#) operating report elements covering that partial period immediately preceding the effective date of ~~this the~~ renewed [or revised](#) permit.

[18 AAC [50.240\(c\)](#), 50.346(b)(6) & 50.326(j)(3)]
[40 C.F.R. 71.6(a)(3)(iii)(A)]

~~66.74.~~ **Annual Compliance Certification.** Each year by March 31, the Permittee shall compile and submit to the Department ~~one original and one copy of an annual compliance certification report according to Condition 70.~~³⁰ [The Permittee, at their discretion, may submit one original and one copy in electronic format \(PDF or other Department compatible image format\).](#)

~~66.174.1~~ Certify the compliance status of the stationary source over the preceding calendar year consistent with the monitoring required by this permit, as follows:

- identify each term or condition set forth in Section 3 through Section 9, that is the basis of the certification;
- briefly describe each method used to determine the compliance status;
- state whether compliance is intermittent or continuous; and
- identify each deviation and take it into account in the compliance certification.

~~66.274.2~~ **Transition from Expired to Renewed Permit.** For the first period of ~~this a~~ renewed [or revised](#) operating permit, also provide the previous permit's [\(or previous permit version's\)](#) annual compliance certification report elements covering that partial period immediately preceding the effective date of ~~this the~~ renewed [or revised](#) permit.

~~66.374.3~~ In addition, submit a copy of the report directly to the [Clean Air Act Compliance Manager, US EPA-Region 10, Office of Air Quality, M/S OAQ-107Mail Stop: OCE-101, 1200 Sixth Avenue, Seattle, WA 98101.](#)

[18 AAC 50.205, ~~40/1/04; 50.326(j), & 18 AAC~~ 50.345(a) & (j), ~~11/9/08; 50.326(j), 12/1/04~~]

Commented [Hilcorp-152]: The provisions of this condition apply equally to a permit that has been revised during the reporting period as well as to a permit that has been renewed. Our proposed revisions to the condition make this clear.

Commented [Hilcorp-153]: Update to include a footnote and to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-154]: The provisions of this condition apply equally to a permit that has been revised during the reporting period as well as to a permit that has been renewed. Our proposed revisions to the condition make this clear.

Commented [Hilcorp-155]: Update the listed EPA address for compliance certification report submittals.

³⁰ See Conditions 74.2 and 74.3 for clarification on the number of reports required.

[40 C.F.R. 71.6(c)(5), 7/2/07]

67.75. NSPS and NESHAP Reports. The Permittee shall:

75.1 **Reports.** Except for Federal reports and notices submitted through EPA's CDX-CEDRI on-line reporting system, attach to the operating report required by Condition 73, a copy of any NSPS and NESHAPs notifications and reports submitted to the U.S. EPA Region 10 during the period covered by the operating report unless a copy has already been provided to the Department; and

75.2 **Waivers.** Provide to the Department a written copy of any EPA-granted alternative monitoring requirement, custom monitoring schedule or waiver of the Federal emission standards, recordkeeping, monitoring, performance testing, or reporting requirements that EPA approved during the effective duration of this permit. The Permittee shall keep a copy of each U.S. EPA-issued monitoring waiver or custom monitoring schedule with the permit.

[18 AAC 50.040(j)(4) & 50.326(j)(4)]
[40 C.F.R. 71.6(c)(6)]

~~67.1 attach to the operating report required by condition 65, a copy of any NSPS and NESHAPs reports submitted to the EPA Region 10 within the reporting period; and~~

~~67.2 upon request by the Department, notify and provide a written copy of any EPA-granted waiver of the federal emission standards, recordkeeping, monitoring, performance testing, or reporting requirements, or approved custom monitoring schedules.~~

[18 AAC 50.326(j)(4), 12/1/04 ;18 AAC 50.040(j), 7/25/08]
[40 C.F.R. 71.6(c)(6), 7/2/07]

76. Emission Inventory Reporting. The Permittee shall submit to the Department reports of actual emissions for the previous calendar year, by emissions unit³¹, of CO, NH₃, NO_x, PM₁₀, PM_{2.5}, SO₂, VOCs, and Lead (Pb) (and lead compounds), as follows:

76.1 **Every Year Inventory.** Each year by April 30, if the stationary source's potential to emit for the previous calendar year equals or exceeds:

- a. 250 tons per year (TPY) of NH₃, PM₁₀, PM_{2.5}, or VOCs; or
- b. 2,500 TPY of CO, NO_x, or SO₂.

76.2 **Triennial Inventory.** Every third year by April 30, if the stationary source's potential to emit (except actual emissions for Pb) for the previous calendar year equals or exceeds:

- a. 0.5 TPY of actual Pb, or
- b. 1,000 TPY of CO; or

Commented [Hilcorp-156]: Update to reflect the language used by the Department in other recently issued Title V permits.

Commented [Hilcorp-157]: Add this new condition to incorporate ADEC's Standard Permit Condition XV except do not include the portion of SPC XV that pertains to stationary sources located in Nonattainment Areas. This does not apply to the Tyonek Platform stationary source and will not apply during the permit term.

Based on the potential emissions for this stationary source, reporting is required every 3 years.

³¹ Emissions from nonroad engines are not required to be included in the emissions inventory reports.

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c. 100 TPY of SO₂, NH₃, PM₁₀, PM_{2.5}, NO_x, or VOC.

76.3 For reporting under Condition 76.2, the Permittee shall report the annual emissions and required data elements under Condition 76.4 every third year for the previous calendar year as scheduled by the EPA.³²

76.4 For each emissions unit and the stationary source, include in the report the required data elements contained within the form included in the Emission Inventory Instructions available at the Department's Air Online Services (AOS) system on the Point Source Emission Inventory webpage at <https://dec.alaska.gov/applications/air/airtoolsweb>.

76.5 Submit the report in accordance with the submission instructions on the Department's Standard Permit Conditions webpage at <https://dec.alaska.gov/air/air-permit/standard-conditions/standard-conditions-xv-and-xvi-submission-instructions/>.

[18 AAC 50.040(j)(4), 50.200, 50.326(j)(3), & 50.346(b)(8)]
[40 C.F.R. 51.15, 51.30(a)(1) & (b)(1) and 40 C.F.R. 51 Appendix A to Subpart A]

³² The calendar years for which reports are required are based on the triennial reporting schedule in 40 C.F.R. 51.30(b)(1), which requires states to report emissions data to the EPA for inventory years 2011, 2014, 2017, 2020, and every 3rd year thereafter. Therefore, the Department requires Permittees to report emissions data for the same inventory years by April 30 of the following year (e.g., triennial emission inventory report for 2020 is due April 30, 2021, triennial emission inventory report for 2023 is due April 30, 2024, etc.).

Section 8. Permit Changes and Renewal

77. Permit Applications and Submittals: The Permittee shall comply with the following requirements for submitting application information to the EPA Region 10:

77.1 The Permittee shall provide a copy of each application for modification or renewal of this permit, including any compliance plan, or application addenda, at the time the application or addendum is submitted to the Department³³.

77.2 The information shall be submitted to the Part 70 Operating Permit Program, US EPA Region 10, Mail Stop: OAW-150, 1200 Sixth Avenue, Suite 155, Seattle, WA 98101.

77.3 To the extent practicable, the Permittee shall provide to EPA applications in portable document format (PDF); MS Word format (.doc); or other computer-readable format compatible with EPA's national database management system; and

77.4 The Permittee shall maintain records as necessary to demonstrate compliance with this condition.

[18 AAC 50.040(j)(7), 50.326(a) & (j)(3), & 50.346(b)(7)]
[40 C.F.R. 71.10(d)(1)]

68.78. Emissions Trading. No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit.

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(8), 7/2/07]

69.79. Off Permit Changes. The Permittee may make changes that are not addressed or prohibited by this permit other than those subject to the requirements of 40 C.F.R. Part 72 through 78 or those that are modifications under any provision of Title I of the Act to be made without a permit revision, provided that the following requirements are met:

[18 AAC 50.040(j)(4), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(a)(12), 7/2/07]

69.179.1 Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition;

69.279.2 Provide contemporaneous written notice to EPA and the Department of each such change, except for changes that qualify as insignificant under 18 AAC 50.326(d) – (i). Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change;

69.379.3 The change shall not qualify for the shield under 40 C.F.R. 71.6(f);

Commented [Hilcorp-158]: Insert this condition and footnote to incorporate ADEC's Standard Permit Condition XIV according to the manner used by the Department in other Title V permits.

Commented [Hilcorp-159]: Correct grammatical error.

Commented [Hilcorp-160]: We propose moving this citation to follow all sub-conditions to this condition to match the layout used by the Department in other Title V permits.

³³ Submit the required documents in Condition 77.1 to the Department's Anchorage office. The current address for the Anchorage office is: Air Permit Intake Clerk, ADEC, 555 Cordova St., Anchorage, AK 99501.

~~69.479.4~~ The Permittee shall keep a record describing changes made at the stationary source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

[18 AAC 50.040(j)(4) & 50.326(j)]
[40 C.F.R. 71.6(a)(12)]

Commented [Hilcorp-161]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-162]: Move from above.

70.80. Operational Flexibility. The Permittee may make changes within the permitted stationary source without requiring a permit revision if the changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in terms of total emissions):

~~70.180.1~~ The Permittee shall provide EPA and the Department with a written notification no less than 7 days in advance of the proposed change.

~~70.280.2~~ For each such change, the written notification required by Condition 80.1 above shall include a brief description of the change within the permitted facility stationary source, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

Commented [Hilcorp-163]: Revise to improve clarity (as done by the Department in other Title V permits) and to change "facility" to "stationary source" per current ADEC policy and definitions.

~~70.380.3~~ The permit shield described in 40 C.F.R. 71.6(f) shall not apply to any change made pursuant to condition Condition 80.70.

[18 AAC 50.040(j)(4), ~~7/25/08~~; 18 AAC 50.326(j), ~~12/1/04~~]
[40 C.F.R. 71.6(a)(13), ~~7/2/07~~]

71.81. Permit Renewal. To renew this permit, the Permittee shall submit to the Department and EPA an application under 18 AAC 50.326 no sooner than 18 months before the expiration date of this permit September 30, 2012 and no later than 16 months before the expiration date of this permit September 30, 2013 according to Condition 77. The renewal application shall be complete before the permit expiration date listed on the cover page of this permit. Permit expiration terminates the stationary source's right to operate unless a timely and complete renewal application has been submitted consistent with 40 C.F.R. 71.7(b) and 71.5(a)(1)(iii).

[18 AAC 50.040(j)(3), ~~7/25/08~~; 18 AAC 50.326(c)(2) & (j)(2), ~~12/1/04~~]
[40 C.F.R. 71.5(a)(1)(iii), 71.7(b) & (c)(1)(ii), ~~7/2/07~~]

Commented [Hilcorp-164]: Update to reflect the language used by the Department in other Title V permits.

Include place holders for appropriate dates tied to the effective date of the renewed permit that results from this application.

~~72. Permit Applications.~~ The Permittee shall send original applications for modification or renewal of this permit, and application addenda to the Department's Anchorage office³⁴. In addition, the Permittee may provide electronic copies of application documents; portable document format (PDF) or MS Word are acceptable formats.

[18 AAC 50.326(j), ~~12/1/04~~]
[40 C.F.R. 71.7(a)(1)(i), ~~7/2/07~~]

~~73. The Permittee shall submit to the EPA Region 10 at the address specified in condition 72.66:~~

³⁴ The current address for the Anchorage office is: ADEC, 619 East Ship Creek, Suite 249, Anchorage, AK 99501.

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~~73.1 a copy of any application for modification or renewal of this permit, and application addenda at the time the application or addendum is submitted to the Department;~~

~~73.2 to the extent practicable, the Permittee shall provide applications in computer readable format compatible with EPA's national database management system. In the interim until EPA implements such system, portable document format (PDF) or MS Word are acceptable formats.~~

[18 AAC 50.040(j)(7), 7/25/08; 18 AAC 50.326(b), 12/1/04]

[40 C.F.R. 71.10(d)(1), 7/2/07]

Commented [Hilcorp-165]: Update to reflect the layout used by the Department in other Title V permits.

These conditions are replaced by new Condition 77, above.

Section 9. Compliance Requirements

General Compliance Requirements

~~74.82.~~ Compliance with permit terms and conditions is considered to be compliance with those requirements that are

~~74.182.1~~ included and specifically identified in the permit; or

~~74.282.2~~ determined in writing in the permit to be inapplicable.

[18 AAC 50.326(j)(3), ~~12/1/04; 18 AAC &~~ 50.345(a) & (b), ~~11/9/08~~]

~~75.83.~~ The Permittee must comply with each permit term and condition.

~~a.83.1~~ For applicable requirements with which the stationary source is in compliance, the Permittee shall continue to comply with such requirements.

~~b.83.2~~ Noncompliance with a permit term or condition constitutes a violation of AS 46.14.120(c), 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for

~~75.2a.~~ an enforcement action;

~~75.3b.~~ permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

~~75.4c.~~ denial of an operating permit renewal application.

[~~18 AAC 50.326(j)(3), 12/1/04; 18 AAC 50.345(a) & (c), 11/9/08~~]

[18 AAC 50.040(j), 50.326(j) & 50.345(a) & (c)]

[40 C.F.R. 71.6(c)(3) & 71.5(c)(8)(iii)(A)]

~~76.84.~~ It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.326(j)(3), ~~12/1/04; 18 AAC &~~ 50.345(a) & (d), ~~11/9/08~~]

~~77.85.~~ The Permittee shall allow the Department, or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator, to:

~~77.185.1~~ enter upon the premises where a source subject to the permit is located or where records required by the permit are kept;

~~77.285.2~~ have access to and copy any records required by the permit;

~~77.385.3~~ inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and

~~77.485.4~~ sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.326(j)(3), ~~12/1/04; 18 AAC &~~ 50.345(a) & (h), ~~11/9/08~~]

Commented [Hilcorp-166]: Update to reflect the language and layout used by the Department in other Title V permits.

New Condition 83.1 replaces TVP02 permit Condition 78.

Commented [Hilcorp-167]: Correct punctuation errors.

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Revision 1: November 1, 2016

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~~78. For applicable requirements with which the Tyonek Platform is in compliance, the Permittee will continue to comply with such requirements.~~

~~[18 AAC 50.040(j), 7/25/08; 18 AAC 50.326(j), 12/1/04]
[40 C.F.R. 71.6(c)(3) & 71.5(c)(8)(iii)(A), 7/2/07]~~

Compliance Schedule

86. For applicable requirements that will become effective during the permit term, the Permittee shall meet such requirements on a timely basis.

[18 AAC 50.040(j) & 50.326(j)]
[40 C.F.R. 71.6(c)(3) & 71.5(c)(8)(iii)(B)]

Commented [Hilcorp-168]: Move to become new Condition 83.1 to match the permit layout used by the Department in other Title V permits. See comment above.

Commented [Hilcorp-169]: Add this condition, which is found in other Title V permits.

Section 10. Permit As Shield from Inapplicable Requirements

In accordance with AS 46.14.290, and based on information supplied in the [stationary source permit application](#), this section of the permit contains the requirements determined by the Department not to be applicable to the [Tyonek Platform](#)~~Tyonek Platform~~.

79.87. Nothing in this permit shall alter or affect the following:

79.187.1 The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section; or

79.287.2 The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance.

[18 AAC 50.326(j), ~~12/1/04~~]
[40 C.F.R. 71.6(f)(3)(i) & (ii), ~~7/2/07~~]

80.88. [Table D](#)~~Table B~~ identifies the emissions units that are not subject to the specified requirements at the time of permit issuance. [The permit shields apply to the equipment as it is currently permitted. Any modification or reconstruction of the equipment will negate the permit shield. Equipment replacement may negate the permit shield depending on how that replacement affects emission standard applicability.](#) If any of the requirements listed in [Table D](#)~~Table B~~ becomes applicable during the permit term, the Permittee shall comply with such requirements on a timely basis, ~~including, but not limited to, providing appropriate notification to EPA, obtaining a construction permit and/or an operating permit revision as applicable.~~ [The Permittee shall also provide appropriate notification and apply for a construction permit and/or an operating permit modification and/or permit amendment, as necessary.](#)

[18 AAC 50.326(j), ~~12/1/04~~]
[40 C.F.R. 71.6(f)(1)(ii), ~~7/2/07~~]

Table DB – Permit Shields Granted

Non-Applicable Requirements	Reason for Non-Applicability
Storage Tanks w/ Capacity >10,000 gallons Diesel Storage (Tag nos. TK-112A, and TK-112B) Diesel Storage for the Spartan 151 Drill Rig (Tanks #10 and #12) Produced Water Storage (Tag nos. TK-101B, TK-102A, TK-102B, TK-102C, TK-102D, TK-109, and TK-110) Glycol Storage (Tag nos. TK-111A and TK-111B) Water Storage (Tag nos. TK-101A, TK-104B, TK-105A, and TK-105B)	
40 C.F.R. 60 Subpart K - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978	Vessels commenced construction prior to or after the effective dates of Subpart K (6/12/73 – 5/18/78).

Commented [Hilcorp-170]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-171]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-172]: Update Table B, which is proposed permit Table D, to include the permit shield requests made in the various B Series Forms and Form E4 included with this permit renewal application and reorganize the table as proposed with the intent of adding clarity.

Also,
* Remove permit shields for rules that clearly do not apply to oil and gas facilities. Such shields are unnecessary;
* Remove permit shields for rules that are not potentially applicable because there are no emissions units at the source that could potentially be affected by the rule;
* Reformat and make corrections to the 40 CFR 63 Subpart HH permit shield to clarify the shield;
* Enhance the table to show all rule titles.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 60 Subpart Ka - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	<u>All vessels except the Spartan 151 Drill Rig diesel storage vessels:</u> commenced construction prior to the effective dates of Subpart Ka (5/19/78 – 7/22/84). <u>Spartan 151 Drill Rig diesel storage vessels:</u> Each vessel storage capacity is below the Subpart Ka applicability threshold (40,000 gallons).
40 C.F.R. 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	Vessels commenced construction prior to the effective date of Subpart Kb (7/23/84).
Turbines (EU IDs 1 – 4)	
40 C.F.R. 60 Subpart A, General Provisions §§60.7(a)(1) & (a)(3) - Notification and Recordkeeping, ~~60.7(a)(1) & (a)(3)~~ – (initial only)	Requirements ~~were have been~~ met for initial ~~demonstration~~ notification.
40 C.F.R. 60 Subpart A, General Provisions §§60.7(a)(5) and (a)(7) - Notification and Recordkeeping, ~~60.7(a)(5) and (a)(7)~~	No continuous monitoring systems at the ~~facility~~ stationary source. Notifications apply to startup conditions only and would not be applicable to operation.
40 C.F.R. 60 Subpart A, General Provisions §60.8 - Performance Tests, ~~60.8~~ – (initial tests only)	Requirements ~~were have been~~ met for initial demonstration.
40 C.F.R. 60 Subpart GG, Standards of Performance for Stationary Gas Turbines §60.332(a)(1) - Standard for Nitrogen Oxides, ~~60.332(a)(1)~~	Standard applies to <i>electric utility stationary gas turbines</i> , as defined in subpart. There are ~~no~~ affected sources within the stationary source.
40 C.F.R. 60 Subpart GG §60.334(a), (b), (d) – Monitoring of Operations §60.335(b)(4) – Test Methods and Procedures	Applies only to affected turbines equipped with water injection to control emissions of NOx. These emissions units are not equipped with water injection to control emissions of NOx.
40 C.F.R. 60 Subpart GG §60.334(c), (f) – Monitoring of Operations	Applies only to affected turbines that commence construction after July 8, 2004. These emissions units commenced construction prior to this date.
40 C.F.R. 60 Subpart GG §60.334(g) – Monitoring of Operations	Applies only to affected turbines subject to the continuous monitoring requirements of 40 C.F.R. 60.334(a), (d), or (f).
40 C.F.R. 60 Subpart GG §60.334(h)(2) – Monitoring of Operations	Applies only to owners/operators who claim an allowance for fuel bound nitrogen to calculate the applicable NOx emission limit under §60.332. Hilcorp has not made such a claim for these units.
40 C.F.R. 60 Subpart GG, Standard for Sulfur Dioxide, ~~60.333(a)~~	Owner/Operator must comply with 60.333(a) or (b). ConocoPhillips has chosen to comply with 60.333(b).

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 60 Subpart GG, Monitoring of Operations, 60.334(a) – (g), and (h)(2)	60.334(a) and (b) apply only to turbines using water injection to control NOx (not required of turbines at Tyonek Platform). 60.334(e) – (g) are optional monitoring methods not used by ConocoPhillips. Nitrogen monitoring under 60.334(h)(2) is not required because ConocoPhillips has chosen not to claim an allowance for fuel bound nitrogen.
40 C.F.R. 60 Subpart KKKK – Standards of Performance for Stationary Combustion Turbines	Construction, modification, or reconstruction of each turbine commenced prior to the subpart applicability date of February 18, 2005.
40 C.F.R. 63 Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines	Stationary source is not a major source of HAP emissions.
<u>SI Internal Combustion Engines (EU IDs 8 and 9)</u>	
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	This subpart applies to compression ignition engines. These engines are spark ignition engines.
<u>CI Internal Combustion Engines (EU IDs 20, 21, 24, 25, 28, 33, and 34)</u>	
40 C.F.R. 60 Subpart IIII – Standards of Performance for Stationary eCompression Ignition Internal Combustion Engines	These emissions units were manufactured prior to the April 1, 2006 applicability date of this rule (see 40 C.F.R. 60.4200(a)(2)(i)) and have not been modified or reconstructed after July 11, 2005 (see 40 C.F.R. 60.4200(a)(3)). EU IDs 20, 21, 24, 25, 28, 33, and 34 do not meet the applicability criteria under 40 C.F.R. 60.4200(a). The shield applies only for as long as the specific emission unit is not reconstructed, modified or replaced.
<u>CI Internal Combustion Engines (EU IDs 24 and 25)</u>	
40 C.F.R. 60 Subpart IIII §60.4201(b) – (e) – Emission Standards for Non-Emergency Engines	These engines are rated less than 3000 hp and are not marine engines.
40 C.F.R. 60 Subpart IIII §60.4202 – Emission Standards for Emergency Engines	These are not emergency engines.
40 C.F.R. 60 Subpart IIII §60.4204(a) – Emission Standards for Non-Emergency Engines	These engines are not pre-2007 model year engines.
40 C.F.R. 60 Subpart IIII §60.4204(c) – Emission Standards for Non-Emergency Engines	These engines do not have a displacement greater than or equal to 30 liters per cylinder.
40 C.F.R. 60 Subpart IIII §60.4205 – Emission Standards for Emergency Engines	These are not emergency engines.

Commented [Hilcorp-173]: We ask that the Department delete the statement in the permit shield table for the NSPS Subpart IIII shield regarding the potential non-applicability of the shield with respect to future reconstruction, modification, or replacement of an emissions unit. This statement will be replaced with the proposed new language to be added to Condition 88 of the marked up permit.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R.60 Subpart IIII §60.4207 – Fuel Requirements for Engines Subject to Subpart IIII	The stationary source is located in an area that is not accessible by the Federal Aid Highway System and the engines are pre-2014 model year engines. [40 C.F.R. 60.4216(d)]
40 C.F.R. 60 Subpart IIII §60.4209(a) – Monitoring Requirements	These are not emergency engines.
40 C.F.R. 60 Subpart IIII §60.4211(b) – Compliance Requirements for Owners/Operators	These engines are not pre-2007 model year engines.
40 C.F.R. 60 Subpart IIII §60.4211(d) – Compliance Requirements for Owners/Operators	These engines do not have a displacement greater than or equal to 30 liters per cylinder.
40 C.F.R. 60 Subpart IIII §60.4211(f) – Compliance Requirements for Owners/Operators	These are not emergency engines.
40 C.F.R. 60.7, Subpart A – Notification and Recordkeeping 40 C.F.R. 60 Subpart IIII §60.4214(a) – Notification, Reporting, and Recordkeeping Requirements	These engines: 1) are not rated greater than 2,237 kW (3,000 hp); 2) do not have a displacement of greater than or equal to 10 liters per cylinder; and 3) are not pre-2007 model year engines. (See NSPS Subpart IIII, Table 8, and §60.4214(a) for applicability of 40 C.F.R. 60.7 to engines affected by Subpart IIII.)
40 C.F.R. 60 Subpart IIII §60.4214(b), (d) – Notification, Reporting, and Recordkeeping Requirements	These are not emergency engines.
40 C.F.R. 60.11, Subpart A – Compliance with Standards and Maintenance Requirements	40 C.F.R. 60.11 is specifically excluded from the list of Subpart A elements that apply to engines subject to NSPS Subpart IIII. [Subpart IIII, Table 8]
40 C.F.R. 60.13, Subpart A – Monitoring Requirements	§60.13 only applies to stationary CI ICE with a displacement greater than or equal to 30 liters per cylinder [Subpart IIII, Table 8]
SI Internal Combustion Engines (EU IDs 8 and 9)	
40 C.F.R. 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Construction, modification, or reconstruction of these engines commenced prior to the subpart applicability date of June 12, 2006.
CI Internal Combustion Engines (EU IDs 20, 21, 24, 25, 28, 33, and 34)	
40 C.F.R. 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	This subpart applies to spark ignition engines. These engines are compression ignition engines.

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Non-Applicable Requirements	Reason for Non-Applicability
<u>Existing Non-Emergency SI Internal Combustion Engines (EU IDs 8 and 9)</u>	
40 C.F.R. 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines 40 C.F.R. 63.6604 – Fuel Requirements	These engines are not compression ignition engines.
40 C.F.R. 63 Subpart ZZZZ §63.6615 - Subsequent Testing §63.6620 - Performance Tests and Procedures	These engines are subject to an equipment standard, not a numerical emission limitation under Subpart ZZZZ. The initial compliance demonstration and annual continuous compliance demonstrations require verification of “compliance demonstration levels” via an abbreviated stack test but such tests are not considered “performance tests” under Subpart ZZZZ.
40 C.F.R. 63 Subpart ZZZZ §63.6625(a) - Monitoring, Installation, Collection, Operation and Maintenance Requirements	No CEMS requirement for these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6625(e) - Monitoring, Installation, Collection, Operation and Maintenance Requirements	These engines are not the type of RICE listed under §63.6625(e)(1) – (10).
40 C.F.R. 63 Subpart ZZZZ §63.6625(f) – Monitoring, Installation, Collection, Operation and Maintenance Requirements §63.6640(f) – Continuous Compliance Demonstration §63.6650(h) – Reporting Requirements for Certain Emergency Engines	These are not emergency engines.
40 C.F.R. 63 Subpart ZZZZ §63.6645(a) - Notification Requirements 40 C.F.R. 63.8(e), (f)(4) & (f)(6), Subpart A – Monitoring Requirements 40 C.F.R. 63.9(b) – (e), (g) & (h), Subpart A – Notification Requirements	These engines are subject to an equipment standard, not a numerical emission limitation under Subpart ZZZZ. Per 40 C.F.R. 63.6645(a)(5), existing stationary RICE that are not subject to any numerical emission standards are not subject to the notification requirements of these sections.
40 C.F.R. 63 Subpart ZZZZ §6645(b) – (f) – Notification Requirements	The stationary source is not a major source of HAP emissions.
<u>Existing Non-Emergency CI Internal Combustion Engines (EU IDs 20, 21, 28, 33, and 34)</u>	
40 C.F.R. 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines §§63.6600, §63.6601, and §63.6602 - Emission Limitations, Operating Limitations, and other Requirements at HAP Major Sources	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ Tables 2a and 2c - Emission Limitations and Other Requirements at HAP Major Sources	There are no requirements in Tables 2a or 2c of Subpart ZZZZ that apply to these engines because they are existing CI RICE located at an area source of HAP emissions.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 63 Subpart ZZZZ Table 2b - Operating Limitations	EU IDs 20, 21 : The requirements of Table 2b of Subpart ZZZZ do not apply to these engines because there are no emission limitations (i.e., the CO emission limitations in Table 2d do not apply) for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the Federal Aid Highway System (FAHS). [40 C.F.R. 63.6603(b)(1)]. EU IDs 28, 33, 34 : There are no requirements in Table 2b of Subpart ZZZZ that apply to existing stationary CI RICE rated less than or equal to 500 bhp.
40 C.F.R. 63 Subpart ZZZZ Table 2d – CO Emission Limitations	EU IDs 20, 21 : Per §63.6603(b)(1), the CO emission limits in Table 2d do not apply to existing stationary non-emergency CI RICE >300 bhp located at area sources in areas of Alaska not accessible by the FAHS. EU IDs 28, 33, 34 : There are no CO emission limits in Table 2d that apply to engines rated less than or equal to 300 bhp.
40 C.F.R.63 Subpart ZZZZ §63.6604- Fuel Requirements	The requirement to comply with 40 C.F.R. 1090.305 does not apply to existing non-emergency engines located at area sources in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6604(d)]
40 C.F.R. 63 Subpart ZZZZ §63.6610 and §63.6611 – Testing and Initial Compliance Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6612 – Testing and Initial Compliance Requirements	EU IDs 20, 21 : There are no requirements in either Table 4 or Table 5 of Subpart ZZZZ that apply to these engines because there are no applicable CO emission limitations for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6603(b)(1)] EU IDs 28, 33, 34 : There are no requirements in either Table 4 or Table 5 of Subpart ZZZZ that apply to these engines because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6615 - Subsequent Testing §63.6620 - Performance Tests and Procedures Table 3 – Subsequent Performance Tests Table 4 – Requirements for Performance Tests	EU IDs 20, 21 : There are no performance testing requirements that apply to these engines because there are no CO emission limitations for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6603(b)(1)]. EU IDs 28, 33, 34 : There are no performance testing requirements that apply to these engines because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 63 Subpart ZZZZ §63.6625(a) & (b) – Monitoring, Installation, Collection, Operation and Maintenance Requirements	<u>EU IDs 20, 21:</u> These requirements do not apply to these engines because there are no CO emission limitations for existing stationary non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6603(b)(1)]. <u>EU IDs 28, 33, 34:</u> These requirements do not apply to these engines because there are no CO emission limits that apply to engines rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6625(f) – Monitoring, Installation, Collection, Operation and Maintenance Requirements	<u>EU IDs 20, 21, 28:</u> These are not emergency engines. <u>EU IDs 33, 34:</u> The Permittee has elected not to classify these as emergency engines under Subpart ZZZZ.
40 C.F.R. 63 Subpart ZZZZ §63.6625(g) – Monitoring, Installation, Collection, Operation and Maintenance Requirements	<u>EU IDs 20, 21:</u> This requirement does not apply to existing non-emergency CI RICE >300 bhp located at an area source in areas of Alaska not accessible by the FAHS. [40 C.F.R. 63.6625(g)] <u>EU IDs 28, 33, 34:</u> This requirement does not apply to CI RICE rated less than or equal to 300 bhp.
40 C.F.R. 63 Subpart ZZZZ §63.6630 – Initial Compliance Demonstration Table 5 – Initial Compliance with Emission Limitations, Operating Limitations, and Other Requirements	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6635 – Monitoring to Demonstrate Continuous Compliance	These requirements apply only to stationary RICE subject to emissions or operational limits. There are no emissions or operational limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6640(f) – Continuous Compliance Demonstration	<u>EU IDs 20, 21, 28:</u> These are not emergency engines. <u>EU IDs 33, 34:</u> The Permittee has elected not to classify these as emergency engines under Subpart ZZZZ.
40 C.F.R. 63 Subpart ZZZZ §63.6645(a) - Notification Requirements 40 C.F.R. 63.8(e), (f)(4) & (f)(6), Subpart A – Monitoring Requirements 40 C.F.R. 63.9(b)– (e), (g) & (h), Subpart A – Notification Requirements	Per 40 C.F.R. 63.6645(a)(5), existing stationary RICE that are not subject to any numerical emission standards are not subject to the notification requirements of these sections.
40 C.F.R. 63 Subpart ZZZZ §63.6645(b) – (f) – Notification Requirements	The stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart ZZZZ §63.6645(h) – Notification Requirements	There are no performance testing or other initial compliance demonstration requirements that apply to these engines because there are no emission or operating limits that apply.
40 C.F.R. 63 Subpart ZZZZ §63.6640(b) and §63.6650(a) – (e) – Reporting Requirements	Compliance status reporting requirements only apply to stationary RICE subject to numerical emissions or operating limits. There are no emissions or operating limits that apply to these engines.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 63 Subpart ZZZZ §63.6650(h) – Reporting Requirements for Certain Emergency Engines	EU IDs 20, 21, 28 : These are not emergency engines. EU IDs 33, 34 : These engines do not operate for the purpose specified in §63.6640(f)(4)(ii) .
40 C.F.R. 63 Subpart ZZZZ §63.6655(a), (b), & (d) - Recordkeeping Requirements	There are no emission or operating limits that apply to these engines.
40 C.F.R. 63 Subpart ZZZZ §63.6655(f) - Recordkeeping Requirements	These engines are not classified as emergency engines for purposes of Subpart ZZZZ. Therefore, they are not required to limit hours of operation per 40 C.F.R. 63.6640(f) .
40 C.F.R. Subpart ZZZZ §63.6645(g) – Notification Requirements 40 C.F.R. 63.7 Subpart A – Performance Testing Requirements	There are no performance testing requirements that apply to these engines because there are no emission limits that apply.
CI Internal Combustion Engines (EU IDs 24 and 25)	
40 C.F.R. 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	There are no requirements that apply to new engines located at an area source of HAP emissions, except for the requirement to comply with the applicable requirements of 40 C.F.R. 60, Subpart IIII . [40 C.F.R. 63.6590(c)(1)]
Heaters (EU IDs 10 and 12; Glycol Regenerator Reboilers (IEUs))	
40 C.F.R. 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial/ Commercial/ Institutional Boilers and Process Heaters	Stationary source is not a major source of HAP emissions.
40 C.F.R. 63 Subpart JJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources	These emissions units are not industrial, commercial, or institutional “boilers” as defined in 40 C.F.R. 63.11237 .
Flares (EU IDs 38 and 39)	
40 C.F.R. 60, Subpart A – General Provisions §60.18 – General Control Device and Work Practice Requirements 40 C.F.R. 63, Subpart A – General Provisions §63.11 – Control Device and Work Practice Requirements	The flares are not control devices used to comply with applicable subparts of 40 C.F.R. Parts 60, 61, or 63 .
Stationary Source Wide	
40 C.F.R. 60 Subparts B, C, Ca, Cb, F, G, H, I, J, M, N, Na, O, S, T, U, V, W, X, Y, Z, AA, AAa, BB, CC, EE, HH, KK, LL, MM, NN, PP, QQ, RR, SS, TT, UU, VV, WW, XX, BBB, DDD, FFF, GGG, HHH, III, JJ, LLL, NNN, OOO, PPP, QQQ, RRR, SSS, TTT, UUU, and VVV	Not an affected facility, operation or industry.

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Tyonek Platform
Revision 1: November 1, 2016

Issued: [March 31, 2009](#)<insert date>
Expires: [March 31, 2014](#)<insert date>

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 60 Subparts D, Da, Db, De, E, Ea, Eb, K, Ka, Kb, L, P, Q, R, DD, and AAA	No affected sources within the stationary source.
40 C.F.R. 60 Subparts KKK – Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants and; 40 C.F.R. 60 Subpart LLL – Standards of Performance for SO₂ Emissions from Onshore Natural Gas Processing	Tyonek Platform is an offshore stationary source.
40 C.F.R. 60 Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution 40 C.F.R. 60 Subpart OOOOa - Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	These subparts apply only to onshore oil and gas operations. (See 40 C.F.R. 60.5365 and §60.5365a.) This stationary source is located beyond the low tide line in territorial seas. Therefore, the source does not meet the definition of “onshore” as provided in §60.5430 and §60.5430a.
40 C.F.R. 61 Subparts B, C, D, E, F, H, I, K, L, N, O, P, Q, R, T, W, Y, BB, and FF	Not an affected facility, operation, or industry.
40 C.F.R. 61.152 Subpart M	The stationary source does not use air cleaning equipment.
40 C.F.R. 61 Subpart J – National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene	The stationary source does not contain any equipment in benzene service.
40 C.F.R. 61 Subpart M	Per Federal Regulation: 40 C.F.R. 61.140, a facility must be a source specified in 61.142 through 61.151, 61.154, or 61.155 to be subject to Subpart M.
40 C.F.R. 61 Subpart M – National Emission Standard for Asbestos; §61.152 - Standard for Air-Cleaning	Stationary source does not use air cleaning equipment.
Activities subject to 40 C.F.R. 61 Subpart M – Standard for Demolition and Renovation (§61.145)	
40 C.F.R. 61, Subpart A – General Provisions §61.05(a) - Prohibited Activities §61.07 - Application for Approval of Construction or Modification §61.09 - Notification of Startup	Owners or operators of demolition and renovation operations are exempt from the requirements of §§61.05(a), 61.07, and 61.09. [40 C.F.R. 61.145(a)(5)]
§61.10 - Source Reporting and Waiver Request	Demolition and renovation operations exempt from §61.10(a). [40 C.F.R. 61.153(b)]
§61.13 - Emission Tests §61.14 - Monitoring Requirements	Emission tests or monitoring is not required under the standards for demolition and renovation. [40 C.F.R. 61.145]
40 C.F.R. 61 Subpart M – National Emission Standard for Asbestos §61.153 - Standard for Reporting	No reporting requirements apply for emissions units subject to 40 C.F.R. 61.145 (demolition and renovation) [40 C.F.R. 61.153(a)].

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Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 61 Subpart A	Per Federal Regulation: 40 C.F.R. 61.01(e), a facility must be subject to a specific subpart of Federal Regulation: 40 C.F.R. 61 to be subject to Subpart A.
Stationary Source Wide	
40 C.F.R. 61 Subpart V - National Emission Standard for Equipment Leaks (Fugitive Emission Sources)	Stationary source does not operate equipment in volatile hazardous air pollutant (VHAP) service (greater than or equal to 10 percent VHAP by weight). [40 C.F.R. 61.240 and §61.241] Per Federal Regulation: 40 C.F.R. 61.240(b), a facility must be subject to a specific subpart of Federal Regulation: 40 C.F.R. 61 to be subject to Subpart V.
40 C.F.R. 63 Subpart T – National Emission Standards for Halogenated Solvent Cleaning	Stationary source does not operate halogenated solvent cleaning machines.
40 C.F.R. 63 Subparts F, G, M, O, R, T, W, X, Y, CC and EE	Not an affected facility, operation or industry.
40 C.F.R. 63 Subparts L, N, Q, OO, PP, RR and VV	No affected sources within the stationary source.
40 C.F.R. 63 Subpart A	Per Federal Regulation: 40 C.F.R. 63.1(a)(4), a facility must be subject to a specific subpart of Federal Regulation: 40 C.F.R. 63 to be subject to Subpart A.
40 C.F.R. 63 Subpart H	Per Federal Regulation: 40 C.F.R. 63.160(a), a facility must be subject to specific subpart of Federal Regulation: 40 C.F.R. 63 to be subject to Subpart H.

Commented [Hilcorp-174]: Hilcorp withdraws the request for the permit shield associated with 40 CFR 61, Subpart A.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 63 Subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities; ~~§ 63.762, § 63.764(c) & (d),~~ § 63.765, § 63.766, § 63.769, § 63.771, § 63.772 (all except § 63.772(b)(2)), § 63.773, § 63.774 (all except § 63.774(d)(1)(ii)), and § 63.775	The Tyonek Platform is not a major source of hazardous air pollutants as defined under any subpart of 40 C.F.R. 63. Further, the Tyonek Platform is not subject to the Subpart HH area source control requirements or ongoing monitoring, recordkeeping or reporting because the facility is not located within an urban area as defined by Subpart HH and per-dehydrator actual annual average benzene emissions are less than <u>0.9 Mg/yr (i.e., 1 TPY)</u>, excluding controls. • ~~Section III.C of the rule preamble indicates the non-applicability of § 63.762, § 63.764(c) only applies to major sources.~~ • The non-applicability of <u>§ 63.764(d)</u> is indicated under <u>§ 63.764(e)(1)</u>. • The non-applicability of <u>§ 63.765</u> is indicated under <u>§ 63.765(a) because no control of emissions is required for the dehydration units.</u> • <u>§ 63.766 and § 63.769 only apply to major sources.</u> • <u>§ 63.771 and § 63.773 are not applicable because no control of emissions is required by the subpart.</u> • The non-applicability of <u>§ 63.774</u> is indicated under <u>§ 63.774(b) and (d)(1)</u>. • <u>§ 63.775(b) only applies to major sources.</u> • The non-applicability of <u>§ 63.775(c) and (d) are</u> indicated under <u>§ 63.775(c)(8)</u>. • <u>§ 63.775(d) applies only to major sources as indicated under § 63.775(b)(4).</u> • <u>§ 63.775(e) applies only to major sources or area sources within urban areas as defined under Subpart HH. See § 63.775(e) and (e)(3).</u>
40 C.F.R. 63 Subpart HHH - National Emission Standards for Hazardous Air Pollutants for Natural Gas Transmission and Storage Facilities	The Tyonek Platform operates prior to the point of custody transfer and is not a major source of ~~hazardous air pollutants~~ HAP emissions as defined in ~~subpart~~ Subpart HHH.
40 C.F.R. 63 Subpart EEEE - National Emission Standards for Organic Liquids Distribution (Non-Gasoline)	Stationary source is not a major source of HAP emissions.
40 C.F.R. 64 - Compliance Assurance Monitoring	EU IDs 8, 9: Rule applies to emissions units that use an add-on control device to meet an emission limit or standard and that have pre-control emissions greater than 100 tons/yr for the pollutant for which the control device is operated. These units do not have pre-control device NOx emissions greater than 100 tons/yr. All other EUs: Pollutant-specific emissions unit control devices are not used by these units to achieve compliance with any emission limitation or standard. The Tyonek Platform does not use a control device to achieve compliance with any emission limitation or standard.

Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 68 - Accidental Release Prevention Requirements: Risk Management Programs [§112(r)]	The Tyonek Platform, a crude petroleum and natural gas ~~production facility~~ extraction facility , (NAICS code ~~211120211111~~), does not process or store regulated flammable or toxic substances in excess of threshold quantities. "Naturally occurring hydrocarbon mixtures" (crude oil, condensate, natural gas and produced water) prior to entry into a petroleum refining process unit (NAICS code 324110) or a natural gas processing plant (NAICS code ~~211130211112~~) are exempt from the threshold determination. ~~[40 C.F.R. 68.115] No other mixtures containing regulated flammable substances stored at the facility meet the criteria for an NFPA rating of 4 for flammability. Therefore, all materials stored at the facility are exempt from the threshold determination.~~
40 C.F.R. ~~8282.1~~ , Subpart A, Production and Consumption Controls	~~The Tyonek Platform~~ Stationary source does not produce, transform, destroy, import or export Class I, or Group I or II substances or products.
40 C.F.R. ~~8282.30~~ , Subpart B, Servicing of Motor Vehicle Air Conditioners	Motor vehicles air conditioners are not serviced on site.
~~40 C.F.R. 82.60, Subpart C, Ban on Nonessential Products Containing Class I Substances and Ban on Nonessential Products Containing or Manufactured with Class II Substances~~ 40 C.F.R. 82.100, Subpart E, The Labeling of Products Using Ozone-Depleting Substances ~~40 C.F.R. 82-Subpart C and E~~	~~The Tyonek Platform~~ Stationary source does not manufacture or distribute Class I or II products or substances.
40 C.F.R. ~~8282.80~~ , Subpart D, Federal Procurement	This subpart ~~does not apply to the facility. It~~ applies only to Federal ~~Departments~~ departments , agencies, and instrumentalities.
40 C.F.R. 82-Subpart F, Appendix C	~~The Tyonek Platform is not a third-party entity that certifies recovery equipment.~~
40 C.F.R. 82-Subpart F, Appendix D	~~The Tyonek Platform does not have a technician certification program.~~
40 C.F.R. 82-Subpart G	~~EPA has determined that the Significant New Alternatives Policy (SNAP) rule need not be included in the Title V permit.~~
40 C.F.R. 82.158, Subpart F, Recycling and Emissions Reduction	~~The Tyonek Platform~~ Stationary source does not manufacture or import recovery and recycling equipment.
40 C.F.R. 82.160, Subpart F, Approved Equipment Testing Organizations	~~The Tyonek Platform~~ Stationary source does not contract equipment testing organizations to certify recovery and recycling equipment.
40 C.F.R. 82.164, Subpart F, Reclaimer Certification	~~The Tyonek Platform~~ Stationary source does not sell reclaimed refrigerants.

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Non-Applicable Requirements	Reason for Non-Applicability
40 C.F.R. 82 Subpart F, Appendix C, Method for Testing Recovery Devices for Use with Small Appliances	Stationary source is not a third-party entity that certifies recovery equipment.
40 C.F.R. 82 Subpart F, Appendix D, Standards for Becoming a Certifying Program for Technicians	Stationary source does not have a technician certification program.
40 C.F.R. 82.174(a), Subpart G, Significant New Alternatives Policy Program: Prohibitions	Stationary source does not manufacture substitute chemicals or products for ozone-depleting compounds.
40 C.F.R. 82.270(a), Subpart H, Halon Emissions	Stationary source does not manufacture halon.
18 AAC 50.050, Incinerator Emission Standards	No affected sources within the stationary source.
18 AAC 50.055(a)(2), Fuel Burning equipment standards, opacity emission limit of 30%, 3-minute average	No affected sources within the stationary source.
18 AAC 50.055(a)(3), Fuel Burning equipment standards, opacity emission limit of 55% for a urea prilling tower	The Tyonek Platform does not have a urea prilling tower.
18 AAC 50.055(a)(4), (5) and (8), Fuel burning equipment standards, opacity emission limit of 20%, 6-minute average	No affected sources within the stationary source.
18 AAC 50.055(a)(6) and (7), Fuel burning equipment standards, opacity emission limit of 10%, 6-minute average	No affected sources within the stationary source.
18 AAC 50.055(a)(9), Fuel Burning equipment standards, opacity emission limit of 20% for more than three minutes in any one hour for a coal-burning boiler.	The Tyonek Platform does not have a coal-fired boiler.
18 AAC 50.055(b)(2) and (3), Fuel burning equipment standards, PM emission limit of 0.1 grains per cubic foot	No affected sources within the stationary source.
18 AAC 50.055(b)(4), Fuel burning equipment standards, PM emission limit of 0.15 grains per cubic foot	No affected sources within the stationary source.
18 AAC 50.055(d) and (e), Fuel burning equipment standards	No affected sources within the stationary source.
18 AAC 50.055(b)(5) and (6), Fuel burning equipment standards	No affected sources within the stationary source.
18 AAC 50.060, Pulp Mills	Not an affected facility, operation or industry.
18 AAC 50.065, Open Burning	Open burning is not conducted at the stationary source.
18 AAC 50.070 Marine Vessels, vessel visible emission standards	Stationary source is more than 3 miles from shore.
18 AAC 50.075, Wood-fired heating device emission standards	No affected sources within the stationary source.

Commented [Hilcorp-175]: Remove open burning permit shield since there is a permit condition for open burning in the permit even though the rationale provided with the permit shield is correct (no open burning occurs at Tyonek Platform).

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Non-Applicable Requirements	Reason for Non-Applicability
18 AAC 50.085, Volatile liquid storage tank emission standards	Regulations only apply to tanks within the Port of Anchorage.
18 AAC 50.090 Volatile liquid loading racks and delivery emission standards	Regulations only apply to facilities within the Port of Anchorage.
All Nonroad Engines	
18 AAC 50.055(a)(1) – Fuel Burning Equipment Emission Standards: Visible Emissions 18 AAC 50.055(b)(1) – Fuel Burning Equipment Emission Standards: Particulate Matter 18 AAC 50.055(c) – Fuel Burning Equipment Emission Standards: Sulfur Compound Emissions	Nonroad (mobile) internal combustion engines are not included in the definition of fuel-burning equipment (18 AAC 50.990).
40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines	These rules do not apply to nonroad engines.

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Section 11. Stationary Source Emissions

Table C—NOx Emissions Data

Commented [Hilcorp-176]: Delete Section 11 (Table C). This table is no longer referenced by the permit as it is not included in Minor Permit AQ0091MSS03, Revision 1, so there is no attachment from the MSS03 permit to be carried forward.

A	B	C	D	E	F	G	H
EU ID	EU Description	NOx Emission Factor	Input / Output Parameter	Maximum NOx Emission Rate	Fuel Consumption	Hours of Operation	NOx Emissions
1	Solar Centaur T-4700 Turbine #1	0.426 lb/MMBtu	47,660 MBtu/hr	20.3 lb/hr			TPY
2	Solar Centaur T-4700 Turbine #2	0.426 lb/MMBtu	47,660 MBtu/hr	20.3 lb/hr			TPY
8	Waukesha L-7042G Engine #1	2 g/hp-hr	810 hp	3.57 lb/hr			TPY
9	Waukesha L-7042G Engine #4	2 g/hp-hr	810 hp	3.57 lb/hr			TPY
10	Glycol Heater #1	100 lb/MMsef	11,148 MBtu/hr	1.11 lb/hr			TPY
11	Glycol Heater #2	100 lb/MMsef	11,148 MBtu/hr	1.11 lb/hr			TPY
12	Glycol Heater #3	100 lb/MMsef	11,148 MBtu/hr	1.11 lb/hr			TPY
13	Glycol Regenerator #1	94 lb/MMsef	246 MBtu/hr	0.023 lb/hr			TPY
14	Glycol Regenerator #2	94 lb/MMsef	246 MBtu/hr	0.023 lb/hr			TPY
15	Glycol Regenerator #3	94 lb/MMsef	246 MBtu/hr	0.023 lb/hr			TPY
20	Caterpillar D-398 Engine #1	0.45 lb/gal	795 hp	18.0 lb/hr			TPY
21	Caterpillar D-398 Engine #2	0.45 lb/gal	795 hp	18.0 lb/hr			TPY
24	Manitowoc Crane	0.62 lb/gal	230 hp	7.9 lb/hr			TPY
25	Unit Crane	0.62 lb/gal	230 hp	7.9 lb/hr			TPY
28	John Deere 4039 Engine	0.58 lb/gal	80 hp	2.5 lb/hr			TPY
33	Caterpillar 3306 Firewater Engine #1	0.58 lb/gal	231 hp	6.2 lb/hr			TPY
34	Caterpillar 3306 Firewater Engine #2	0.58 lb/gal	231 hp	6.2 lb/hr			TPY
37	HP/LP Flare Pilot	0.068 lb/MMBtu	125 MBtu/hr	0.0085 lb/hr			TPY
38	HP Safety Flare	0.068 lb/MMBtu	583,333 MBtu/hr	39.7 lb/hr			TPY
39	LP Safety Flare	0.068 lb/MMBtu	58,300 MBtu/hr	4.0 lb/hr			TPY
							TPY

Notes:

- For EU IDs 8, 9, 13-15 (as identified in Permit No. AQ0091TVP01), and 37, calculate emissions (H) based on the hours of operation (G) and the NOx emission factor (C).
- For EU IDs 20, 21, 24, 25, 28, 33 and 34, calculate emissions (H) based on the NOx emission factor (C) and fuel consumption (F).
- For EU IDs 1, 2, 10-12, 38, and 39, calculate emissions (H) based on the NOx emission factor (C), fuel consumption (F), and heating value of the fuel (Note 4), or as indicated in Note 1.
- Use a heating value of 1,007 Btu/sef unless an alternative has been measured for Tyonek natural gas and provided to the Department in the operating report.
- Use the listed NOx emission factors, Department-approved site-specific NOx emission factors from results of source tests, or NOx emission limits determined by continuous emissions monitoring systems if required by the permit.

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6. The emissions inventory accounts for the Phillips Tyonek NCIU 1999 Project source inventory and does not account for emissions from EU IDs 3 and 4.

[Minor Permit No. AQ0091MSS01 Rev. 1, 11/12/08]

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~~Section 12.~~Section 11. **Visible Emissions Forms**

Commented [Hilcorp-177]: Replace these forms with the current version ADEC is using for recently issued Title V permits.

Visible Emissions Field Data Sheet

Certified Observer: _____

Company &
Stationary Source: _____

Location: _____

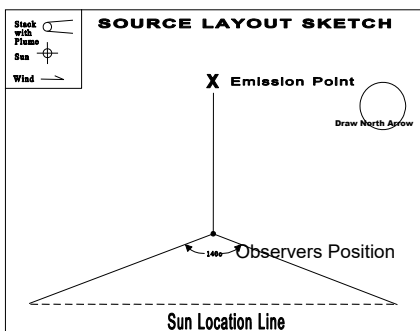
Test No.: _____ Date: _____

Emissions Unit: _____

Production Rate/
Operating Rate: _____

Unit Operating Hours: _____

Hours of Observation: _____



Clock Time	Initial				Final
Observer Location:					
Distance to Discharge					
Direction from Discharge					
Height of Observer Point					
Background Description					
Weather Conditions:					
Wind Direction					
Wind Speed					
Ambient Temperature					
Relative Humidity					
Sky Conditions (clear, overcast, % clouds, etc.)					
Plume Description:					
Color					
Distance Visible					
Water Droplet Plume? (Attached or detached?)					
Other Information					

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Test Number	Clock Time

[illegible]

Observer Signature and Date	Certified By and Date

Duration of Observation Period (minutes): _____

Number of Observations _____

Number of Observations exceeding 20% _____

In compliance with six-minute opacity limit? (Yes or No) _____

Duration Required by Permit (minutes) _____

Highest Six -Minute Average Opacity (%) _____

Set Number	Time Start—End	Opacity	
		Sum	Average

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~~Section 13.~~ **Section 12. ADEC Notification Form**³⁵

Commented [Hilcorp-178]: Replace this form with the current version ADEC is using for recently issued Title V permits.

Stationary Source Name _____

Air Quality Permit Number _____

Company Name _____

When did you discover the Excess Emissions/Permit Deviation?

Date: ____ / ____ / ____ Time: ____ : ____

When did the event/deviation occur?

Begin Date: ____ / ____ / ____ Time: ____ : ____ (please use 24-hr clock)

End Date: ____ / ____ / ____ Time: ____ : ____ (please use 24-hr clock)

What was the duration of the event/deviation? ____ : ____ (hrs:min) or ____ days
(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for Notification: (please check only 1 box and go to the corresponding section)

☐ Excess Emissions - Complete Section 1 and Certify.

☐ Deviation from Permit Condition - Complete Section 2 and Certify

☐ Deviations from COBC, CO, or Settlement Agreement - Complete Section 2 and Certify

Section 1. Excess Emissions

(a) Was the Exceedance: ☐ Intermittent ☐ Continuous

(b) Cause of Event (Check one that applies):

☐ Start Up /Shut Down

☐ Natural Cause (weather/earthquake/flood)

☐ Control Equipment Failure

☐ Scheduled Maintenance/Equipment Adjustment

☐ Bad fuel/coal/gas

☐ Upset Condition

☐ Other _____

(c) Description:

Describe briefly, what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) Emissions Units Involved:

Identify the emissions unit involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

EU ID	EU Name	Permit Condition Exceeded/Limit/Potential Exceedance

³⁵ Revised as of August 24, 2006.

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(e) Type of Incident (please check only one):

- ☐ Opacity _____ % ☐ Venting _____ (gas/scf) ☐ Control Equipment Down
☐ Fugitive Emissions ☐ Emission Limit Exceeded ☐ Flaring
☐ Marine Vessel Opacity ☐ Other: _____

(f) Unavoidable Emissions:

Do you intend to assert that these excess emissions were unavoidable? ☐ Yes ☐ No

Do you intend to assert the affirmative defense of 18 AAC 50.235? ☐ Yes ☐ No

Certify Report (go to end of form)

Section 2 Permit Deviations

(a) Permit Deviation Type (check one only box, corresponding with the section in the permit):

- ☐ Emission Unit Specific
☐ Failure to monitor/report
☐ General Source Test/Monitoring Requirements
☐ Recordkeeping/Reporting/Compliance Certification
☐ Standard Conditions Not Included in Permit
☐ Generally Applicable Requirements
☐ Reporting/Monitoring for Diesel Engines
☐ Insignificant Emission Unit
☐ Record Keeping Failure
☐ Stationary Source Wide
☐ Other Section _____ (title of section and section number of your permit).

EU	EU Name	Permit Condition / Potential Deviation

(b) Emission Unit Involved:

Identify the emissions unit involved in the event, using the same identification number and name as in the permit. List the corresponding permit conditions and the deviation.

(c) Description of Potential Deviation:

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Describe briefly what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) Corrective Actions:

Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Title: _____ Date: _____

Signature: _____ Phone Number: _____

NOTE: *This document must be certified in accordance with 18 AAC 50.345(j)*

To Submit this Report:

Fax to: 907-451-2187;

Email to: DEC.AQ.Airreports@alaska.gov - if emailed, the report must be certified within the Operating Report required for the same reporting period per ~~condition~~[Condition 7365](#);

Mail to: ADEC, Air Permits Program, 610 University Avenue, Fairbanks, AK 99709-3643;

Phone Notification: 907-451-5173 - phone notifications require a written follow-up report within the deadline listed in ~~condition~~[Condition 7264](#); OR

Online Submission: <https://myalaska.state.ak.us/deca/air/airtoolsweb/> - if submitted online, the report must be certified within the Operating Report required for the same reporting period per ~~condition~~[Condition 7365](#).

Alaska Department of Environmental Conservation

Air Permits Program

Commented [Hilcorp-179]: Update the Statement of Basis cover page as appropriate.

Hilcorp Alaska, LLC

~~(Previously owned by ConocoPhillips Alaska, Inc.)~~

Tyonek Platform

STATEMENT OF BASIS

of the terms and conditions for

Permit No. AQ0091TVP03~~AQ0091TVP02~~

Reviewed By: <Insert Name>~~Jim Plosay~~

ADEC AQ/APP, Juneau

Prepared by <Insert Name>~~Jeanette Brena~~

Entrix Corp.

<Insert Date>~~March 31, 2009~~

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INTRODUCTION

This document sets forth the statement of basis for the terms and conditions of Operating Permit No. [AQ0091TVP03AQ0091TVP02](#).

STATIONARY SOURCE IDENTIFICATION

Section 1 of Operating Permit No. [AQ0091TVP03AQ0091TVP02](#) contains information on the stationary source, as provided in the Title V permit application.

The stationary source (i.e., the [Tyonek Platform](#)) is owned and operated by [Hilcorp Alaska, LLC](#). It was purchased from ConocoPhillips Alaska, Inc., [the previous Permittee for this stationary source](#), on [September 16, 2016](#). [Revision 1 to Operating Permit no. AQ0091TVP02 was issued on November 1, 2016, with Hilcorp Alaska, LLC as the new Permittee.](#)

Commented [Hilcorp-180]: Edit the second paragraph to provide additional clarifying details regarding the transfer of ownership from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC and subsequent revision of the TVP02 operating permit.

The SIC code for this stationary source is 1311 -- Crude Petroleum and Natural Gas. [The NAICS code for the stationary source is 211120 – Crude Petroleum Extraction.](#)

Commented [Hilcorp-181]: Insert language describing the applicable NAICS code for the stationary source.

The stationary source is an offshore oil and gas production platform that produces, [treats, and compresses](#) natural gas and [transports-transfers #the gas to the Harvest pipeline for sale ConocoPhillips Kenai Liquefied Natural Gas Plant in Nikiski, Alaska.](#)

Commented [Hilcorp-182]: Update this paragraph to document the current basic processes that occur at the stationary source.

EMISSIONS UNIT INVENTORY AND DESCRIPTION

Under 18 AAC 50.326(a), the Department requires operating permit applications to include identification of all emissions-related information, as described under 40 C.F.R. 71.5(c)(3).

The emissions units at the [Tyonek Platform](#) that have specific monitoring, recordkeeping, and reporting requirements are listed in Table A of Operating Permit No. [AQ0091TVP03AQ0091TVP02](#), including four natural gas-fired turbines, two natural gas-fired engines, [three-two](#) natural gas-fired heaters, two gas flares (each of which are equipped with a pilot), seven diesel-fired engines, [and one set of gas flare pilots, and three glycol regenerator vents. In addition, a drill rig equipment \(Spartan 151 Drill Rig\) inventory, consisting of nonroad engines and fuel tanks as shown in Table B of Operating Permit No. AQ0091TVP03, is authorized to operate at the stationary source intermittently, subject to terms and conditions of Minor Permit No. AQ0091MSS04.](#)

Commented [Hilcorp-183]: Update the emissions unit inventory description to account for shutdown of EU ID 11 (one of the natural gas-fired heaters), add a reference to the three glycol regenerator vents, which are part of the significant emissions unit inventory, and include a discussion and reference to permit Table B to address the Spartan Drill Rig emissions units that are authorized under permit AQ0091MSS04 and carried forward to the TVP03 permit.

Table A [and Table B](#) of Operating Permit No. [AQ0091TVP03AQ0091TVP02](#) also contains specific information on each of the emissions units that are regulated by this permit [and as](#) provided in the application. [The se tables is are](#) provided for informational and identification purposes only. Specifically, the emissions unit rating/size provided in these tables [is does not intended to create an enforceable limit.](#)

Commented [Hilcorp-184]: Update the final paragraph of this section of the Statement of Basis to include a reference to permit Table B (the Spartan 151 Drill Rig EU inventory table) and to reflect the language used by the Department in other Title V permits.

EMISSIONS

A summary of the potential to emit (PTE) [and assessable PTE is shown in Table ETable D](#) below.

Commented [Hilcorp-185]: Correct the reference typographical error in Footnote 1 and update the referenced effective date of the current Alaska statutes.

¹ Potential to Emit or PTE means the maximum capacity of a stationary source to emit a pollutant under its physical or operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air

Table ED – Emissions Summary, in Tons Per Year (TPY)^{(a),(c)}

Pollutant	NOx	CO	PM-10	SO ₂	VOC	CO ₂ e ^{(c),(d)}	HAPs ^(b)	Total (excluding CO ₂ e and HAPs)
PTE	294368	268237	2015	4456	6929	161,222	654.4	695705
Assessable PTE	294368	268237	2015	4456	6929	0	0	695705

Commented [Hilcorp-186]: Update Table D (now Table E) to match the emissions information provided in this permit renewal application.

Also, add CO₂e column and add text to clarify the “total” column as done in other Title V permits.

Notes:

- (a) Non-road engine emissions are not included since emissions from nonroad engines are not used when determining the classification (major or minor) of a stationary source under AS 46.14.130 and are not included for fees.
- (b) The PTE of each individual HAP is less than 10 tons per year. HAP emissions are almost all VOCs, therefore, to avoid double counting HAP emissions are not included in the “Total” column.
- (c) Greenhouse gas (GHG) means the air pollutant defined in 40 C.F.R. 86.1818-12(a) as the aggregate group of six greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The stationary source emits or has the potential to emit only CO₂, N₂O and CH₄.
- (d) CO₂e or carbon dioxide equivalent emissions are defined as the sum of the mass emissions of each individual GHG adjusted for its global warming potential (GWP). Total GHG CO₂e calculations were submitted by the Permittee with the permit renewal application.
- (e) Emissions are based on calculations submitted by the Permittee with the permit renewal application.

Commented [Hilcorp-187]: Add new language used in other Title V permits.

The assessable PTE listed under ~~condition~~ Condition 49.137.1 is the sum of the emissions of each individual regulated air pollutant ~~other than CO₂e for which the stationary source has the potential to emit quantities greater than 10 tons per year (TPY).~~ The emissions listed in the table are estimates to be used for informational purposes only. The listing of the emissions does not create an enforceable limit to the stationary source.

Commented [Hilcorp-188]: Update to reflect the language used by the Department in other Title V permits and to remove the caveat regarding assessable emissions applying to pollutants with emissions greater than 10 tpy. This assessable emissions floor was removed in a recent change to the air regulations in 18 AAC 50.

~~ConocoPhillips estimated Potential criteria pollutant emissions were estimated by the Permittee in the permit renewal application using BACT emission limits, ORL emission and fuel consumption limits, vendor data, source tests data, AP-42 emission factors, applicable NSPS and NESHAP limits, and mass balances as used in the processing of Construction Permit No. 091CP04. The PM emissions estimates from AP-42 were updated and used in the processing of Minor Permit No. AQ0091MSS01.~~

Commented [Hilcorp-189]: Update to clarify this language, add relevant emission calculation procedures used in our application, and to remove outdated information.

pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source, as defined in AS 46.14.990(223), effective 7/25/08/1/10.

Potential Greenhouse Gas (GHG or CO₂e) emissions, provided by the Permittee with the permit renewal application, were estimated based on emission factors found in 40 C.F.R. 98, Subpart C, Tables C-1 and C-2, and for flares and flare pilots, emission factors found in the Bureau of Ocean Energy Management's (BOEM) web-based emissions reporting tool – the Outer Continental Shelf Air Quality System (OCS AQS).

HAP emissions were estimated by the Permittee in the permit renewal application using GRI-HAPCalc Version 3.01 software, AP-42 emission factors, and Ventura County Air Pollution Control District (VCAPCD) emission factors for combustion units. The gas produced at the stationary source is biogenic gas comprised almost entirely of methane and no measurable quantities of organic HAP, so VOC and HAP emissions from the flares, flare pilots, TEG reboiler vents and the produced water tanks are zero or negligible. Hazardous air pollutants (HAPs) were estimated using AP-42 emission factors as provided by ConocoPhillips on June 18, 2007. HAP emissions are a subset of VOC emissions, so they are not included in the total PTE or total assessable PTE. The stationary source is not a major source of HAPs.

Commented [Hilcorp-190]: Add applicable new language to document the methods used to estimate GHG emissions and an update on how HAP emissions were calculated.

Commented [Hilcorp-191]: We propose moving this language to become part of new Note (b) to original Statement of Basis Table D (now shown as Table E in the markup of the permit Statement of Basis).

Commented [Hilcorp-192]: Correct the reference typographical error in Footnote 2.

BASIS FOR REQUIRING AN OPERATING PERMIT

In accordance with AS 46.14.130(b), an owner or operator of a Title V source² must obtain a Title V permit consistent with 40 C.F.R. Part 71, as adopted by reference in 18 AAC 50.040.

Except for stationary sources exempted or deferred by AS 46.14.120(e) or (f), AS 46.14.130(b) lists three categories of sources that require an operating permit:

- A major source;
- A stationary source subject to federal/Federal New Source Performance Standards under Section 111 of the Clean Air Act or a National Emission Standards for Hazardous Air Pollutants under Section 112 of the Clean Air Act; and
- Another stationary source designated by the federal/Federal administrator/Administrator by regulation.

This stationary source requires an operating permit because it is classified under 18 AAC 50.326(a) and 40 C.F.R. 71.3(a) as:

This stationary source is further classified under 18 AAC 50.326(a) and 40 C.F.R. 71.3(a) as

- A major stationary source of air pollutants as defined in Section 302 of the Clean Air Act that directly emits, or has the potential to emit, 100 TPY or more of any air pollutant;
- Contains a source, including an area source, subject to a standard, limitation or other requirement under Section 111 of the Act (New Source Performance Standards, NSPS) not exempted or deferred under AS 46.14.120(e) or (f); and
- Contains a source, including an area source, subject to a standard or other requirement under Section 112 of the Act (National Emission Standards for Hazardous Air Pollutants, NESHAPs) not exempted or deferred under AS 46.14.130(e) or (f).

Commented [Hilcorp-193]: Update to reflect the language used by the Department in other Title V permits.

² Title V source means a stationary source classified as needing a permit under AS 46.14.130(b) [ref. 18 AAC 50.990(111)].

CURRENT AIR QUALITY PERMITS³

Previous Air Quality Permit to Operate

The most recent permit-to-operate issued for this stationary source is Permit to Operate No. 9623-AA007. This permit-to-operate included all construction authorizations issued through April 14, 1997. Under this permit, the Tyonek Platform became Prevention of Significant Deterioration (PSD) major for NO_x and CO emissions by removing owner requested limits established by Permit to Operate No. 9223-AA005. The Department established emission limits to preclude pre-construction review under the PSD program for modifications to the platform. The Department required that all the turbine emissions units burn only formation gas. The Department also required that ConocoPhillips provide a PSD application and show compliance with emissions and offsets to the 1980 levels, at the start of the PSD program. All currently applicable stationary source-specific requirements established in this previous permit 9623-AA007 are included in the Title V operating permit as described in Table G-Table E.

Title I (Construction and Minor) Permits

Construction Permit No. 9923-AC011 was issued to the Permittee on September 8, 1999. This permit authorized the replacement of two existing turbines with refurbished units (EU IDs 1 and 2), and established owner requested limits enabling the Tyonek Platform to avoid classification as PSD major. This permitting action was in response to Condition 29 of Permit to Operate No. 9623-AA007. It revised the terms and conditions of Permit to Operate No. 9623-AA007 to bring the stationary source below PSD levels for NO_x and CO, and emission limits were established for existing equipment to preclude the Department imposing a retroactive PSD review.

Construction Permit No. 0023-AC007 was issued to the Permittee on June 6, 2000 and rescinded the previous construction permit. This permit authorized the installation of two additional turbines (EU IDs 3 and 4) and classified ~~that the~~ stationary source as PSD major. Both turbines underwent a PSD review, including Best Available Control Technology (BACT) determinations for NO_x and PM₁₀. The owner requested limits established in Permit No. 9923-AC011 were retained to avoid PSD review of the stationary source's existing equipment.

Construction Permit No. 0123-AC011 was issued to the Permittee on July 18, 2001 and rescinded the previous construction permit. This permit was required as a remedial measure of Compliance Order by Consent (COBC) No. 2001-0038-50-1741 to update emissions units ratings and revise operational limits for the platform's cranes (EU IDs 24 and 25). This permit retained the owner requested limits established in Permit No. 9923-AC011 and BACT limits established in Permit No. 0023-AC007.

Construction Permit No. 091CP04 was issued to the Permittee on January 24, 2003 and rescinded the previous construction permit. This permit revised terms and conditions established by Construction Permit No. 0123-AC011, and addressed the operational limits on the platform's glycol heaters (i.e., EU IDs 10 through 12, EU ID 11 has since been removed from service). However, the permit did not carry forward all PSD avoidance requirements from Construction Permit No. 0123-AC011. If the PSD avoidance limits, originally established in Construction

Commented [Hilcorp-194]: Change the heading to this section of the Statement of Basis, which describes both past and current air quality permits for the stationary source.

Commented [Hilcorp-195]: Add new Footnote 3 to the heading for the Current Air Quality Permits section to provide clarifying information regarding use of the term "the Permittee" in this section of the Statement of Basis.

Commented [Hilcorp-196]: Insert the specific permit number being referenced in the concluding sentence of this section of the Statement of Basis.

Also, there remains only one stationary source-specific requirement of permit 9623-AA007 that is still in effect. Add language to clarify that only the currently applicable requirements are carried forward from this permit to the Title V operating permit.

Commented [Hilcorp-197]: Correct grammatical error.

Commented [Hilcorp-198]: Add a note to remind the reader that EU ID 11 has been removed from service.

³ For events described in this section of the Statement of Basis that occurred prior to November 1, 2016 "the Permittee" means ConocoPhillips Alaska, Inc. Otherwise, "the Permittee" means Hilcorp Alaska, LLC.

Permit No. 9923-AC011 are not re-established, then the equipment precluded from PSD review would then be subject to PSD, and a new permit application would be required.

On May 15, 2007, ConocoPhillips submitted a minor permit application and requested that all required terms and conditions from Permit No. 0123-AC011 that were inadvertently missing from Permit No. 091CP04 be reestablished. ConocoPhillips also requested that the Department make some modifications or not to re-establish some of the conditions from Permit No. 0123-AC011. Minor Permit No. AQ0091MSS01 was issued on April 8, 2008 and rescinded Permit No. 091CP04.

On September 22, 2008, ConocoPhillips requested an administrative amendment to Minor Permit No. AQ0091MSS01 to correct the ratings of EU IDs 3 and 4. This error was not carried forward in the Title V operating permit. On October 16, 2008, ConocoPhillips requested an administrative amendment to Minor Permit No. AQ0091MSS01 and Title V Operating Permit No. AQ0091TVP01 Revision 2 to change the rating of EU IDs 8, 9, 20, and 21 to hp values rather than kW values. ConocoPhillips confirmed that the change would not affect emissions as the ratings are equivalent values. On November 12, 2008, the Department issued Minor Permit No. AQ0091MSS01 Administrative Revision 1. All effective stationary source-specific requirements established in this Title I permit are included in the Title V operating permit as described in Table F.

On September 3, 2012, ConocoPhillips submitted an application to revise Minor Permit No. AQ0091MSS01, Revision 1 to replace EU IDs 24 and 25 and update the emission factors used to show compliance with the 20.2 tpy NO_x cap that applies to EU IDs 20, 21, 24, 25, 28, 33, and 34. Minor Permit No. AQ0091MSS03 was issued on September 23, 2013 and rescinded Permit No. AQ0091MSS01, Revision 1. On November 1, 2016, the Department issued Revision 1 to Minor Permit No. AQ0091MSS03 to reflect the transfer of ownership of the Tyonek Platform from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC. All effective stationary source-specific requirements established in Minor Permit No. AQ0091MSS03, Revision 1 are included in Title V Operating Permit No. AQ0091TVP03 as described in Table H.

On December 23, 2020, the Department issued Minor Permit No. AQ0091MSS04 to authorize relocation of the Spartan 151 Drill Rig to the Tyonek Platform. All effective stationary-source specific requirements established in the minor permit are included in Title V Operating Permit No. AQ0091TVP03 as described in Table I.

Title V Operating Permit Application, Revisions, and Renewal History

The Permittee submitted an application for a Title V operating permit in October 1997 (received by the Department on October 16, 1997). On September 18, 2002, the Department issued Title V Operating Permit No. 091TVP01.

The Department issued Permit No. AQ0091TVP01 Significant Revision 1 on April 28, 2004 to incorporate terms and conditions of Construction Permit No. 091CP04.

The Department issued Permit No. AQ0091TVP01 Significant Revision 2 on August 25, 2005 to clarify that fuel meters may be shared by emissions units when they are identically rated units.

The Department issued Permit No. AQ0091TVP01 Administrative Revision 3 on November 12, 2008. This revision reflected the administrative amendment made in AQ0091MSS01 Revision 1 and as requested on October 16, 2008.

Commented [Hilcorp-199]: Correct grammatical error.

Commented [Hilcorp-200]: This sentence should be deleted since permit AQ0091MSS01 Revision 1 has been rescinded by permit AQ0091MSS03 and is no longer a cited permit within the renewed Title V permit.

Commented [Hilcorp-201]: Insert a summary of Minor Permit No. AQ0091MSS03 and a reference to the table that describes how conditions from permit AQ0091MSS03 have been carried forward into permit AQ0091TVP03.

Commented [Hilcorp-202]: Insert a summary of Minor Permit No. AQ0091MSS04 and a reference to the table that describes how conditions from permit AQ0091MSS04 have been carried forward into permit AQ0091TVP03.

The Permittee submitted an application for a renewal to the Title V operating permit to renew permit No. AQ0091TVP01 on September 25, 2006. The Department issued Permit No. AQ0091TVP02 on March 31, 2009. The Department determined the application was incomplete on May 25, 2007. On June 11, 2007, the Permittee supplied additional information for a complete application.

The Permittee submitted an application to renew Permit No. AQ0091TVP02 on September 27, 2013. The renewal application was updated and resubmitted by Hilcorp Alaska, LLC in February 2023 by invitation of the Department.

The Department received a completed Transfer of Ownership Form from Hilcorp Alaska, LLC on October 31, 2016 with signed affidavits indicating the sale of the Tyonek Platform from ConocoPhillips Alaska, Inc. to Hilcorp Alaska, LLC. On November 1, 2016 the Department finalized the transfer of the Tyonek Platform's Air Permits to Hilcorp Alaska, LLC, by issuing AQ0091MSS03 Rev. 1 and AQ0091TVP02 Rev. 1.

Updates to the emissions unit inventory have been made in permit AQ0091TVP03 compared to previous Title V operating permit no. AQ0091TVP02. The updates and their bases are documented in Table F.

Table F– Emissions Unit Inventory Revisions

EU ID	Emissions Unit Description	Rating/ Size	Explanation
Heaters			
11	Glycol Heater No. 2	11.1 MMBtu/hr	Removed from service and from the permit when renewed to create permit AQ0091TVP03.
Engines			
24	Caterpillar C9.3 Crane Engine	350 hp	The 230 hp Manitowoc crane engine installed in 1968 has been replaced with a 350 hp Caterpillar C9.3 crane engine.
25	John Deere 6133HF485F Crane Engine	500 hp	The 230 hp Unit crane engine installed in 1968 has been replaced with a 500 hp John Deere 6133HF485F crane engine.

COMPLIANCE HISTORY

The stationary source has operated at its current location since 1968. Review of the past permit files for this stationary source, indicate that it entered into two compliance orders by consent. COBC No. 01-038-50-1741 was issued on March 9, 2001 for exceeding the operational limits on the platform's cranes (EU IDs 24 and 25). Permit No. 0123-AC011 was issued on July 18, 2001 and resolved this violation. Review of current permit files indicate indicates that the stationary source is operating in compliance with its permit.

Commented [Hilcorp-203]: Update the first of these two paragraphs to clarify the language and to remove details that are no longer necessary for inclusion in the next generation of the Statement of Basis and add a new paragraph to address the most recent permit renewal application.

Commented [Hilcorp-204]: Add new Table F to document the emissions unit inventory changes for the renewed Title V permit compared to the TVP02 permit.

Commented [Hilcorp-205]: Remove the discussion regarding compliance orders that were in effect over 20 years ago. This information is outdated and no longer relevant. Replace this discussion with updated compliance documentation that applies at the time of TVP03 permit issuance.

Also, correct a grammatical error.

STATIONARY SOURCE-SPECIFIC REQUIREMENTS CARRIED FORWARD FROM PRIOR PERMITS

Incorporated by reference at 18 AAC 50.326(j), 40 C.F.R. Part 71.2 defines “applicable requirement” to include the terms and conditions of any pre-construction permit issued under rules approved in Alaska’s State Implementation Plan (SIP) and any pre-construction permits issued by the EPA.

Alaska’s SIP includes the following types of pre-construction permits:

- Permit-to-operate issued before January 18, 1997 (these permits cover both construction and operations);
- Construction Permits issued effective January 18, 1997 or later; and
- Minor permits issued effective October 1, 2004 or later.

Pre-construction permit terms and conditions include both source-specific conditions and conditions derived from regulatory applicable requirements such as standard conditions, generally applicable conditions and conditions that quote or paraphrase requirements in regulation.

State of Alaska regulation in 18 AAC 50.326(j) with reference to 40 C.F.R. Part 71.6 requires that an operating permit include all emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance. These requirements include, but are not limited to, each stationary source-specific requirement established in the most recent operating permit or in any other construction permit these permits issued under 18 AAC 50 that are still in effect at the time of this operating permit issuance.

Table G Table E, and Table H Table F, and Table I list describe how the stationary source-specific requirements were carried over from Permit No. 9623-AA007, and Permit No. AQ0091MSS01 Revision 1 AQ0091MSS03, Revision 1, and Permit No. AQ0091MSS04, respectively, into Operating Permit No. AQ0091TVP03AQ0091TVP02. Table J documents how renewed Permit No. AQ0091TVP03 differs from Permit No. AQ0091TVP02.

Table GE – Comparison of Permit No. 9623-AA007 Conditions to Operating Permit No. AQ0091TVP03AQ0091TVP02 Conditions⁴

Permit No. 9623-AA007 Condition No.	Description of Requirement	Permit No. AQ0091TVP03AQ0091TVP02 Condition No.	How Condition was Revised
5	Fuel Sulfur Limit of 0.5% by weight for EU IDs 20-36	NA	Not carried over – this limit has been replaced by a more stringent sulfur limit in subsequent Title I permits. Minor Permit No. AQ0091MSS01 Rev. 1.

⁴ This table does not include all standard and general conditions.

Commented [Hilcorp-206]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-207]: These edits are intended to clarify the language. Also, we ask that the Department replace existing Statement of Basis Table F with new Statement of Basis Table H that addresses conditions as carried forward from minor permit AQ0091MSS03 permit into permit AQ0091TVP03 and add a reference to new Statement of Basis Table I that addresses conditions as carried forward from minor permit AQ0091MSS04.

Commented [Hilcorp-208]: Proposed language to introduce new Table J.

Commented [Hilcorp-209]: Revise many of the entries in the “how condition was revised” column to be more generic since permit AQ0091MSS01 Rev 1 has been replaced by permit AQ0091MSS03.

Statement of Basis

Permit No. [AQ0091TVP03AQ0091TVP02](#)

Revision 1: November 1, 2016

<Insert Date> March 31, 2009

Permit No. 9623-AA007 Condition No.	Description of Requirement	Permit No. AQ0091TVP03A Q0091TVP02 Condition No.	How Condition was Revised
6	Operate EU IDs 8 and 9 with Air-Fuel Controllers and Catalytic Converters	19	Not revised. Monitoring, reporting and source testing provisions added.
7	Flare systems shall have flow controls and not allow liquids to flow to the flare	NA	Removed the requirement. The affected temporary flare systems are no longer included in the source's emissions unit inventory.
9	Operate fuel burning equipment so its emissions do not exceed the Interim Annual Emission Limits	NA	Not carried over - condition has been rescinded and replaced by conditions in subsequent Title I permits . Minor Permit No. AQ0091MSS01 Rev. 1.
18	Analyze for the hydrogen sulfide content of the fuel gas on a quarterly basis using Draeger Tube analysis	NA	Not carried over - condition has been rescinded and replaced by conditions in subsequent Title I permits . Minor Permit No. AQ0091MSS01 Rev. 1.
19	Provide quarterly compliance demonstration that emissions are not greater than Interim Annual Emission Limits	NA	Not carried over - condition has been rescinded and replaced by subsequent Title I permit conditions in Minor Permit No. AQ0091MSS01 Rev. 1.
23	Notify the Department if fuel gas hydrogen sulfide content exceeds 250 ppm	NA	Not carried over - condition has been rescinded and replaced by subsequent Title I permit conditions in Minor Permit No. AQ0091MSS01 Rev. 1.

Commented [Hilcorp-209]: Revise many of the entries in the "how condition was revised" column to be more generic since permit AQ0091MSS01 Rev 1 has been replaced by permit AQ0091MSS03.

Commented [Hilcorp-210]: We propose to delete unnecessary text since the change described therein has no effect upon the applicability and content of the permit condition in the Title I permit.

Table HF – Comparison of [Minor Permit No. AQ0091MSS01 Revision 1](#) [AQ0091MSS03 Revision 1](#) Conditions to Operating Permit No. [AQ0091TVP02](#) [AQ0091TVP03](#) Conditions⁵

Permit No. AQ0091MSS0301 Rev. 1 Condition No.	Description of Requirement	Permit No. AQ0091TVP03A Q0091TVP02 Condition No.	How Condition was Revised
5 - 67 - 8	Ambient air quality protection limits for non-road engines	11 - 12	No change. Added conditions 10.1 through 10.3 to gap-fill MR&R requirements.

Commented [Hilcorp-211]: Update Statement of Basis Table F to compare permit AQ0091MSS03 to renewed permit AQ0091TVP03.

Commented [Hilcorp-212]: We have updated the first column of Statement of Basis Table F to include references to the condition numbers found in permit AQ0091MSS03.

Commented [Hilcorp-213]: We propose to delete unnecessary text since the change described therein has no effect upon the applicability and content of the permit condition in the Title I permit. There is no change to the underlying requirement as stated in our proposed version of how the condition was revised.

⁵ This table does not include all standard and general conditions.

Permit No. <u>AQ0091MSS0304</u> Rev. 1 Condition No.	Description of Requirement	Permit No. <u>AQ0091TVP03AQ0091TVP02</u> Condition No.	How Condition was Revised
<u>9</u>	<u>Owner requested limit to avoid PSD Combined NOx emissions applicable to EU IDs 20, 21, 24, 25, 28, 33, and 34</u>	<u>15</u>	<u>No change</u>
<u>10</u>	<u>Owner requested limits to avoid PSD Gaseous fuel and liquid fuel sulfur content</u>	<u>16</u>	<u>Administrative changes were made to add clarity and to make the MR&R subconditions more closely reflect the language found in Standard Permit Condition XI.</u>
<u>7--911</u>	<u>Owner requested limits to avoid PSD Natural gas consumption</u>	<u>42--17</u>	<u>Corrected Conditions 11a and 11c from the MSS03 permit by adding "rolling" to the limits as carried forward to Conditions 17.a and 17.c of the TVP03 permit. Corrected condition by deleting reference to the Well Test Flare (old EU ID 40) as the unit has been removed from the stationary source. Added conditions 12.8, 13.6, and 14.5 to gap-fill excess emissions reporting requirements.</u>
<u>1012</u>	<u>BACT limits</u>	<u>1815</u>	<u>No substantive change. Corrected condition by replacing the word "present" with "absent"; non-dry-low NOx is indicated by an absent flame.</u>

Commented [Hilcorp-212]: We have updated the first column of Statement of Basis Table F to include references to the condition numbers found in permit AQ0091MSS03.

Commented [Hilcorp-214]: Add a note to document a change to Conditions 11a and 11c of minor permit AQ0091MSS03 as carried forward to permit AQ0091TVP03.

Commented [Hilcorp-215]: The reference to the Well Test Flare (old EU ID 40) documented here can be removed because the noted error was fixed in permit AQ0091MSS03 when it was issued.

Commented [Hilcorp-216]: We propose to delete unnecessary text since the change described therein has no effect upon the applicability and content of the permit condition in the Title I permit.

Commented [Hilcorp-217]: The error documented here was fixed in permit AQ0091MSS03 when it was issued. As such, no substantive change has been made to Condition 12 of the MSS03 permit when carried forward to the TVP03 permit.

Commented [Hilcorp-218]: Insert new Statement of Basis Table I describing how stationary source specific conditions of minor permit AQ0091MSS04 are carried forward to operating permit AQ0091TVP03.

Table I- Comparison of Minor Permit No. AQ0091MSS04 Conditions to Operating Permit No. AQ0091TVP03 Conditions⁶

Permit No. <u>AQ0091MSS04</u> Condition No.	Description of Requirement	Permit No. <u>AQ0091TVP03</u> Condition No.	How Condition was Revised
<u>Table 1</u>	<u>Spartan 151 Drill Rig Emissions Unit Inventory</u>	<u>Table B</u>	<u>No change, except to include the make/ model of EU IDs S10, S11, S13, and S14</u>

⁶ This table does not include all standard and general conditions.

Statement of Basis

Permit No. AQ0091TVP03AQ0091TVP02

Revision 1: November 1, 2016

<Insert Date> March 31, 2009

<u>Permit No.</u> <u>AQ0091MSS04</u> <u>Condition No.</u>	<u>Description of Requirement</u>	<u>Permit No.</u> <u>AQ0091TVP03</u> <u>Condition No.</u>	<u>How Condition was Revised</u>
<u>3</u>	<u>Assessable Emissions</u>	<u>49</u>	<u>Updated to match the information provided with the operating permit renewal application.</u>
<u>4 & 5</u>	<u>Ambient air quality protection limits for drill rig non-road engines</u>	<u>13 & 14</u>	<u>No substantive change. However, Condition 14 clarifies that the 8,615 bHp limit applies to the drill rig nonroad engines. This limit is a subset of the platform total nonroad engine limit in Condition 11 of AQ0091TVP03.</u>

Table J - Comparison of Operating Permit No. AQ0091TVP02 to Operating Permit No. AQ0091TVP03 Conditions⁷

<u>Permit No.</u> <u>AQ0091TVP02</u> <u>Condition No.</u>	<u>Description of Requirement</u>	<u>Permit No.</u> <u>AQ0091TVP03</u> <u>Condition No.</u>	<u>How Condition was Revised</u>
<u>21</u>	<u>NSPS Subpart A Notifications</u>	<u>21</u>	<u>Revised to match the underlying regulatory language</u>
<u>23</u>	<u>NSPS Subpart A Excess Emissions and Monitoring Systems Performance Reports</u>	<u>23</u>	<u>Revised to reflect the language used by the Department in more recent Title V permits.</u>
<u>24</u>	<u>NSPS Subpart A Summary Report Form</u>	<u>24</u>	<u>Revised to reflect the language used by the Department in more recent Title V permits.</u>
<u>26</u>	<u>NSPS Subpart A Good Air Pollution Control Practice</u>	<u>26</u>	<u>Revised to match the underlying regulatory language</u>
<u>29</u>	<u>NSPS Subpart GG NOx Standard with associated MR&R</u>	<u>29</u>	<u>Revised to reflect the language used by the Department in more recent Title V permits.</u>
<u>30</u>	<u>NSPS Subpart GG SO₂ Standard with associated MR&R</u>	<u>30</u>	<u>Revised to reflect the language used by the Department in more recent Title V permits.</u>
<u>N/A</u>	<u>NSPS Subpart IIII (applicable to EU IDs 24 and 25)</u>	<u>31</u>	<u>New condition</u>
<u>31</u>	<u>NESHAPs (40 C.F.R. 63) Subpart A General Provisions</u>	<u>32</u>	<u>Revised to combine appropriate language pertaining to Part 63 NESHAP Subpart A with respect to Subpart ZZZZ as well as the existing permit language that addresses Subpart A with respect to Subpart HH.</u>

Commented [Hilcorp-219]: Insert new Statement of Basis Table J comparing current permit (TVP02) conditions to new permit (TVP03) conditions, excluding standard and general conditions.

⁷ This table does not include all standard and general conditions.

Statement of Basis

Permit No. [AQ0091TVP03](#)[AQ0091TVP02](#)

Revision 1: November 1, 2016

<Insert Date> [March 31, 2009](#)

Permit No. AQ0091TVP02 Condition No.	Description of Requirement	Permit No. AQ0091TVP03 Condition No.	How Condition was Revised
N/A	Determining actual benzene emissions from EU IDs 40 – 42 using direct measurement	33.1b	New condition
N/A	NESHAP Subpart HH Good Air Pollution Control Practices for EU IDs 40 - 42	34	New condition
N/A	NESHAP Subpart ZZZZ for EU IDs 24 and 25	35	New condition
N/A	NESHAP Subpart ZZZZ for EU IDs 8, 9, 20, 21, 28, 33, and 34	36 - 41	New conditions

STATEMENT OF BASIS FOR THE PERMIT CONDITIONS

The State and ~~Federal~~ regulations for each condition are cited in Operating Permit No. AQ0091TVP03AQ0091TVP02. The Statement of Basis provides the legal and factual basis for each term and condition as set forth in 40 C.F.R. 71.6(a)(1)(i).

Conditions 1 - 5, Visible Emissions Standard and MR&R

Legal Basis: These conditions ~~ensure compliance~~ require the Permittee to comply with the applicable requirements in 18 AAC 50.055(a). ~~18 AAC 50.055(a) applies to the operation of fuel-burning equipment and industrial processes.~~

- 18 AAC 50.055(a) applies to the operation of fuel-burning equipment and industrial processes. EU IDs 1 – 4, 8 – 10, 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 are fuel burning equipment ~~or industrial processes.~~

U.S. EPA approved the addition of this standard to the State Implementation Plan (SIP), as noted in 40 C.F.R. 52.70. The Department included permit conditions for MR&R as required by 40 CFR 71.6(a)(3) and 71.6(c)(1). U.S. EPA incorporated these standards as revised in 2002 into the State Implementation Plan (SIP) effective September 13, 2007.

Factual Basis: Condition 1 prohibits the Permittee from causing or allowing visible emissions in excess of 18 AAC 50.055(a)(1). ~~The Permittee must monitor, record, keep and report emissions in accordance with conditions 2 through 4 of the permit.~~

The MR&R conditions requirements are listed in Conditions 2 through 5 of the permit. These conditions have been standard conditions adopted into regulation pursuant to AS 46.14.010(e) (as Standard Condition (SPC) IX).

These conditions have been modified for this permit as follows:

- The Permittee has opted not to use the Smoke/No Smoke plan and requested that this option not be included in the permit, so the Department did not include this provision in the condition.

~~One of these conditions has been modified in this permit. For liquid fuels, the Department removed an error that inadvertently specified three sets of 18 minute observations when conducting annual observations. The Department also added a provision that clarifies the option to continue an established monitoring frequency for renewal permits. The Department adopted these changes into a revised standard condition on November 9, 2008.~~

~~Beyond as noted above, the Department has previously determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate the unit specific or stationary source specific conditions would better meet the requirements. Therefore, the Department concludes that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3). The Permittee must establish by actual visual observations, which can be supplemented by other means such as a defined Stationary Source Operation and Maintenance Program, that the stationary source is in continuous compliance with the State's emission standards for visible emissions and particulate matter.~~

Commented [Hilcorp-220]: Update to reflect the capitalization used by the Department in other Title V permits.

Commented [Hilcorp-221]: Revise to generally incorporate the updated version of the Statement of Basis for these conditions that accompanies Standard Permit Condition IX as revised by the Department July 22, 2020. Any differences between our proposed version of the Statement of Basis for these conditions and the Statement of Basis that accompanies Standard Permit Condition IX are source-specific requests for different language.

These conditions detail a stepwise process for monitoring compliance with the State's visible emissions and particulate matter standards for liquid fuel-fired fuel burning equipment. Equipment types covered by these conditions are internal combustion engines, turbines, heaters, boilers, and flares. Initial monitoring frequency schedules are established along with subsequent reductions or increases in frequency depending on the results of the self-monitoring program.

Reasonable action thresholds are established in these conditions that require the Permittee to progressively address potential visible emission problems from emissions units either through maintenance programs and/or more rigorous tests that will quantify whether a specific emission standard has been exceeded.

The Department developed eCondition 5 was developed by the Department to provide a standardized version of flare monitoring that is not dependent upon the type or design of upstream equipment. It has been claimed that gas-fired flares normally burn without emitting visible emissions, but actual field data demonstrating this assumption is not available. However, gas-fired flares have been shown to smoke when a control device (i.e., a knockout drum, flare scrubber, gas or steam assist, or vapor recovery system) malfunctions (e.g., knockout drum, flare scrubber, gas or steam assist, or vapor recovery system). Thus, theThe condition sets out a protocol to collect actual field data to determine compliance with the 20 percent opacity-visible emissions standard for flares.

A Department analysis of industry flaring operations indicates that 49 percent of the gas flared (by volume) is for pilot/purge, 25 percent is for flaring less than one hour, and 26 percent is for flaring that lasts more than one hour. Pilot/purge flaring constitutes half of all flaring by volume and is continuous in nature and can be observed at any time. This type of flaring has not caused violations of the opacity standard in the past and can be checked at any time by agency inspectors. The remaining half of the flaring volume is split evenly between less than and greater than one hour duration. Therefore, the monitoring scheme in this condition addresses the half of the non-continuous flaring operations that are scheduled and for which a certified observer can reasonably be located onsite.

Since it is impractical to require a stationary source to have a certified Method 9 opacity reader on site for unpredictable emergency flaring, the monitoring protocol requires Method 9 readings only during scheduled flare events. Scheduled events such as those generated by maintenance activities and well testing of approximately⁸ one hour in duration will be observed. These one hour events are currently quantified and reported to the Alaska Oil and Gas Conservation Commission for other reasons and thus provides a confirming information record of the occurrence of these events. Only those events as defined in the condition need to be monitored. If no events meeting this definition occur during the life of the permit then no monitoring is required.

Since only flaring that is scheduled and exceeds one hour is required to be observed, operators will have time to provide certified Method 9 readers onsite. Most oil and gas production plants in Alaska are located at remote sites, so it is not reasonable to self monitor

⁸ For purposes of this permit, a "flare event" is flaring of gas for approximately one hour as a result of scheduled release operations, i.e., maintenance or well testing activities. It does not include non-scheduled release operations, i.e., process upsets, emergency flaring, or de-minimis venting of gas incidental to normal operations. "Approximately" is defined as any release with a duration of 50 minutes or more.

~~all or even a large sample of the flaring that occurs. Data collected from planned events will help the Department refine this monitoring scheme during future permit cycles. Process upsets and emergency events that may or may not exceed one hour occur randomly and do not lend themselves easily to periodic monitoring. At this time, the Department will rely on stationary source excess emission reports, citizen complaints, and agency inspections for information concerning these short term and emergency events.~~

Gas-Fired Fuel Burning Equipment:

Monitoring - The monitoring of gas fired emissions units for visible emissions is waived, i.e., no source testing will be required. The Department has found that natural gas fired equipment inherently has negligible PM-visible emissions. Therefore, certification that an emissions unit burns only natural gas ensures that the State visible emission standard is met. However, the Department can request a source test for PM-visible emissions from any smoking equipment.

Reporting - The Permittee must state in each operating report whether only gaseous fuels were used in the equipment during the period covered by the report. The Permittee must certify that only gaseous fuels are used in the equipment.

Liquid Fuel-Fired Fuel Burning Equipment Other Than IEUs:

Monitoring - The visible emissions may emissions unit exhaust must be observed by either using Method-9 or the Smoke/No Smoke plans as detailed in condition Condition 22-1. Corrective actions such as maintenance procedures and either more frequent or less frequent testing may be required depending on the results of the observations.

Recordkeeping - The Permittee is required to record the results of all visible emission observations and record any actions taken to reduce visible emissions.

Reporting - The Permittee is required to report: 1) the results of visible emissions observations, 2) incidents when emissions have been observed that exceed the State visible emissions standard, and 3) deviations from permit conditions. The Permittee is required to report: 1) emissions in excess of the federal and the State visible emissions standard and 2) deviations from permit conditions. The Permittee is required to include copies of the results of all visible emission observations with the stationary source operating report.

Insignificant Emissions Units:

Monitoring - For EU IDs 20, 21, 24, 25, 28, 33, and 34, no visible emissions monitoring is required because when these emission units are insignificant emissions units based on actual emissions, as set out by 18 AAC 50.326(e). As long as these units operate under their respective annual hours of operation thresholds in Table C, they are considered insignificant emissions units based on actual emissions as specified in 18 AAC 50.326(e) as emissions are below the rates set out by 18 AAC 50.326(e), they are considered insignificant emission units and no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, dated October 8, 2004.

For EU ID 37 (flare pilots), no visible emissions monitoring is required because this unit is an insignificant emissions unit based on potential emissions under 18 AAC 50.326(e) and based on size under 18 AAC 50.326(g)(5).

Commented [Hilcorp-222]: In the corresponding paragraph of the Statement of Basis for Standard Permit Condition IX, the Department states that records of actions taken to reduce visible emissions must be kept. However, we do not see that requirement in SPC IX and, therefore, it is also not in our proposed revisions to the operating permit. So, we have removed that provision as part of our proposed changes to the Statement of Basis for Tyonek permit AQ0091TVP03.

Reporting - The Permittee must annually certify compliance under ~~condition~~ Condition 7466 with the visible emission standard based on reasonable inquiry.

Flares:

Monitoring - Monitoring for flares (EU IDs ~~37–38 and~~ 39) requires Method-9 observations of scheduled daylight flaring events lasting more than one hour.

Reporting - The Permittee must report the results of these observations to the Department.

Conditions 6 - 8, Particulate Matter (PM) Standard and MR&R

Legal Basis: These conditions ~~ensure compliance~~ require the Permittee to comply with the applicable requirement in 18 AAC 50.055(b). ~~This requirement applies to operation of all industrial processes and fuel burning equipment in Alaska.~~

- 18 AAC 50.055(b)(1) applies to the operation of all fuel-burning equipment and industrial processes. EU IDs 1 – 4, 8 – 10, 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 are fuel-burning equipment.

~~These PM standards also apply because they are~~ This PM standard applies because it is contained in the federally ~~approved~~ SIP ~~effective September 13, 2007.~~ The Department included permit conditions for MR&R as required by 40 C.F.R. 71.6(a)(3) and 71.6(c)(1).

Factual Basis: Condition 6 prohibits emissions in excess of the applicable state ~~State~~ PM ~~(also called grain loading)~~ standard. ~~applicable to fuel burning equipment and industrial processes. The Permittee shall not cause or allow fuel burning equipment nor industrial processes to violate this standard.~~

MR&R requirements are listed in ~~condition~~ Conditions 7 and 8 of the permit. For gas-fired units, the MR&R conditions have been adopted into regulation as SPC VIII. For liquid fuel-fired units, the MR&R conditions have been adopted into regulation as SPC IX.

The Permittee must establish by visual observations, which may be supplemented by other means (e.g., a defined stationary source operation and maintenance program) that the stationary source is in continuous compliance with the state's emission standards for PM.

Gas-Fired Fuel Burning Equipment:

~~For gas fired emission units, MR&R conditions are Standard Condition VIII adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit specific or stationary source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).~~

Monitoring - The monitoring of gas-fired emissions units for particulate matter is waived, i.e. no source testing will be required. The Department has found that natural gas-fired equipment inherently has negligible PM emissions. However, the Department can request a source test for PM emissions from any smoking equipment.

Reporting - The Permittee must state in each operating report whether only gaseous fuels were used in the equipment during the period covered by the report. Although periodic PM

Commented [Hilcorp-223]: Revise to generally incorporate the updated version of the Statement of Basis for these conditions that accompanies Standard Permit Condition IX as revised by the Department July 22, 2020. Any differences between our proposed version of the Statement of Basis for these conditions and the Statement of Basis that accompanies Standard Permit Condition IX are source-specific requests for different language.

~~monitoring of gas-fired units is waived, the Department has the discretion to request a source test for PM emissions from any fuel-burning equipment under 18 AAC 50.220(a) and 345(l). The Permittee must state in each operating report whether only gaseous fuels were used in the equipment during the period covered by the report.~~

Liquid Fuel-Fired Fuel Burning Equipment:

~~For liquid fuel units, the MR&R conditions are Standard Condition IX adopted into regulation pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).~~

~~Monitoring - The Permittee is required to either take corrective action, or conduct PM source testing, if opacity threshold values are exceeded. For liquid fuel-burning engines and turbines, the Department set opacity threshold values of 15 percent for stack diameters less than 18 inches and 20 percent for stack diameters equal to or greater than 18 inches.~~

~~Recordkeeping - The Permittee is required to record the results of PM source tests and visible emissions observations conducted during the source test.~~

~~Reporting - The Permittee is required to report: 1) incidents when emissions in excess of the opacity threshold values have been observed, and 2) the results of PM source tests. The Permittee is also required to include copies of the results of all visible emission observations taken during a PM source test with the operating report. The Permittee must establish by actual visual observations which can be supplemented by other means, such as a defined Stationary Source Operation and Maintenance Program that the stationary source is in continuous compliance with the State's emission standards for particulate matter.~~

Insignificant Emissions Units:

~~Monitoring - For EU IDs 20, 21, 24, 25, 28, 33, and 34, no monitoring is required because when these emission units are insignificant emissions units based on actual emissions. As long as these units operate under their respective annual hours of operation thresholds in Table C, they are considered insignificant emissions units based on actual emissions as set out by specified in 18 AAC 50.326(e). As long as emissions are below the rates set out by 18 AAC 50.326(e), they are considered insignificant emission units and no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, dated October 8, 2004.~~

~~For EU ID 37 (flare pilots), no monitoring is required because this unit is an insignificant emissions unit based on potential emissions under 18 AAC 50.326(e) and based on size under 18 AAC 50.326(g)(5).~~

~~Reporting - The Permittee must annually certify compliance under condition Condition 7466 with the particulate matter standard based on reasonable inquiry.~~

Flares:

~~Monitoring of gas-fired flares for particulate matter is waived, i.e., no source testing will be required, because of the difficulty and questionable results these tests produce when applied~~

to flares. Compliance with the State visible emissions standard serves as a surrogate compliance demonstration for the State particulate matter emissions standard. The Department has recognized this fact by incorporating the waiver in the SIP adopted in November 1984, which has not been federally approved. No recordkeeping or reporting is required.

Condition 109, Sulfur Compound Emissions Standard and MR&R

Legal Basis: This condition requires the Permittee to comply with the sulfur compound emission standard in 18 AAC 50.055(c) for all fuel-burning equipment and industrial processes in the State of Alaska.

- 18 AAC 50.055(c) applies to the operation of all fuel-burning equipment and industrial processes. EU IDs 1 – 4, 8 – 10, 12, 20, 21, 24, 25, 28, 33, 34, and 37 – 39 are fuel-burning equipment and industrial processes.

U.S. EPA approved the addition of this standard to the State Implementation Plan (SIP), as noted in 40 C.F.R. 52.70. The Department included permit conditions for MR&R as required by 40 CFR 71.6(a)(3) and 71.6(c)(1). These sulfur compound standards also apply because they are contained in the federally approved SIP effective September 13, 2007.

This condition cross references the fuel sulfur limits found in Condition 16 of this permit.

Factual Basis: The condition requires the Permittee to comply with the sulfur compound emission standard applicable to fuel-burning equipment. The Permittee may not cause or allow the affected equipment to violate this standard.

Sulfur dioxide comes from the sulfur in the fuel (e.g., coal, natural gas, fuel oils). Fuel sulfur testing will verify compliance with the SO₂ emission standard.

Liquid Fuels:

For oil fired fuel burning equipment, the MR&R adopted into regulation as Standard Permit Conditions (SPC) XI and XII adopted into regulation pursuant to AS 46.14.010(d) was were mostly not used. The Permittee is currently limited to 0.25 percent S by weight in condition Condition 16.43 as imposed by Minor Permit No. AQ0091 MSS03MSS04 Revision 1. The MR&R condition in Conditions 16.2 through 16.4, which are identical to that listed in the minor permit, were used rather than have two sets of MR&R. However, the MR&R from the minor permit has been supplemented to include the provisions of SPC XI that address SO₂ emissions calculations and reporting to be done in the event that a shipment of fuel contains greater than 0.75 percent sulfur by weight.

Fuel containing no more than 0.75 percent sulfur by weight will always comply with the emission standard. For fuels with a sulfur content higher than 0.75 percent, the condition requires the Permittee to calculate the sulfur-dioxide concentration to show that the standard is not exceeded.

Commented [Hilcorp-224]: We have proposed changes to the Statement of Basis for Condition 9 that reflect similar changes to the Statement of Basis for the visible emissions and particulate matter standards conditions as found in Statement of Basis language that accompanies SPC IX. The Department has not included example Statement of Basis language for SPC XI or SPC XII to use as a go by.

Commented [Hilcorp-225]: Update the referenced minor permit, insert specific cross references to the conditions referenced by the sentence, and add a discussion that describes conditions that we have proposed be added to the permit to address a portion of SPC XI that was not included in the TVP02 permit.

Gaseous Fuels:

Fuel gas sulfur is measured as hydrogen sulfide (H₂S) concentration in ppm by volume (ppmv). ~~Calculations show that fuel gas containing no more than 4000 ppm H₂S will always comply with this emission standard at stoichiometric or excess air combustion conditions. This is true for all fuel gases, even with no excess air. Equations to calculate the exhaust gas SO₂ concentrations resulting from the combustion of fuel gas were not included in this permit.~~ Fuel gas with an H₂S concentration of even 10 percent of 4000 ppm is currently not available in Alaska and is not projected to be available during the life of this permit.

The Permittee is currently limited to 200 ppmv H₂S in ~~condition~~ Condition 16.4 as imposed by Minor Permit No. AQ0091MSS03MSS04 Revision 1. The MR&R conditions for complying with this standard (Conditions 16.1 and 16.4) are identical to that listed in the minor permit.

Conditions 11.40 - 19.16, Title I Permit Requirements Operating and Construction Permit Requirements Carried Forward

Legal Basis: The Permittee is required to comply with all effective stationary source-specific requirements that were carried forward from previous EPA PSD permits, SIP approved permits to operate issued before January 18, 1997, SIP approved construction permit(s), SIP approved minor permits, operating permits issued between January 18, 1997 and September 30, 2004, or owner requested limits established under 18 AAC 50.225. These requirements include Best Available Control Technology limits, limits to ensure compliance with the attainment or maintenance of ambient air quality standards or maximum allowable ambient concentrations, and owner requested limits. State pre-construction requirements apply because they were originally developed through case-by-case action under a federally approved SIP or approved Operating Permit program. EPA approved the latest SIP effective September 13, 2007.

Air Quality Permit to Operate no. 9623-AA007 and Air Quality Minor Permit Nos. AQ0091MSS03, Revision 1 and AQ0091MSS04 contain source-specific requirements carried forward to this Title V permit.

Factual Basis: ~~Conditions 11.40 through 14 are ambient air quality protection limits, Conditions 15 through 18.45 incorporate owner requested limits, and Condition 18 includes NOx BACT limits for EU IDs 3 and 4. These limits were established under-carried forward by Minor Permit No. AQ0091MSS0304 Revision 1 and Minor Permit No. AQ0091MSS04 (i.e., the limits in Conditions 13 and 14, which apply to the Spartan 151 Drill Rig equipment).~~ The Department added monitoring, recordkeeping, and reporting under ~~condition~~ Condition 11.40 to ensure that ~~ConocoPhillips the Permittee~~ tracks the number and size of non-road internal combustion engines on the platform as gap-filling under 40 C.F.R. 71.6(a)(3). The permit incorporates the associated monitoring, recordkeeping, and reporting requirements ~~from Minor Permit no. AQ0091MSS03, Revision 1 for condition~~ Conditions 12.44 15 through 18.45 and the associated monitoring, recordkeeping, and reporting requirements from Minor Permit no. AQ0091MSS04 for Conditions 13 and 14. Condition

Commented [Hilcorp-226]: Update to include language used by the Department in other recent Title V permits.

Commented [Hilcorp- 227]: Correct the units associated with the natural gas limit from "ppm" to "ppmv" (see Condition 10 of permit no. AQ0091MSS03), update the referenced minor permit, and insert specific cross references to the conditions being referenced in the sentence.

Commented [Hilcorp-228]: Change the title of this heading to accurately describe the types of permits listed in the Legal Basis that may have requirements that are carried forward to the current operating permit.

Commented [Hilcorp-229]: Add this paragraph to describe the active permit to operate and construction permits that apply to the Tyonek Platform and have source-specific requirements to be carried forward to the operating permit.

⁹- See ADEC Air Permits Web Site at <http://www.dec.state.ak.us/air/ap/docs/sulfgas.pdf>, under "Stoichiometric Mass Balance Calculations of Exhaust Gas SO₂SO₂ Concentration."

~~18.245.2~~ references the 40 C.F.R. Subpart GG NOx ~~condition~~ Conditions ~~29.129.4, 29.229.2,~~ and ~~29.329.3~~ for MR&R requirements to comply with the NOx BACT limits of 25 ppmv and 6.2 lb/hr for EU IDs 3 and 4.

Condition ~~1946~~ incorporates ~~specific~~an operating limits carried forward ~~by~~from Permit to Operate No. 9623-AA007. This is intended to minimize the emissions from the Waukesha engines, EU IDs 8 and 9. The permit incorporates associated monitoring, recordkeeping, and reporting requirements. EU IDs 8 and 9 are gas-fired engines. As set out in the Phillips Petroleum Company's (PPC) October 13, 1992 application to amend the Permit to Operate No. 9223-AA005¹⁰, the NOx and CO emissions from EU IDs 8 and 9 are controlled using non-selective catalytic reduction (NSCR) systems to avoid PSD for drilling on platform. ~~On March 8, 1993, PPC also stated that they would formalize the catalyst replacement criteria as they gain more experience with the air-fuel ratio controller and catalytic converter. The Department has no record that CPC (or then PPC) has formalized its replacement criteria, nor a record of the Waukesha unit emission test results showing controlled emission rates from tests conducted within the past five years, nor did the past three on-site full compliance evaluation reports reference any recent record of the emission units' catalyst replacement. Therefore, the Department added condition 16.3 to reaffirm NOx emission factors for those two NSCR controlled engines, EU IDs 8 and 9.~~

Conditions ~~2017–20~~, Insignificant Emissions Units

Legal Basis: The Permittee is required to meet state emission standards set out in 18 AAC 50.055 for all industrial processes and fuel-burning equipment, ~~and incinerators~~ regardless of size. ~~18 AAC 50.055 is contained in the federally approved SIP. The Department also added permit conditions for MR&R as required by 40 C.F.R. 71.6(a)(3) and 71.6(c)(1).~~

Factual Basis: ~~The condition requires insignificant emissions units to comply with the state emission standards for visible emissions, particulate matter emissions, and sulfur-compound emissions. Insignificant emissions units are not generally listed in operating permits unless specific monitoring, recordkeeping, and reporting are necessary to ensure compliance with the state emission standards. However, the Permittee may not cause or allow insignificant emissions units at the stationary source to violate these standards whether or not they are listed in the operating permit. The conditions re-iterate the emission standards and require compliance for insignificant emission units. The Permittee may not cause or allow their equipment to violate these standards. Insignificant emission units are not listed in the permit unless specific monitoring, recordkeeping and reporting are necessary to ensure compliance.~~

The Department finds that the insignificant ~~emissions~~ units at this stationary source do not require specific monitoring, recordkeeping and reporting to ensure compliance under these conditions.

Condition ~~20.4a17.4~~ requires certification ~~based on reasonable inquiry~~ that the ~~insignificant emissions~~ units did not exceed state emission standards during the previous year and did not emit any prohibited air pollution.

Commented [Hilcorp-230]: Update to improve the accuracy and completeness of the discussion, including updates to the descriptions of the minor permits and their conditions carried forward to the TVP03 permit.

Commented [Hilcorp-231]: Suggested edit to make the statement in Footnote 8 more concise.

Commented [Hilcorp-232]: Remove the discussion pertaining to a 1993 catalyst replacement and the reference to permit Condition 16.3, the requirements of which were fulfilled during the current permit term and no longer apply. The condition should be removed from the permit and reference to it should be removed from the Statement of Basis.

Commented [Hilcorp-233]: Update the Legal Basis and the Factual Basis to reflect the language used by the Department in the July 22, 2020 revision of Standard Permit Condition V, but retain the 4th paragraph of the Factual Basis (with edits as shown) which provides source-specific details regarding IEUs at the stationary source that are included in the permit. The Department's standard SPC V Statement of Basis language that refers to incinerators and the SIP standard in 18 AAC 50.050(a) should not be included here because there are no incinerators at this stationary source.

¹⁰ Phillips Petroleum Company (PPC) ~~used to operate~~operated the Tyonek Platform in 1992. At the time, the stationary source was authorized to operate under Permit to Operate No. 9223-AA005.

For EU IDs 20, 21, 24, 25, 28, 33, and 34, as long as they remain insignificant based on actual operations, no monitoring is required in accordance with Department Policy and Procedure No. AWQ 04.02.103, Topic # 3, dated October 8, 2004 for standby emissions units subject to operating limits. These emissions units do not qualify as insignificant emissions units under 18 AAC 50.326(d)(1) because they are subject to a Federal requirement (NESHAP Subpart ZZZZ). However, these units have actual emissions below the significant emissions thresholds in 18 AAC 50.326(e) as long as they do not exceed the operating hour thresholds found in Table C of the permit.

The Department used the language in SPC V, adopted by reference under 18 AAC 50.346(b)(4), for the permit condition.

Conditions 21 - 28, NSPS Subpart A Requirements

Legal Basis: The Permittee must comply with those the applicable New Source Performance Standard (NSPS) provisions in 40 C.F.R. 60 effective July 1, 2007, incorporated by reference; for specific industrial activities, as listed in 18 AAC 50.040¹¹.

Most (with the exception of some storage tanks) source-affected facilities subject to an NSPS are subject to one or more of the General Provisions outlined under Subpart A. At this stationary source, EU IDs 1 – 4 are subject to NSPS Subpart GG and EU IDs 24 and 25 are subject to NSPS Subpart IIII and, therefore, subject to certain provisions of Subpart A.

Conditions 21.1 through 21.3 – The Permittee has already complied with the notification requirements in 40 C.F.R. 60.7 (a)(1) & (3) for EU IDs 1 – 4. However, depending on the subpart, the Permittee is still may be subject to 40 C.F.R. 60.7(a)(1), (a)(3), and/or (a)(4) these requirements in the event of a new NSPS source-affected facility¹² or modification or reconstruction of this an existing source facility¹³ into an affected facility. The notification requirements in 40 C.F.R. 60.7(a)(1) & (3) do not apply to affected facilities under NSPS Subpart IIII (i.e., EU IDs 24 and 25).

Condition 21.4 – The requirements requirement to notify the EPA and the Department of any proposed replacement of components of an affected stationary source existing facility (40 C.F.R. 60.15) apply to EU IDs 1 – 4 applies in the event that the fixed capital cost of the new components exceeds 50 percent of the fixed capital costs that would be required to construct a comparable entirely new facility of a proposed replacement of this source.

Condition 22 – Start-up, shutdown, or malfunction record maintenance requirements in 40 C.F.R. 60.7(b) are applicable to all most NSPS source-affected facilities subject to Subpart A. The requirements of 40 C.F.R. 60.7(b) do not apply to affected facilities subject to NSPS Subpart IIII (i.e., EU IDs 24 and 25).

Conditions 23 and 2124 – NSPS excess emission and monitoring systems performance (EEMSP) reporting requirements and summary report form in 40 C.F.R. 60.7(c) & (d) are applicable to affected units that use continuous monitoring device and for turbines EU IDs 1

Commented [Hilcorp-234]: Include EU IDs 20 and 21 on the list of engines that could qualify as IEUs based on actual operating time and resulting emissions.

Commented [Hilcorp-235]: Requested change is intended to add clarity to this section of the Statement of Basis.

Commented [Hilcorp-236]: Update this section of the Statement of Basis to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-237]: Include language to clarify that all provisions of NSPS Subpart A may not necessarily apply to an NSPS-affected facility.

Commented [Hilcorp-238]: Update to add clarity indicating that 40 CFR 60.7(a) does not apply to EU IDs 24 and 25 despite their being subject to NSPS Subpart IIII.

Also, add new footnotes to match those used by the Department in other Title V permits.

Commented [Hilcorp-239]: It is important to note that the notification requirement of 40 CFR 60.15 applies to “existing facilities” that undergo sufficient component replacement as to make the facility become an “affected facility”.

EU IDs 1 through 4 are “affected facilities” under NSPS, not “existing facilities”.

Commented [Hilcorp-240]: Update to add clarity indicating that 40 CFR 60.7(b) does not apply to EU IDs 24 and 25 despite their being subject to NSPS Subpart IIII.

¹¹ EPA has not delegated to the Department the authority to administer the NSPS program as of the issue date of this permit.

¹² *Affected facility* means, with reference to a stationary source, any apparatus to which a standard applies, as defined in 40 C.F.R. 60.2.

¹³ *Existing facility* means, with reference to a stationary source, any apparatus of the type for which a New Source Performance Standard (NSPS) is promulgated, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type, as defined in 40 C.F.R. 60.2.

through 4 are subject to EEMSP reporting under Subpart GG that use because they are required to conduct periodic sulfur monitoring requirement in condition 27.1a30.1a. The Department has included in Attachment A of the statement of basisStatement of Basis a copy of the federal EEMSP summary report form for use by the stationary sourcePermittee. Conditions 23 and 24 do not apply to Subpart GG turbinesEU IDs 1 through 4 that are monitored under condition 30.1b when the gaseous fuel fired by these units is demonstrated to meet the definition of natural gas under 40 C.F.R. 60.331(u).

Recordkeeping requirements in 40 C.F.R. 60.7(f) are applicable to all NSPS sources. (Satisfied by condition 60).

Condition 25 – This condition requires the Permittee to conduct performance tests for units subject to an applicable emission standard upon request from the NSPS administrator per 40 C.F.R 60.8. The Permittee has already complied with the initial performance test requirements in 40 C.F.R. 60.8 for EU IDs 1 – 4. However, the Permittee is still subject to these requirements in the event of a new NSPS affected facility, in the event of a modification or reconstruction of an existing facility into an affected facility, or at such other times as may be required by EPA.

Condition 26 – Good air pollution control practices in 40 C.F.R. 60.11(d) are applicable to all most NSPS sources subject to Subpart A, such as (EU IDs 1 – 4). However, these provisions do not apply to EU IDs 24 and 25 because NSPS Subpart IIII includes specific provisions pertaining to good air pollution control practice.

Condition 27 – This condition states that any credible evidence may be used to demonstrate compliance or establishing violations of relevant NSPS standards for EU IDs 1 – 4 per 40 C.F.R. 60.11(g). This condition does not apply to affected emissions units under NSPS Subpart IIII (i.e., EU IDs 24 and 25), per Table 8 of the rule.

Condition 28 – Concealment of emissions (i.e., circumvention) prohibitions in 40 C.F.R. 60.12 are applicable to EU IDs 1 – 4, 24 and 25.

Recordkeeping requirements found in 40 C.F.R. 60.7(f) are applicable to all NSPS sources (satisfied by Condition 68).

Factual Basis: General provisions of 40 C.F.R. 60, Subpart A apply to owners or operators who are subject to a relevant subpart under Part 60, except when otherwise specified in an applicable subpart or relevant standard. In general, the intent of Subpart A is to eliminate the repetition of requirements applicable to all owners or operators affected by NSPS. Subpart A contains the general requirements applicable to all affected facilities (sources) subject to NSPS. In general the intent of NSPS is to provide technology based emission control standards.

Conditions 29 and 30, NSPS Subpart GG Requirements

Legal Basis: This-These conditions prohibits the Permittee from exceeding emission standards set out in Subpart GG. NSPS Subpart GG applies to stationary gas turbines with a heat input at peak load (maximum load at 60 percent relative humidity, 59 degrees F, and 14.7 psi) equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr), based on the lower heating value of the fuel fired and constructed, modified, or reconstructed after October 3, 1977. EU IDs 1 through 4 are subject to NSPS Subpart GG.

Commented [Hilcorp-241]: Move to the end of the Legal Basis as shown below.

Commented [Hilcorp-242]: Update to add clarity pertaining to why 40 CFR 60.11(d) and §60.11(g) do not apply to EU IDs 24 and 25 despite their being subject to NSPS Subpart IIII.

Commented [Hilcorp-243]: Update to account for EU IDs 24 and 25 becoming subject to NSPS Subpart IIII and add the term "circumvention" to the paragraph to match the term used in 40 CFR 60.12.

Commented [Hilcorp-244]: Move from above to improve the presentation layout of the language in the Legal Basis as the Department has done in other Title V permits.

Commented [Hilcorp-245]: Correct grammatical error.

Commented [Hilcorp-246]: Requested change is intended to add clarity.

Factual Basis: These conditions incorporate NSPS Subpart GG NOx emission and sulfur compound limits. The Permittee may not allow equipment to violate these standards.

NOx Standard: For a turbine subject to 40 C.F.R. 60.332, the NOx standard is determined by the following equation:

$$STD_{NOX} = 0.015(14.4 / Y) + F$$

where,

STD_{NOX} = allowable NOx emissions (percent by volume at 15 percent oxygen and on a dry basis)

Y = manufacturer's maximum rated heat input (kJ/W-hr), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the affected stationary source. The value of Y shall not exceed 14.4 kJ/W-hr

F = NOx emissions allowance for fuel bound nitrogen, percent by volume, assumed to be zero for Alaska gaseous fuels.

Based on the manufacturer's heat rating at manufacturer's rated peak load, and assuming fuel bound nitrogen of zero, the NOx standard is 165 ppmv for EU IDs 1 and 2, and 181 ppmv for EU IDs 3 and 4.

SO₂ Standard: The Permittee is required to comply with one of the following sulfur requirements for EU IDs 1 – 4 (turbines):

- (1) do not cause or allow SO₂ emission in excess of 0.015 percent by volume, at 15 percent O₂ and on a dry basis (150 ppmv), or
- (2) do not cause or allow the sulfur content for the fuel burned in EU IDs 1 – 4 to exceed 0.8 percent by weight.

The Permittee has elected to comply with the SO₂ standard by not exceeding 0.8 percent by weight sulfur content of the fuel burned in the affected emissions units.

Exemptions: Gas turbines exempted from NSPS Subpart GG emission standards are as provided in 40 C.F.R. 60.332(e) – (l).

Condition 29.1 –through 29.3, NOx Monitoring, Recordkeeping, and Reporting

Legal Basis: Periodic monitoring, and associated recordkeeping, and reporting are included in ~~condition~~ Conditions 29.1 through 29.3 for all turbines that normally operate for greater than 400 hours in a 12 month period. This additional monitoring is necessary to ensure that turbine emissions comply with the applicable BACT limit in Condition 18.1 and the NSPS Subpart GG NOx standard in Condition 29 and is required under 40 C.F.R. 71.6(a)(3) as the subpart because Subpart GG does not contain MR&R sufficient for an operating permit.

Fuel-bound nitrogen monitoring is clarified in the latest version of NSPS Subpart GG to be required only when the fuel-bound nitrogen content has been used as a basis for relaxing the NOx emission standard of the subpart per 40 C.F.R. 60.332(a)(3) & (4) and §60.334(h)(2). Therefore, fuel-bound nitrogen monitoring is not required even without an EPA waiver.

Commented [Hilcorp-247]: This statement is now valid under Subpart GG for all gaseous fuels.

Commented [Hilcorp-248]: This proposed change is intended to clarify this sentence.

Factual Basis: The Department does not have enough information to make categorical determinations that certain types of turbines, or turbines with emission test results below a certain percentage of the BACT or NSPS Subpart GG NOx emission limit will inherently comply with the Subpart GG limits at all times and will never need additional testing. After a sufficient body of NOx data is gathered under monitoring conditions for compliance with the BACT and 40 C.F.R. 60 NSPS Subpart GG limits, the Department may find that it has enough information to make such categorical determinations. In that event, the Department would revise the NOx monitoring conditions. The Department may determine that to assure compliance it is necessary to retain or increase the current monitoring frequency.

These conditions do not include the initial NSPS performance test requirements as the Subpart A conditions cover these requirements. If a ~~An~~ existing or new turbine under this permit that is still subject to the performance test requirement of 40 C.F.R. 60.8, such requirement is covered under the Subpart A related conditions.

The intent of these conditions is that turbines or groups of turbines be routinely tested on no less than a 5-year cycle. EU IDs 3 and 4 are also subject to NOx BACT limit of 25 ppmv and 6.2 lb/hr in condition Condition 18.145.1. Since the NOx BACT limit is more stringent than the Subpart GG NOx limit, the Subpart GG limit will not be exceeded without exceeding the BACT limit. In order to streamline the NOx source testing requirements, the Department used the NOx BACT limit as a baseline trigger for EU IDs 3 and 4 rather than Subpart GG. If the most recent performance test on a turbine shows NOx emissions at less than or equal to 90 percent of the limits shown in condition Condition 29 (for EU IDs 1 and 2) and condition Condition 18.145.1 (for EU IDs 3 and 4), then periodic monitoring is required within a year of the effective date of the permit if a turbine operates 400 hours or more within a consecutive 12-month period (testing trigger event), or within a year of operating 400 hours or more within a consecutive 12-month period any time it has been more than 4 years since the latest performance test was completed. For clarification, the Department added a 6 month cut-off date for triggering source testing within 1 year after the permit effective date in accordance with Condition 29.1a(i)(A). The 6-month trigger is used to assess if a turbine typically operates 400 hours or more in a consecutive 12-month period and should, therefore, be required to complete a test within 1 year of the permit effective date if it has been greater than 4 years since the last test was completed, then periodic monitoring is required at the first applicable of three criteria: either within 5 years of the last performance test, or within a year of the issue date of the permit, or within a year of exceeding 400 hours of operation within a 12-month period. For clarification, the Department added a 6-month cut-off date for triggering source testing within 1 year after permit issue date in accordance with condition 29.1a(i)(B). The 6-month trigger identifies when condition 29.1a(i)(C) would be enacted to require source testing within 1 year of triggering 400 hours. This edit ensures that a unit would not appear to be out of compliance with condition 29.1a(i)(B) once it finally triggered condition 29.1a(i)(C).

If the most recent performance test showed operations at greater than 90 percent of the limits listed in condition Condition 29 (for EU IDs 1 and 2) and condition Condition 18.145.1 (for EU IDs 3 and 4), then periodic monitoring source testing is required every year until two consecutive tests show emissions at less than or equal to 90 percent of the limit.

The condition does not state how load must be measured. For some turbines it may be

Commented [Hilcorp-249]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-250]: Update to reflect the language used by the Department in other Title V permits and to be consistent with suggested revisions to the associated conditions.

possible to directly measure load as either mechanical or electrical output. For others, it may be necessary to calculate load indirectly based on measurements of other parameters. The Department is not attempting to dictate what method is most appropriate through the permit condition, but should evaluate the adequacy of methods of calculating load based on the load monitoring proposed by the Permittee.

Subpart GG defines “emergency gas turbine”¹⁴ and exempts turbines meeting that definition from the Subpart GG emission standards. Some turbines may be operated as standby equipment but not meet the definition of emergency turbine, so the Department has added a monitoring threshold of 400 hours per consecutive 12-month period. For turbines expected to operate less than 400 hours, the Department has also added recordkeeping for hours of operation. The Department does not intend to require the Permittee to operate a turbine solely for the purpose of testing.

Commented [Hilcorp-251]: Update the citation date or delete the phrase “effective 7/1/07” entirely. We do not believe the date is necessary since the introductory language on the permit cover page describes which version of the air rules are in play for this permit and, therefore, which Federal rules are adopted.

~~The condition~~Condition 29.1c(i) requires testing at a range of loads, consistent with the performance test requirements in NSPS Subpart GG at 40 C.F.R. 60.335(b)(2), that is, test within 5 percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the turbine, including the minimum point in the operating range and 90 to 100 percent of peak load, or at the highest achievable load point if 90-to-100 percent of peak load cannot be physically achieved in practice. If testing at these four loads is not reasonable, ~~the condition~~Condition 29.1c(i) allows the Permittee to propose to the Department what test loads will be reasonable and adequate, ~~and the Department will have the responsibility to make a finding on that proposal.~~ If EPA has already approved alternative test loads for the initial performance test, subsequent testing may be completed at the same approved loads if the circumstances at the time of the EPA approval are the Department would allow those test loads if the information that went into that decision were still representative of the turbine operation.

Commented [Hilcorp-252]: Update to reflect the language used by the Department in other Title V permits.

In ~~condition~~Condition 29.1b(ii)(C)(4), the Department considers “fuel type” to mean, for liquid fuels a type of fuel as described in an ASTM or similar fuel specification.

~~Load measurements or load calculations from load surrogate measurements are for one-hour periods. The intent is to match the averaging period for the test method. Method 20 identifies a number of traverse points that vary with the size of the stack. From these points the tester is to choose at least 8 points for NOx measurements. The time at each point is to be at least one minute plus the average response time of the instrument. The recorded value is the average steady state response. Presumably, the steady state response would exclude some or all of the response time of the instrument. Three runs are to be done at each test load.~~

Commented [Hilcorp-253]: Revise the first sentence of this paragraph to fully and accurately state the Subpart GG NOx source testing requirement found in 40 CFR 60.335(b)(2).

In addition, update the paragraph to reference the specific condition to which it applies and to reflect the provisions of that condition. Include with the update changing “If testing at these four loads is not reasonable...” to “If testing at four loads is not reasonable...” Subpart GG ultimately does not require testing at any four specific load points. In addition, testing at less than four loads can be done upon approval. This would make sense, for example, when testing a turbine with a limited or narrow operating range.

~~The three runs would represent 24 minutes of measurement time or more. A one-hour average load is, therefore, a reasonable approximation of a load period corresponding to the test method.~~

Commented [Hilcorp-254]: Hilcorp requests deletion of these paragraphs of the Factual Basis. (The Department has agreed to remove these paragraphs from other Title V permits.) Load can be calculated as an average during each test run. It does not have to encompass an hour. The average of the three test runs can be used to meet the recordkeeping requirement.

¹⁴ Emergency Gas Turbine means any stationary gas turbine that operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation, as defined in 40 C.F.R. 60.331(c), effective 7/1/07.

Also, the reference to Method 20 is outdated. Method 20 no longer requires sampling at a minimum of eight points. The new version of Method 20 refers back to Method 7E which allows sampling at a single point with no stratification or use of a multi-hole probe.

Conditions 30.1— ~~through~~ 30.4, SO₂ Monitoring, Recordkeeping, and Reporting

Applicability/Legal Basis: ~~This condition requires~~ These conditions require the Permittee to comply with NSPS Subpart GG SO₂ or fuel quality monitoring, record-keeping and reporting.

Factual Basis: Monitoring, recordkeeping, and reporting requirements for ~~this condition~~ these conditions are described in NSPS Subpart GG and have been referenced here. No additional monitoring outside of the Subpart GG requirements is necessary to ensure compliance with the NSPS SO₂ standard.

Monitoring: Condition 30.1 incorporates NSPS Subpart GG fuel sulfur monitoring requirements. Per ~~condition~~ Condition 30.1b and pursuant to 40 C.F.R. 60.334(h)(3) and §60.334(i), the ~~owner or operator~~ Permittee may elect not to monitor ~~or report~~ the total sulfur content of the gaseous fuel combusted ~~in the by affected~~ turbines if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 C.F.R. 60.331(u), regardless of whether an existing custom schedule approved by the Administrator requires such monitoring ~~and reporting~~. The Permittee has elected not to conduct sulfur monitoring as allowed under ~~condition~~ Condition 30.1b and submitted a certified statement to the Department indicating that the fuel gas combusted at the stationary source meets the definition of natural gas as defined ~~by § in 40 C.F.R. 60.331(u), pursuant to 40 C.F.R. 60.334(h)(3). Per 40 C.F.R. 60.334(i)(3)(i), a custom sulfur monitoring schedule under 60.334(i)(3)(ii)(A) is acceptable without prior Administrative approval.~~

Recordkeeping: The Permittee is required to maintain records of all sulfur monitoring data required by NSPS Subpart GG for five years as set out in 40 C.F.R. 71.6(a)(3)(ii)(B). This requirement is stated in ~~condition~~ Condition ~~68~~60.

Reporting: NSPS Subpart GG ~~SO₂-fuel sulfur~~ standard reporting requirements for turbines monitored under ~~condition~~ Condition 30.1a are incorporated in the permit in ~~condition~~ Condition 30.4.

For the purpose of the EEMSP reports and summary report required under 40 C.F.R. 60.7(c) and (d) and stated in Conditions 23 and 24, the Permittee is required to report as excess emissions any period, report daily periods during which the sulfur content of the fuel being fired in the turbine exceeds 0.8 percent.

As stated in ~~condition~~ Conditions 23; ~~and~~ 24; ~~and~~ 64, reports are to be submitted to the Department and EPA, and summarized in the operating report required under ~~condition~~ Condition 7365. However, per Conditions 30.1b and 30.4a(iii), and pursuant to 40 C.F.R. 60.334(h)(3) and §60.334(i), the Permittee may elect not to monitor or report the total sulfur content of a gaseous fuel combusted by affected emissions units if the fuel is demonstrated to meet the definition of natural gas under 40 C.F.R. 60.331(u), regardless of whether an existing custom schedule approved by the Administrator requires such monitoring and reporting.

In Condition 30.4, the Department requires that a copy of the results from the monitoring requirements in Condition 30.1 be included in the operating report required under Condition 73. State excess emissions and permit deviation reports are to be submitted in accordance with Condition 30.4c.

Commented [Hilcorp-255]: Update this section of the Statement of Basis to reflect the applicable language used by the Department in other Title V permits, including changes that more fully outline the options available to fulfill the required fuel gas sulfur monitoring and reporting.

Condition 31, NSPS Subpart IIII Requirements for EU IDs 24 and 25

Legal Basis: NSPS Subpart IIII applies to stationary compression ignition internal combustion engines (CI ICE) that commence construction, modification, or reconstruction after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 for non-fire pump engines and after July 1, 2006 for fire pump engines. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. Construction commenced on EU ID 24 in 2012 and on EU ID 25 in 2009 and they are not fire pump engines. They are subject to Subpart IIII under 40 C.F.R. 4200(a)(2)(i).

Engine EU IDs 24 and 25 are not required to burn ULSD fuel in order to comply with the provision in Subpart IIII at 40 C.F.R. 60.4207 because Cook Inlet oil & gas platforms are located in a remote area of Alaska, which is defined in 40 C.F.R. 60.4219 as an area that is not accessible by the Federal Aid Highway System and these engines are pre-2014 model year engines. (See 40 C.F.R. 60.4216(d).)

Factual Basis: Condition 31 incorporates NSPS Subpart IIII emission standards and associated MR&R applicable to EU IDs 24 and 25, which are model year 2013 and 2008 stationary non-emergency CI ICE, respectively, with a rating less than 3,000 hp (2,237 kW), a displacement less than 10 liters per cylinder and located in an area of Alaska not accessible by the Federal Aid Highway System (FAHS). The Permittee is required to comply by purchasing an engine certified to the emission standards in Table 6 of 40 C.F.R. 1039.102 (EPA Tier 4-interim engine rated at 261 kW) for EU ID 24 and in Table 3 to Appendix I to 40 C.F.R. 1039 (EPA Tier 3 engine rated at 373 kW) for EU ID 25. The Permittee is also required to install and configure the engine in accordance with the manufacturer's instructions. The Permittee must operate and maintain the stationary CI ICE according to the manufacturer's written instructions and change only those settings that are permitted by the manufacturer for the life of the engine.

Conditions-Condition 3231, NESHAPs (40 C.F.R. 63) Subpart A General Requirements for Source Categories

Legal Basis: The Department has incorporated by reference the NESHAPs (40 C.F.R. 63) requirements effective July 16, 2007, for specific industrial activities, as listed in 18 AAC 50.040(c).

Most sources-affected facilities subject to a Part 63 NESHAPs requirement are subject to Subpart A. Tyonek Platform is subject to NESHAPs 40 C.F.R. 63 Subpart HH (NESHAPs from Oil and Natural Gas Production Facilities) and Subpart ZZZZ (NESHAPs for RICE) and is, therefore, subject to the associated general provisions of Subpart A requirements as set out in the corresponding subparts 40 C.F.R. 63 Subparts HH (Appendix, Table 2) and ZZZZ (Table 8).

Factual Basis: Condition 32 requires compliance with the applicable provisions of NESHAP (40 C.F.R. 63) Subpart HH Table 2 and Subpart ZZZZ Table 8 which address the portions of 40 C.F.R. 63 Subpart A that could apply to emissions units affected by these Part 63 NESHAP rules. Subpart A contains the general requirements applicable to all affected facilities (sources) subject to NESHAPs. In general, the intent of NESHAPs is to regulate specific categories of stationary sources that emit or have the potential to emit one or more

Commented [Hilcorp-256]: We have proposed Legal and Factual Basis language for the proposed new permit condition added to the permit to address 40 CFR 60 Subpart IIII requirements applicable to EU IDs 24 and 25.

hazardous air pollutants.

Conditions 3332 and 34, NESHAP 40 C.F.R. 63 Subpart HH at an Area Source

Applicability Legal Basis: The Department has incorporated by reference the NESHAP requirements for specific industrial activities, as listed in 18 AAC 50.040(c). For area sources, NESHAP Subpart HH applies to the emissions of Hazardous Air Pollutants from Oil and Natural Gas Production Facilities for which the affected source includes each triethylene glycol (TEG) dehydration unit located at a facility that meets the criteria specified in 40 C.F.R. 63.760(a) [(40 C.F.R. 63.760(b)(2))]. The Tyonek Platform stationary source is an oil and natural gas production facility and is an area source of HAP emissions as described in the operating permit application. More specifically, the Tyonek Platform is an area source not located within a UA plus offset and UC boundary (as defined in 40 C.F.R. 63.761). EU IDs 40, 41, and 42 are existing TEG units with glycol process vents. This condition requires the Permittee to comply with 40 C.F.R. 63, Subpart HH for oil and natural gas production facilities.

Factual Basis: These conditions incorporate the NESHAP 40 C.F.R. 63, Subpart HH exemption criteria provided in 40 C.F.R. 63.764(e)(1) for certain affected TEG dehydration units located at area sources. The Tyonek Platform specifically qualifies for the exemption in §63.764(e)(1)(ii) because actual average benzene emissions from the process vents to the atmosphere are less than 0.90 megagram per year (Mg/yr) (i.e., 1 tpy). The Permittee shall maintain a record of the actual average emissions of benzene from the glycol dehydration units (EU IDs 40 – 42) vented to the atmosphere to demonstrate emissions are less than 0.90 megagram per year Mg/yr, as determined by the procedures specified in 40 C.F.R. 63.772(b)(2). In addition, a requirement to operate and maintain the affected sources (EU IDs 40 – 42) in a manner consistent with good air pollution control practices for minimizing emissions applies at all times as specified in 40 C.F.R. 63.764(j).

Conditions 35 through 41, Stationary Reciprocating Internal Combustion Engines (RICE) Subject to NESHAPs (40 C.F.R. 63) Subpart ZZZZ

Legal Basis: The Department has incorporated by reference the NESHAPs requirements for specific industrial activities, as listed in 18 AAC 50.040(c). NESHAP Subpart ZZZZ applies to any existing, new, or reconstructed stationary reciprocating internal combustion engines (RICE) located at a major or area source of HAP emissions, excluding stationary RICE units being tested at a stationary RICE test cell/stand. This stationary source is an area source of HAP emissions not accessible by the Federal Aid Highway System (FAHS) subject to the provisions of NESHAP Subpart ZZZZ under 40 C.F.R. 63.6590(a)(1)(iii) for existing RICE (EU IDs 8, 9, 20, 21, 28, 33, and 34) whose construction commenced before June 12, 2006 and under 40 C.F.R. 63.6590(c)(1) for new RICE (EU IDs 24 and 25).

Factual Basis: EU IDs 24 and 25 are new RICE (model year 2013 and 2008, respectively) located at an area source of HAP emissions. In accordance with 40 C.F.R. 63.6590(c)(1) and Condition 35 of this permit, these engines must meet the requirements of 40 C.F.R. 63 Subpart ZZZZ by meeting the requirements of 40 C.F.R. 60 Subpart IIII. EU IDs 8, 9, 20, 21, 28, 33, and 34 are designated as affected facilities subject to Subpart ZZZZ because they are existing stationary RICE located at an area source of HAP emissions.

Commented [Hilcorp-257]: Update to reflect the language used by the Department in other Title V permits, with enhancements to address 40 CFR 63 Subpart A as it pertains to both 40 CFR 63 Subpart HH and 40 CFR 63 Subpart ZZZZ.

Commented [Hilcorp-258]: Update to include additional information to describe and support the legal and factual basis of the Subpart HH conditions included in the permit more completely.

Conditions 36 through 38 include the applicable standards and MR&R requirements for the non-emergency, non-black start 4SRB spark ignition (SI) engines (EU IDs 8 and 9) that are not remote while Conditions 39 through 41 include all applicable standards and MR&R requirements for the non-emergency, non-black start compression ignition (CI) engines (EU IDs 20, 21, 28, 33, and 34).

The Cook Inlet is considered to be “inland waters” and, therefore, SI engines operating on platforms located in the Cook Inlet do not meet the definition at 40 C.F.R. 63.6675 of *remote stationary RICE* under NESHAP Subpart ZZZZ. As such, SI RICE EU IDs 8 & 9 at the stationary source must conduct initial and annual compliance demonstration source testing as required under 40 CFR 63.6630 and §6640(c) (Conditions 36.5 and 36.7). Note that not being accessible by the FAHS does not satisfy the definition of remote stationary RICE under Subpart ZZZZ (unlike NSPS Subpart IIII). The initial compliance demonstration source test required under Condition 36.5a was completed in December 2013 and the Notification of Compliance Status required under Condition 36.5c was submitted by letter dated February 10, 2014.

Because the Tyonek Platform is not accessible by the FAHS and pursuant to 40 C.F.R. 63.6603(b), the CI non-emergency engines are not subject to the emission limits in Table 2d of Subpart ZZZZ and are instead subject to the emissions management practices of Table 2d. In addition, the fuel sulfur requirements of 40 C.F.R. 63.6604 and the requirements of 40 C.F.R. 63.6a(g) do not apply.

Condition 42, Asbestos NESHAP

Legal Basis: The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. This condition ensures compliance with the applicable requirement in 18 AAC 50.040(b)(1) and (b)(2)(F). The asbestos demolition and renovation requirements apply if the Permittee engages in asbestos demolition or renovation.

Factual Basis: Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with these Federal regulations.

Condition 43, Protection of Stratospheric Ozone, 40 C.F.R. 82

Legal Basis: Condition 43 presents the requirements of 40 C.F.R. 82, adopted by reference under 18 AAC 50.040(d), that apply to this stationary source.

Condition 43.1 requires the Permittee to comply with the standards for recycling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F, which apply if the Permittee uses certain refrigerants and engages in the recycling or disposal of certain refrigerants.

The prohibitions in Conditions 43.2 and 43.3 apply to all stationary sources that use halon for extinguishing fires and as an inert gas to reduce explosion risk. The condition prohibits the Permittee from causing or allowing violations of these prohibitions. The stationary source uses halon and is, therefore, subject to the Federal regulations contained in 40 C.F.R. 82 Subparts G and H.

Commented [Hilcorp-259]: Proposed Statement of Basis language for NESHAP Subpart ZZZZ. This language reflects the applicable portions of language used by the Department in other Title V permits. It also includes a high-level discussion documenting why EU IDs 8 and 9 do not qualify as remote stationary RICE.

Factual Basis: The regulations found in 40 C.F.R. 82 Subpart F regarding refrigerant recycling and disposal include adequate monitoring and reporting requirements. The Permittee is not currently engaged in such activity, so simply citing the regulatory requirements is sufficient to ensure compliance with this Federal regulation. This condition also incorporates the applicable halon prohibitions from 40 C.F.R. 82, Subparts G and H. The Permittee may not cause or allow violations of these prohibitions.

Commented [Hilcorp-260]: Update to match the layout, permit location, and language of other Title V permits.

Condition 44, NESHAPs Applicability Determinations

Legal Basis: The Permittee has the responsibility to determine if specific Federal regulations apply to its stationary sources.

Factual Basis: The Permittee has conducted an analysis of the stationary source and determined that it is not a major HAPs stationary source based on emissions. This condition requires the Permittee to notify the Administrator and the Department if the source becomes an affected facility subject to any NESHAP standards, and to comply with any NESHAP standard that becomes applicable to the stationary source by the compliance date established in the applicable subpart.

Commented [Hilcorp-261]: We have moved this condition to match the layout and permit location used by the Department in other Title V permits.

We have proposed language here that we believe improves upon and clarifies the Statement of Basis language for this condition compared to the language typically used by the Department in other Title V permits.

Conditions 4533 - 4735, Standard Terms and Conditions

Legal Basis: These are standard conditions required under 18 AAC 50.345(a) and (c)-(g) for all operating permits. This provision is incorporated in the federally-approved Alaska operating permit program of November 30, 2001, as updated effective November 9, 2008.

Factual Basis: These are standard permit conditions that apply to all permits.

Commented [Hilcorp-262]: Update to reflect the language used by the Department in other Title V permits.

Condition 4836, Administration Fees

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.400-405-403 as derived from AS 46.14.130. This condition requires the Permittee, owner, or operator to pay administration fees as set out in regulation. Paying administration fees is required as part of obtaining and holding a permit with the Department or as a fee for a Department action.

Factual Basis: The owner or operator of a stationary source who is required to apply for a permit under AS 46.14.130 shall pay to the Department all assessed permit administration fees. The regulations in 18 AAC 50.400-403-405 specify the amount, payment period, and the frequency of fees applicable to a permit action.

Commented [Hilcorp-263]: Remove the references to 18 AAC 50.405, which has been repealed.

Conditions 4937 - 5038, Emission Fees

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.410-420. The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to re-compute assessable emissions.

Factual Basis: These emission fee conditions are ~~standard condition~~ Standard Permit Condition I under 18 AAC 50.346(b) adopted pursuant to AS 46.14.010(d). The Department determined that these standard conditions adequately meet the requirements of AS 46.14.250. No emission unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these

Commented [Hilcorp-264]: Correction of terminology and capitalization.

Commented [Hilcorp-265]: Correction to rule citation.

requirements. Therefore, the Department concluded that the standard conditions meet the requirements of AS 46.14.250.

These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The ~~default~~ assessable emissions are the lesser of the stationary source's potential or projected emissions of each air pollutant authorized by the permit (AS 46.14.250(h)(1)(A)).

The conditions allow the Permittee to calculate **actual** annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air pollutant. Therefore, fees based on actual emissions must ~~also~~ be paid on any pollutant emitted whether or not the permit contains any limitation of that pollutant.

This standard condition specifies that, unless otherwise approved by the Department, calculations of assessable ~~emission~~ emissions based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable ~~emission~~ emissions are based on the previous year, the Department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match.

Condition ~~51.39~~, Good Air Pollution Control Practice

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(5) and applies to all emissions units, **except** those subject to ~~federal~~ Federal emission standards, those subject to continuous emission or parametric monitoring, and ~~for~~ insignificant emissions units. For this stationary source, this condition does not apply to EU IDs 1 through 4, 8, 9, 20, 21, 24, 25, 28, 33, 34, and 40 through 42, all of which are subject to Federal good air pollution control practice standards and some of which are also insignificant emissions units based on actual emissions. This condition also does not apply to EU ID 37, which is an insignificant emissions unit.

Factual Basis: The condition requires the Permittee to comply with good air pollution control practices for all emission units (except insignificant emission units). The Department adopted this condition under 18 AAC 50.346(b) as Standard Permit Condition VI pursuant to AS 46.14.010(e).

Maintaining and operating equipment in good working order is fundamental to preventing unnecessary or excess emissions. Standard conditions for monitoring compliance with emission standards are based on the assumption that good maintenance is performed. Without appropriate maintenance, equipment can deteriorate more quickly than with appropriate maintenance. If appropriate maintenance is not applied to the equipment, the Department may have to apply more frequent periodic monitoring requirements (unless the monitoring is already continuous) to ensure that the monitoring results are representative of actual emissions.

The Permittee is required to keep maintenance records to show that proper maintenance procedures were followed, and to make the records available to the Department. The Department may use these records as a trigger for requesting source testing if the records show that maintenance has been deferred. Records kept in accordance with Condition 51.2

Commented [Hilcorp-266]: Update to reflect the language used by the Department in other Title V permits, including a correction to the rule citation. All of AS 46.14.250(h)(1) is pertinent to this sentence, not just AS 46.14.250(h)(1)(A).

Commented [Hilcorp-267]: Suggested revision.

Commented [Hilcorp-268]: Correct typographical errors.

Commented [Hilcorp-269]: 1) Update to reflect the capitalization used by the Department in other Title V permits. 2) Make changes to clarify the Legal Basis, including the addition of language to specifically state why the condition does not apply to certain emissions units at the stationary source.

Commented [Hilcorp-270]: Update to reflect the language used by the Department in other Title V permits.

for units previously subject to GAPCP need to be maintained for 5 years in accordance with Condition 68 even if a unit is no longer subject to this condition.

Condition 5240, Dilution

Legal Basis: This condition prohibits the Permittee from using dilution as an emission control strategy as set out in 18 AAC 50.045(a). This State regulation applies to the Permittee because the Permittee is subject to emission standards in 18 AAC 50.

Factual Basis: The condition prohibits the Permittee from diluting emissions as a means of compliance with any standard in 18 AAC 50.

Condition 5341, Reasonable Precautions to Prevent Fugitive Dust

Legal Basis: This condition requires the Permittee to use reasonable precautions when handling, storing or transporting bulk materials or engineering engaging in an industrial activity in accordance with the applicable requirement in 18 AAC 50.045(d). Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the stationary source.

Factual Basis: The condition requires the Permittee to comply with 18 AAC 50.045(d), and take reasonable action to prevent particulate matter (PM) from being emitted into the ambient air. Since the stationary source is not a significant source of fugitive PM emissions, there is no need for enhanced monitoring or recordkeeping beyond the standard permit condition.

Condition 5442, Stack Injection

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.055(g)045(e)-(f). It prohibits the Permittee from releasing materials other than process emissions, products of combustion, or materials introduced to control pollutant emissions from a stack (i.e., disposing of material by injecting it into a stack). Stack injection requirements apply to stacks at a the stationary source because the stationary source contains a stack or source constructed or modified after November 1, 1982.

Factual Basis: No specific monitoring for this condition is practical. Compliance is ensured by inspections, because the emission unit or stack would need to be modified to accommodate stack injection.

Condition 5543, Air Pollution Prohibited

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.110. The condition prohibits the Permittee from causing any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. Air Pollution Prohibited requirements apply to the stationary source because the stationary source will have emissions.

Factual Basis: This condition describes how to monitor, record, and report prohibited air pollution. While the other permit conditions and emissions limitation should ensure compliance with this condition, unforeseen emission impacts can cause violations of this

Commented [Hilcorp-271]: The Department has included this language in other Title V permits. We agree that it is reasonable to include this clarification in the Statement of Basis.

Commented [Hilcorp-272]: We believe the language pertaining to bulk material handling, which comes from the Department's "standard Title V permit template", is not applicable to an offshore oil & gas platform. There are no activities at the platform that might be a significant source of fugitive dust. Therefore, we have deleted text that is not reasonably applicable to the stationary source.

We have also corrected a typographical error.

Commented [Hilcorp-273]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-274]: Update to reflect the language used by the Department in other Title V permits, including a correction to the rule citation.

standard. These violations would go undetected except for complaints from affected persons. Therefore, to monitor compliance, the Permittee must monitor and respond to complaints.

ADEC adopted this standard ~~permit~~ condition into 18 AAC 50.346(a) pursuant to AS 46.14.010(~~de~~). The Department determined that this condition adequately meets the requirements of 40 C.F.R. 71.6(a)(3). No emissions unit or stationary source operational or compliance factors indicate that unit-specific or stationary-source specific conditions would better meet these requirements. ~~Therefore, the Department concluded that the standard condition meets the requirements of 40 C.F.R. 71.6(a)(3).~~

The Permittee is required to report any complaints and injurious emissions. The Permittee must keep records of the date, time, and nature of all complaints received and summary of the investigation and corrective actions undertaken for these complaints. ~~The Permittee is also required and~~ to submit copies of these records upon request of the Department.

Condition ~~5644~~, Technology-Based Emission Standard

Legal Basis: The Permittee is required to take reasonable steps to minimize emissions if certain activity causes an exceedance of any technology-based emission standard in this permit. This condition ensures compliance with the applicable requirement in 18 AAC 50.235. Technology Based Emission Standard requirements apply to the stationary source because the stationary source contains equipment subject to a technology-based emission standard, such as BACT, MACT, LAER, NSPS or other “technologically feasible” determinations.

Factual Basis: The conditions of this permit list applicable technology-based emission standards and require excess emission reporting for each standard in accordance with ~~condition~~Condition 7264. Excess emission reporting under ~~condition~~Condition 7264 requires information on the steps taken to minimize emissions. Monitoring of compliance for this condition consists of the report required under ~~condition~~Condition 7264.

Condition ~~45~~, Asbestos-NESHAP

Legal Basis: ~~— The condition requires the Permittee to comply with asbestos demolition or renovation requirements in 40 C.F.R. 61, Subpart M. This condition ensures compliance with the applicable requirement in 18 AAC 50.040(b)(1) and (2)(F). The asbestos demolition and renovation requirements apply if the Permittee engages in asbestos demolition or renovation.~~

Factual Basis: ~~— Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply eiting the regulatory requirements is sufficient to ensure compliance with these federal regulations.~~

Condition ~~46~~, Refrigerant Reeyeling and Disposal

Legal Basis: ~~— This condition ensures compliance with the applicable requirement in 18 AAC 50.040(d) and applies if the Permittee engages in the recycling or disposal of certain refrigerants. The condition requires the Permittee to comply with the standards for reeyeling and emission reduction of refrigerants set forth in 40 C.F.R. 82, Subpart F, which will apply if the Permittee uses certain refrigerants.~~

Commented [Hilcorp-275]: Update to reflect the language used by the Department in other Title V permits, including a correction to a rule citation.

Factual Basis: — Because these regulations include adequate monitoring and reporting requirements and because the Permittee is not currently engaged in such activity, simply citing the regulatory requirements is sufficient to ensure compliance with this federal regulation.

Condition 47, NESHAPs Applicability Determinations

Legal Basis: — This condition requires the Permittee to keep and make available to the Department copies of the major stationary source determination and applicability of specific federal regulations that may apply to its stationary sources.

Factual Basis: — The Permittee has conducted an analysis of the stationary source and determined that it is not a major HAPs stationary source based on emissions. This condition requires the Permittee to keep and make available to the Department copies of the major stationary source determination.

Conditions 48–49, Halon Prohibitions

Legal Basis: — These prohibitions apply to all stationary sources that use halon for fire extinguishing and explosion inerting. The condition prohibits the Permittee from causing or allowing violations of these prohibitions. The stationary source uses halon and is therefore subject to the federal regulations contained in 40 C.F.R. 82.

Factual Basis: — These conditions incorporate applicable 40 C.F.R. 82 requirements.

Condition 5750, Open Burning

Legal Basis: The open burning state regulation in 18 AAC 50.065 applies to the Permittee if the Permittee conducts open burning at the stationary source. The Permittee ~~certified~~certifies that they do not conduct open burning at the stationary source.

Factual Basis: No specific monitoring is required for this condition.

Condition 5854, Requested Source Tests

Legal Basis: The Permittee is required to conduct source tests as requested by the Department. The Department adopted this condition under 18 AAC 50.345(k) as part of its operating permit program approved by EPA November 30, 2001.

Factual Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.220(a) and applies because this is a standard condition to be included in all operating permits. Monitoring consists of conducting the requested source test.

Conditions 5952 - 6154, Operating Conditions, Reference Test Methods, Excess Air Requirements

Legal Basis: ~~This condition ensures~~These conditions ensure compliance with the applicable requirement in 18 AAC 50.220(b) and ~~applies~~apply because the Permittee is required ~~by this permit~~to conduct source tests ~~by this permit~~. The Permittee is required to conduct source tests ~~in the manner as set out in condition~~Conditions 5952 through 6154.

Factual Basis: These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with ~~condition~~Conditions 5952 through 6154 consists of the test reports required by ~~condition~~Condition 6659.

Commented [Hilcorp-276]: The basis for these conditions has been moved to match the layout and location that the Department has used in other Title V permits.

Commented [Hilcorp-277]: Suggested change.

Commented [Hilcorp-278]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-279]: Correct a grammatical error.

Condition ~~6255~~, Test Exemption

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.345(a) and applies when the ~~source-emissions unit~~ exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), ~~amended May 3, 2002~~, the requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

Commented [Hilcorp-280]: Update to reflect the language used by the Department in other Title V permits.

Conditions ~~6356~~ - ~~6659~~, Test Deadline Extension, Test Plans, Notifications and Reports

Legal Basis: ~~This condition ensures~~ These conditions ensure compliance with the applicable requirement in 18 AAC 50.345(l) - (o) and ~~applies-apply~~ because the Permittee is required ~~by this permit~~ to conduct source test ~~by this permit~~.

Factual Basis: Standard conditions 18 AAC 50.345(l) - (o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with ~~this condition~~ these conditions.

Commented [Hilcorp-281]: Update to reflect the language used by the Department in other Title V permits.

Condition 67, Particulate Matter (PM) Calculations

Legal Basis: This condition requires the Permittee to reduce particulate matter data in accordance with 18 AAC 50.220(f). It applies when the Permittee tests for compliance with the PM standards in 18 AAC 50.055.

Factual Basis: The condition incorporates a regulatory requirement for PM source tests. This condition supplements specific monitoring requirements stated elsewhere in this permit.

Commented [Hilcorp-282]: Insert Statement of Basis language here for the Particulate Matter Calculations condition to be added to the permit. Our proposed language reflects the language used by the Department in other Title V permits.

Condition ~~6860~~, Recordkeeping Requirements

Legal Basis: Applies because the Permittee is required by the permit to keep records.

Factual Basis: The condition restates the regulatory requirements for recordkeeping, and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide ~~adequate an~~ evidence of compliance with this requirement.

Commented [Hilcorp-283]: Update to reflect the language used by the Department in other Title V permits.

Condition ~~6964~~, Certification

Legal Basis: All operating permits must contain a requirement to certify permit applications, reports, affirmations, and compliance certifications, per 18 AAC 50.345(j) and 18 AAC 50.205. Both requirements are part of the State Implementation Plan (SIP) approved by EPA. This condition requires the Permittee to comply with the certification requirement in 18 AAC 50.205 and applies to all Permittees under EPA's approved operating permit program of November 30, 2001.

Factual Basis: The Department used the language in SPC XVII, adopted by reference under 18 AAC 50.346(b)(10), for the permit condition. The requirement in 18 AAC 50.345(j) is a standard condition that must be included in each operating permit, as specified in 18 AAC 50.345(a). 18 AAC 50.345(j) allows the excess emissions reports to be certified with the operating report. However, the Department reminds the Permittee that excess emissions reports must be submitted according to the applicable deadline given in Condition 72 and must not be withheld from the Department until the deadline for submittal of an

Commented [Hilcorp-284]: Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition XVII, except include a reference to 18 AAC 50.205 in the first sentence of the Legal Basis. The Department inadvertently removed this reference from the Legal Basis when it was revised in July 2020.

operating report. This condition supplements the reporting requirements of this permit. The certification statement through electronic signature and options for submittal provide paperless options for reporting without compelling Permittees to any specific means of submission. This standard condition is required in all operating permits under 18 AAC 50.345(j). This condition requires the Permittee to certify all reports submitted to the Department. To ease the certification burden on the Permittee, the condition allows the excess emission reports to be certified with the stationary source report, even though it must still be submitted more frequently than the stationary source operating report. This condition supplements the reporting requirements of this permit.

Condition 7062, Submittals

Legal Basis: This condition applies because the Permittee is required to send reports to the Department and supplements the standard reporting and notification requirements of this permit. This condition requires the Permittee to comply with standardized reporting requirement in 18 AAC 50.326(j) and applies because the Permittee is required to send reports to the Department.

Factual Basis: The Department used the language in SPC XVII, adopted by reference under 18 AAC 50.346(b)(10), for the permit condition. This condition lists the Department's appropriate address for reports and written notices. This condition states that the Department requires one certified copy of submitted reports (except as otherwise required by the Department or other conditions of the permit) and provides an allowance for either electronic or hard copy document submittals. The condition also directs the Permittee to refer to the submission instructions on the Department's Standard Permit Conditions webpage for additional information regarding document submittals (e.g., the appropriate Department address). This condition requires the Permittee to send submittals to the address specified in this condition. Receipt of the submittal at the correct Department office is sufficient monitoring for this condition. This condition supplements the reporting requirements of this permit.

Condition 7163, Information Requests

Legal Basis: This condition requires the Permittee to submit requested information to the Department. This is a standard condition from 18 AAC 50.345(i) of the State under the federally-approved State operating permit program effective November 30, 2001.

Factual Basis: This condition incorporates a standard condition in regulation, which requires the Permittee to submit information requested by the Department. This condition requires the Permittee to submit requested information to the Department. Monitoring consists of receipt of the requested information.

Condition 7264, Excess Emission and Permit Deviation Reports

Legal Basis: This condition requires the Permittee to comply with the applicable requirement in 18 AAC 50.235(a)(2) and 18 AAC 50.240(c). Also, the Permittee is required to notify the Department when emissions or operations deviate from the requirements of the permit.

Factual Basis: This condition satisfies two state-State regulations related to excess emissions: the technology-based emission standard regulation and the excess emission

Commented [Hilcorp-285]: Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition XVII.

Commented [Hilcorp-286]: Update the Legal Basis and the Factual Basis to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-287]: Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition III.

regulation. Although there are some differences between the regulations, the condition satisfies the requirements of each regulation.

The Department used the language in SPC III, adopted by reference under 18 AAC 50.346(b)(2), for the permit condition. The Department adopted this condition as Standard Operating Permit Condition III under 18 AAC 50.346(e) pursuant to AS 46.14.010(d). The Department determined that this standard condition adequately meet the requirements of 40 C.F.R. 71.6(a)(3). No emission unit or stationary source operational or compliance factors indicate that unit specific or stationary source specific conditions would better meet these requirements. Therefore, the Department concluded that the standard conditions meet the requirements of 40 C.F.R. 71.6(a)(3).

Section 12, Notification Form

The Department used the notification form in SPC IV, adopted by reference under 18 AAC 50.346(b)(3), for the notification requirements (see Section 12). The Department modified the notification form, deviating from Standard Permit Condition IV, to more adequately meet the requirements of Chapter 50, Air Quality Control. The modification consisted of correcting typos and moving failure to monitor/report and recordkeeping to the permit deviations Section 2.

Condition 7365, Operating Reports

Legal Basis: The condition specifies the reporting requirements required by 40 C.F.R. 71.6(a)(3)(iii)(A), which the Department has adopted by reference under 18 AAC 50.040(j)(4). This condition ensures compliance with the applicable requirement in 18 AAC 50.346(b)(6) and applies to all permits.

Factual Basis: The Department used the language in SPC VII, adopted by reference under 18 AAC 50.346(b)(6), for the permit condition. The condition restates the requirements for reports listed in regulation. The condition supplements the specific reporting requirements elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition.

For renewed and revised permits the condition specifies that for the transition periods between an expiring permit and a renewed or revised permit the Permittee shall ensure that there is date-to-date continuity between the expired permit and the renewed or revised permit such that the Permittee reports against the permit terms and conditions of the permit that was in effect during those partial date periods of the transition. No format is specified. The Permittee may provide one report accounting for each permit term or condition in the expired permit and the effective (renewed or revised) permit at that time. Alternatively, the Permittee may choose to provide two reports – one accounting for reporting elements of permit terms and conditions from the end date of the previous operating report until the date of expiration of the old permit, and a second operating report accounting for reporting elements of terms and conditions in effect from the effective date of the renewed or revised permit until the end of the reporting period.

The Department modified Standard Permit Condition VII to allow quarterly reporting. In addition, it was modified to clarify reporting for transition periods between an expiring permit and a renewal permit. The changes ensure that the Permittee reports against the

Commented [Hilcorp-288]: 1) Update the Legal Basis and the Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition VII, except make a slight revision as noted in 2), below.

2) The provisions of this condition apply equally to a permit that has been revised during the reporting period as well as to a permit that has been renewed. Our proposed revisions to the Factual Basis for this condition make this clear.

permit terms and conditions of the permit that was in effect during those partial date periods of the transition. No format is specified. The Permittee may provide one report accounting for each permit term or condition and the effective permit at that time. The Permittee may choose to provide two reports: the first report accounting for reporting elements of permit terms and conditions from the end date of the previous operating report until the date of expiration of the old permit, and a second operating report accounting for reporting elements of terms and conditions in effect from the effective date of the renewal permit until the end of the reporting period.

The Department further modified this condition to allow the Permittee to submit one of the required two copies of the report electronically in lieu of paper. This change more adequately meets the requirements of 18 AAC 50 and agency needs provided the electronic version is compatible with ADEC software, as the Department can more efficiently distribute the electronic copy to staff in other locations.

A final change was inserted to ensure that permit deviation or excess emissions notices provided as part of condition 64 were also reported under this condition.

The Department adopted these changes into revised standard conditions on November 9, 2008.

Condition 7466, Annual Compliance Certification

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.040(j)(4) and applies to all Permittees.

Factual Basis: This condition specifies the periodic compliance certification requirements, and specifies a due date for the annual compliance certification. Each annual certification provides ~~The reports themselves provide~~ monitoring for compliance with this condition.

Condition 74.266-2 provides clarification of transition periods between an expiring permit and a renewal-renewed or revised permit to ensure that the Permittee certifies compliance with the permit terms and conditions of the permit that were in effect during those partial date periods involved in the transition. No format is specified. ~~the~~ The Permittee may provide one report certifying compliance with each permit term or condition for each of the effective permits during the certification period and the effective permit at that time, or may ~~choose~~ choose to provide two reports – one certifying compliance with permit terms and conditions from January 1 until the date of expiration of the old permit, and a second report certifying compliance with terms and conditions in effect from the effective date of the renewal-renewed or revised permit until December 31.

The Permittee is required to submit an annual compliance certification report to the Department. The Permittee may submit the report electronically at their discretion. Electronic submission meets the requirements of 18 AAC 50 and allows for more efficient distribution of the certification report to staff in other locations. The Permittee is also required to submit one copy of the annual compliance certification report to EPA. ~~This condition was further modified to allow the Permittee to submit one of the required two copies in electronic format. This change more adequately meets the requirements of 18 AAC 50 and agency needs, as the Department can more efficiently distribute the electronic copy to staff in other locations.~~

Commented [Hilcorp-289]: Update to reflect the language used by the Department in other Title V permits, except we propose to slightly modify the second paragraph of the Factual Basis to address the fact that the provisions of this condition apply equally to a permit that has been revised as well as to a permit that has been renewed. Our proposed revisions to the Factual Basis for this condition make this clear.

Condition 7567, NSPS and NESHAP Reports

Legal Basis: The Permittee is required to provide the ~~federal administrator and~~ Department a copy of each ~~emission unit~~ report ~~submitted to EPA~~ for units subject to NSPS or NESHAP ~~federal~~ Federal regulations under 18 AAC 50.326(j)(4). ~~For those notices and reports submitted through EPA's on-line reporting system, CDX-CEDRI, the Permittee is not required to submit a duplicate copy to the Department, as Department staff receive electronic notice and have access to EPA's on-line reporting system for compliance reviews.~~ 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: The condition supplements the specific reporting requirements in 40 C.F.R. 60 ~~and~~ 40 C.F.R. 61, ~~and~~ 40 C.F.R. 63. The reports themselves provide monitoring for compliance with this condition.

Condition 76, Emission Inventory Reporting

Legal Basis: This condition requires the Permittee to submit emissions data to the State so the State is able to satisfy the Federal requirement that applies to the State to submit emission inventory data from point sources to the EPA as required under 40 C.F.R. 51.15 and 51.321. The emission inventory requirement applies to sources defined as point sources in 40 C.F.R. 51.50. The State must report emissions data as described in 40 C.F.R. 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A to EPA.

Factual Basis: The Department used the language in SPC XV, as adopted by reference under 18 AAC 50.346(b)(8), for the permit condition, excluding provisions that are not applicable to the Alpine Central Facility (e.g., provisions that apply to stationary sources located in non-attainment areas).

The emission inventory data is due to EPA 12 months after the end of the reporting year (40 C.F.R. 51.30(a)(1) and (b)(1)).

Permittees have until April 30th to compile and submit the data to the Department. To expedite the Department's process of transferring data into EPA's electronic reporting system, the Department encourages Permittees to submit the emission inventory through the Department's electronic emission inventory submission system in the Permittee Portal on the Department's Air Online Services webpage <<https://dec.alaska.gov/applications/air/airtoolsweb>>. A myAlaska account and profile are needed to gain access to the Permittee Portal. Other options are to submit the emission inventory via mail, email, or fax.

Detailed instructions on completing and submitting the emission inventory and the report form are available at <https://dec.alaska.gov/air/air-permit/standard-conditions/standard-conditions-xv-and-xvi-submission-instructions/>. The emission inventory instructions and report form may also be obtained by contacting the Department.

To ensure that the Department's electronic system reports complete information to the National Emissions Inventory, Title V stationary sources are required to submit with each report emissions data described in 40 C.F.R. 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A, as applicable. Title V stationary sources with potential annual emissions greater than or equal to any of the emission thresholds shown in

Commented [Hilcorp-290]: Our proposed revisions reflect the actual requirement of this permit condition and match the language used by the Department in other Title V permits.

Commented [Hilcorp-291]: Insert Statement of Basis language here for the Emission Inventory Reporting condition to be added to the permit. Our proposed language matches the bases that accompany the current version of Standard Permit Condition XV with a caveat about excluding parts of the SPC that do not apply to the Tyonek Platform. Also, exclude from the bases the discussion that pertains to stationary sources located in non-attainment areas since that is not pertinent to the Tyonek Platform.

Condition 76.1 for Type A (large) sources, as listed in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A, are required to report emission inventory data every year for the previous calendar year (also known as the inventory year). For triennial inventory years, Type A sources only need to submit one report, not both an annual report and a separate triennial report.

Title V stationary sources with potential annual emissions greater than or equal to any of the emission thresholds for Type B (small) sources shown in Condition 76.2 (for attainment and unclassifiable areas), as listed in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A, are required to report emission inventory data every third year (i.e., triennially) for the previous inventory year

Tyonek Platform is a Type B source, so the emission inventory report is due every third year.

Condition 77, Permit Applications and Submittals

Legal Basis: 40 C.F.R. 71.10(d)(1), adopted by the Department under 18 AAC 50.040(j)(7), requires submission of a copy of each permit application to EPA.

Factual Basis: The Department used the language in Standard Permit Condition XIV, adopted by reference under 18 AAC 50.346(b)(7), for the permit condition. The condition directs the applicant to send a copy of each application for modification or renewal of this permit to the EPA. The information may be submitted in electronic format, if practicable. This condition shifts the burden of compliance with 40 C.F.R. 71.10(d)(1) from the Department to the Permittee as allowed under 40 C.F.R. 71.10(d)(1).

Commented [Hilcorp-292]: Insert a Legal Basis and Factual Basis to match the language used by the Department in the July 22, 2020 revision of Standard Permit Condition XIV.

Conditions 7868 - 8070, Permit Changes and Revisions Requirements

Legal Basis: The Permittee is obligated to notify the Department and EPA of certain off-permit source changes and operational changes under 18 AAC 50.326(j)(4). 40 C.F.R. 71.6(a)(10), (12), and (13) incorporated by reference under 18 AAC 50.040(j) require these provisions within this permit. 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: These are conditions are required in 40 C.F.R. 71.6 for all operating permits to allow changes within a permitted stationary source without requiring a permit revision. The Permittee did not request trading of emission increases and decreases as described in 71.6(a)(13)(iii); therefore, language addressing these provisions has not been included in this permit.

Commented [Hilcorp-293]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-294]: Correct rule citation.

Condition 8174, Permit Renewal

Legal Basis: The Permittee must submit a timely and complete operating permit renewal application if the Permittee intends to continue source operations in accordance with the operating permit program under 18 AAC 50.326(j)(3). The obligations for a timely and complete operating permit application are set out in 40 C.F.R. 71.5 incorporated by reference in 18 AAC 50.040(j)(3). 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: In accordance with AS 46.14.230(a), this operating permit is issued for a fixed term of five years after the date of issuance, unless a shorter term is requested by the permit applicant. The Permittee is required to submit an application for permit renewal by

Commented [Hilcorp-295]: Update to reflect the language used by the Department in other Title V permits.

Commented [Hilcorp-296]: Correct grammatical error.

the specific dates applicable to the stationary source as listed in this condition. As stated in 40 C.F.R. 71.5(a)(1)(iii), submission for a permit renewal application is considered timely if it is submitted at least six months but no more than eighteen months prior to expiration of the operating permit. According to 40 C.F.R. 71.5(a)(2), a complete renewal application is one that provides all information required pursuant to 40 C.F.R. 71.5(c) and must remit payment of fees owed under the fee schedule established pursuant to 18 AAC 50.400. 40 C.F.R. 71.7(b) states that if a source submits a timely and complete application for permit issuance (including renewal), the source's failure to have a permit is not a violation until the permitting authority takes final action on the permit application.

Commented [Hilcorp-297]: Correct typographical error.

Therefore, for as long as an application has been submitted within the timeframe allowed under 40 C.F.R. 71.5(a)(1)(iii), and is complete before the expiration date of the existing permit, then the expiration of the existing permit is extended and the Permittee has the right to operate under that permit until the effective date of the new permit. However, this protection shall cease to apply if, subsequent to the completeness determination, the applicant fails to submit by the deadline specified in writing by the Department any additional information needed to process the application. Monitoring, recordkeeping, and reporting for this condition consist of the application submittal.

Condition 72 - 73, Permit Applications

Legal Basis: ~~These conditions set out the protocol the Permittee must follow to submit amendment, modification and renewal applications to the Department under 18 AAC 50.326(j)(3) and to the federal administrator under 40 C.F.R. 71.5, 71.7 and 71.10.~~

Factual Basis: ~~This condition directs the Permittee to submit application materials to the Department's Anchorage office. The current address at time of permit issuance is provided in a footnote because it is likely to change during the life of this permit. The current address can be obtained by contacting the Department, checking the website, or by other reasonable means. The Permittee may submit copies of application materials in electronic formats compatible with ADEC software as the Department can more efficiently distribute the electronic copy to staff in other locations. Condition 73 directs the applicant to send copies of all application materials directly to the EPA, in electronic format if practicable.~~

Commented [Hilcorp-298]: These conditions have been replaced by new Condition 77, above.

Conditions 8274 - 8678, General Compliance Requirements and Schedule

Legal Basis: These conditions ensure compliance with the applicable requirement in 18 AAC 50.326(j)(3) and 40 C.F.R. 71.6(c). The Permittee is required to comply with these standard permit conditions set out in 18 AAC 50.345 and 40 C.F.R. 71.6(c) included in all operating permits. 40 C.F.R. 70 Appendix A documents that EPA fully approved the Alaska operating permit program effective November 30, 2001.

Factual Basis: These ~~are standard conditions for general~~ compliance conditions are required for all operating permits.

Commented [Hilcorp-299]: Update to reflect the language used by the Department in other Title V permits.

Conditions 8779 - 8880, Permit Shield

Legal Basis: ~~This condition ensures~~ These conditions ensure compliance with the applicable requirement in 18 AAC 50.326(j) and applies apply because the Permittee has requested that the Department shield the source from the non-applicable requirements listed

under ~~this~~ these conditions under the federally ~~approved~~ State operating program effective November 30, 2001.

Factual Basis: ~~Table D~~ Table B of Operating Permit No. AQ0091TVP03AQ0091TVP02 shows the permit shields that the Department granted to the Permittee. The permit shields set forth the requirements that the Department determined were not applicable to the stationary source. The Department based the determinations on the permit application, past operating permit, Title I permits and inspection reports. Should any of the shielded requirements become applicable during the permit term, the Permittee is required to take necessary steps to comply with all applicable requirements in a timely manner. ~~The Department denied a shield to sulfur monitoring under 40 C.F.R. 60.334(h)(1) and reporting under 40 C.F.R. 60.7(e) and (d). Although ConocoPhillips has certified that the fuel for EU IDs 1—4 meets the definition of natural gas as defined in 40 C.F.R. 60.334(u), the Department has retained both monitoring options in the permit. The Department denied a shield for NSPS Subpart KKKK as ConocoPhillips has existing emission units and may replace a unit with an affected facility turbine during the life of this permit. The Department denied a shield for 40 C.F.R. 63 Subpart ZZZZ because the Environmental Protection Agency adopted Area Source Standards within this provision.~~

Commented [Hilcorp-300]: Update to reflect the language used by the Department in other Title V permits and to remove the outdated permit shield denial language that is not applicable to the renewed permit.

Attachment A

Commented [Hilcorp-301]: Replace with a more recent version of this attachment as provided by the Department for other Title V permits.

Figure 1—Summary Report—Excess Emission and Monitoring System Performance

Pollutant: (Circle One ~~SO₂/NO_x/fuel sulfur~~)

Reporting period dates:

From: _____ to _____

Company: _____

Emission Limitation: _____

Address: _____

Monitor Manufacturer and Model No.: _____

Date of latest CMS (CEMS and PEMS) Certification or Audit: _____

Process Unit(s) Description: _____

Total source operating time in reporting period¹: _____

Emission Data Summary ¹	CMS (CEMS and PEMS) Performance Summary ¹
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown _____ b. Control equipment problems _____ c. Process problems _____ d. Other known causes _____ e. Unknown causes _____	1. CMS (CEMS and PEMS) downtime in reporting period reporting period due to: a. Monitor equipment malfunctions _____ b. Non-Monitor equipment malfunctions _____ c. Quality assurance calibration _____ d. Other known causes _____ e. Unknown causes _____
2. Total duration of excess emission _____	2. Total CMS (CEMS and PEMS) Downtime _____
3. Total duration of excess emissions _____	3. [Total CMS (CEMS and PEMS) Downtime] _____
X (100)/[Total source operating time] _____ % ²	X (100)/[Total source operating time] _____ % ²

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS (CEMS or PEMS) downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in this condition shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name

Signature

FIGURE 1--SUMMARY REPORT--GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

[Note: This form is referenced in 40 C.F.R. 60.7, Subpart A-General Provisions]

Pollutant (*Circle One*): SO₂ NO_x TRS H₂S CO Opacity

Reporting period dates: From _____ to _____

Company:

Emission Limitation: _____

Address: _____

Monitor Manufacturer: _____

Model No.: _____

Date of Latest CMS Certification or Audit: _____

Process Unit(s) Description: _____

Total emissions unit operating time in reporting period ¹: _____

Emission Data Summary ¹	CMS Performance Summary ¹
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown b. Control equipment problems c. Process problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions 3. Total duration of excess emissions x (100) / [Total emissions unit operating time] % ²	1. CMS downtime in reporting period due to: a. Monitor equipment malfunctions b. Non-Monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 2. Total CMS Downtime 3. [Total CMS Downtime] x (100) / [Total emissions unit operating time] % ²

¹ For opacity, record all times in minutes. For gases, record all times in hours.

² For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 C.F.R. 60.7(c) shall be submitted.

Note: On a separate page, describe any changes since last quarter in CMS, process or controls.

I certify that the information contained in this report is true, accurate, and complete.

Name: _____

Signature: _____ Date: _____

Title: _____

SECTION 8 - SUPPORTING DOCUMENTATION

- 1 – January 26, 2009** - NSPS Subpart GG Notification of Natural Gas Demonstration
- 2 – February 10, 2014** - NESHAP Subpart ZZZZ §63.9(h)(2) Notice of Compliance Status – EU IDs 8 & 9
- 3 – November 1, 2016** - Transfer of Ownership Administrative Amendments - Tyonek Platform
- 4 – August 14, 2012** - NSPS Subpart IIII C9 DCPXL09.3HPA EPA Certificate of Conformity – EU ID 24
- 5 – September 23, 2013** - NSPS Subpart IIII C9 Tier 4i Statement of EPA Compliance – EU ID 24
- 6 – September 23, 2013** - NSPS Subpart IIII Engine Certificate of Compliance – EU ID 24
- 7 – December 14, 2007** - NSPS Subpart IIII John Deere Tier 3 Statement of EPA Compliance – EU ID 25

Tyonek Platform Air Quality Operating Permit Renewal Application Permit No. AQ0091TVP02, Revision 1

HILCORP ALASKA, LLC
3800 Centerpoint Dr., Suite 1400 (zip 99503)
P.O. Box 244027
Anchorage, AK 99524-4027

February 2023

**NOTIFICATION OF NSPS SUBPART GG NATURAL GAS DEMONSTRATION
TYONEK PLATFORM
FROM LINDSEY CLARK, CONOCOPHILLIPS COMPANY
TO DEBRA DALCHER, ADEC
JANUARY 26, 2009**



Post Office Box 66
Kenai, AK 99611
Phone (907) 776-8166
Fax: (907) 776-2095

January 26, 2009

Ms. Debra Dalcher
Alaska Department of Environmental Conservation
Air Permit Program
619 E. Ship Creek, Suite 249
Anchorage, Alaska 99501

CERTIFIED MAIL RECEIPT NO. 7004 1350 0002 4603 1428

**Re: Tyonek Platform
Permit AQ0091TVP02 - Renewal
Natural Gas Certification**

Dear Ms. Dalcher:

In support of the Alaska Department of Environmental Conservation's (ADEC's) renewal of the above referenced permit, Conoco Phillips Company, (CPC) certifies that the gas used as fuel for combustion equipment on the Tyonek Platform meets the definition of natural gas in 40 CFR 60.331(u), as indicated in the permit application.

As defined, natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Equivalents of this in other units are as follows: 0.068 weight percent total sulfur, 680 parts per million by weight (ppmw) total sulfur, and 338 parts per million by volume (ppmv) at 20 degrees Celsius total sulfur. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 British thermal units (Btu) per standard cubic foot.

Tyonek gas contains no sulfur, is composed of greater than 99% methane, and has a gross calorific value of approximately 1000 Btu per standard cubic foot. Evidence of this can be found as part of fuel gas composition analyses which have been submitted with past Tyonek Platform source test reports. CPC has demonstrated that the gas meets the definition of natural gas according to the requirements of 40 CFR 60.334(h)(3)(ii).

CPC appreciates the opportunity to participate in the development of the permit. Please direct any inquiries for additional information or clarification to Marta Czarnecki at (907) 776-2092.

"Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

Lindsey Clark
Cook Inlet Operations Manager

cc:
Brad Thomas, ATO-1971

Mr. Jim Plosay
Air Permit Program
410 Willoughby Ave, Ste 303
P.O. 111800
Juneau, Alaska 99811-1800

Ms. Nancy Helm
Director, Office of Air, Waste and Toxics
U.S. Environmental Protection Agency, Region 10
Mail Stop AWT-107
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-1128

Keith Quincey
Hoefer Consulting Group
3401 Minnesota Drive
Suite 300
Anchorage, Alaska 99503

NOTIFICATION OF NESHAPS SUBPART ZZZZ COMPLIANCE STATUS

[40 CFR 63.9(h)(2)]

TYONEK PLATFORM

FROM SARAH CALLAWAY/ DARREN MEZNARICH, CONOCOPHILLIPS ALASKA, INC.

TO RICHARD ALBRIGHT, USEPA REGION 10

FEBRUARY 10, 2014



Sarah Callaway
Environmental Coordinator
P.O. Box 66
Kenai, AK 99611
(907) 776-2092 (phone)
(907) 776-2095 (fax)
Sarah.callaway@cop.com

February 10, 2014

Mr. Richard Albright
Director, Office of Air, Waste and Toxics
United States Environmental Protection Agency, Region 10
1200 Sixth Avenue, Mail Stop OAQ-107
Seattle, WA 98101

CERTIFIED MAIL RECEIPT NO.: 7011 1570 0001 6384 0648

Subject: Notification of Compliance Status
NESHAPS Subpart ZZZZ Testing
ConocoPhillips Alaska, Inc. Tyonek Platform
Cook Inlet, Alaska

ConocoPhillips Alaska, Inc. (CPAI) operates two Waukesha model L-7042G (Emission Unit [EU] IDs 8 & 9) spark ignition, reciprocating internal combustion engine (SI RICE) located on the Tyonek Platform (Tyonek) in Cook Inlet, Alaska. The engines are existing 4SRB engines rated at 805 hp and located at an area source of HAP emissions subject to the initial test requirements of 40 CFR §63.6612.

In accordance with 40 CFR §63.6630(d) each unit has been tested to demonstrate compliance with the 30 percent reduction in total hydrocarbons across the catalyst. The initial notification to test the units was submitted to EPA Region 10 on October 4, 2013. EUID 8 was tested on December 12, 2013 and EUID 9 was tested on December 28, 2013. A summary of the results is provided below.

Summary of Results – EUIDs 8 & 9

Run ID	Load (kWe)	Inlet Total Hydrocarbon (ppmv as C ₃ H ₈ , dry) ¹	Outlet Total Hydrocarbon (ppmv as C ₃ H ₈ , dry) ¹	Reduction Total Hydrocarbon (%)
EUID8g	298	211	129	38.7
EUID9f	312	146	97	33.8

¹ Corrected to 15% O₂

In accordance with §63.9(h)(2)(ii), CPAI is providing notification of compliance with the 30 percent reduction in total hydrocarbons. A copy of the report is included with this notification.

Should you have any questions or require additional information, please contact Sarah Callaway, Environmental Coordinator, at (907) 776-2092.

Based upon information and belief formed after a reasonable inquiry, I certify the information contained in this report is accurate and true to the best of my knowledge. The above-mentioned facility has complied with the relevant standard or and other applicable requirements referenced in the relevant standard.
[§63.9(h)(2)(i)(G)]

Sincerely,



Darren Meznarich
Alaska Gas Manager

cc: ADEC/ Compliance Technician
Air Permits Program
610 University Avenue
Fairbanks, AK 99709-3643

ConocoPhillips Alaska, Inc.
40 CFR 63 Subpart ZZZZ Notification of Compliance Status
Tyonek Platform

Description of Affected Sources

Two Waukesha Model L-7042G spark ignition four stroke rich burn engines, each rated at 810 horsepower (hp). The units are identified as EUIDs 8 and 9 in Operating Permit AQ0091TVP02.

Methods Used to Determine Initial Compliance

Initial compliance with the applicable Subpart ZZZZ numerical emission standard in 63.6603(a) and Table 2d (install non-selective catalytic reduction [NSCR] catalyst and reduce hazardous air pollutant [HAP] emissions) is based on results of the initial performance test required by 63.6612, and testing was conducted using requirements and procedures in 63.6620.

[40 CFR 63.9(h)(2)(i)(A)]

Results of Performance Test

See attached performance test report, documenting initial compliance with the applicable formaldehyde emissions reduction standard. As required by Subpart ZZZZ Table 5, Section 14.a.i, and indicated in the test report, the average reduction in total hydrocarbons (THC) from the initial performance test meets the required 30 percent reduction.

[40 CFR 63.9(h)(2)(i)(B)]

Methods Used for Continuous Compliance

Continuous compliance with the applicable Subpart ZZZZ numerical emission standard in 63.6603(a) and Table 5, Section 14.a (THC reduction greater than 30 percent) is based on the results of performance tests required under 63.6640(a), conducted using requirements and procedures in 63.6620.

[40 CFR 63.9(h)(2)(i)(C)]

Type and Quantity of HAP (or Surrogate) Emitted

Subpart ZZZZ utilizes THC emissions as a surrogate for HAP emissions. As allowed in 63.6630d and Table 5, Section 14.a.i, CPAI has elected to demonstrate compliance using a 30 percent reduction in total hydrocarbons (THC). The test report being submitted with this notification documents that the THC reduction measured during the performance test meets the applicable standard and the test methods used are consistent with those required by Subpart ZZZZ.

[40 CFR 63.9(h)(2)(i)(D)]

Classification of Affected Source as HAP Minor

Subpart ZZZZ applies to both HAP major and HAP minor sources. Because Subpart ZZZZ allows THC emissions as a surrogate for HAP emissions, the initial performance test did not provide the data to document that each affected source is HAP minor. Based on available HAP emission factors for diesel-fired engines, estimated pre-control total HAP emissions from each affected source are 0.81 tons per year (tpy); therefore we conclude that each affected source is HAP minor.

[40 CFR 63.9(h)(2)(i)(E)]

Description of Air Pollution Control Equipment

For both affected sources, CPAI uses NSCR to reduce HAPS under 63.6603(a) and Table 2d, Section 12. The 3-way catalyst on EUID 8 is a Model DC73-10 (Quick-LID housing) manufactured by DCL International. The manufacturer brochure lists a minimum reduction efficiency for HAPS of 80 percent. The 3-way catalyst on EUID 9 is a DE-NOX 750, manufactured by Johnson-Matthey.

[40 CFR 63.9(h)(2)(i)(F)]

Compliance Statement

Based on the results of the initial compliance demonstration required by 63.6630, CPAI is in compliance with the applicable emission limitations identified in this notification.

[40 CFR 63.9(h)(2)(i)(G)]

**TRANSFER OF OWNERSHIP ADMINISTRATIVE AMENDMENTS
TYONEK PLATFORM
PERMIT NO. AQ0091TVP02
PERMIT NO. AQ0091MSS03
FROM JOHN F. KUTERBACH, ADEC
TO DAVID S. WILKINS, HILCORP ALASKA, LLC and
DAN CLARK, CONOCOPHILLIPS ALASKA, INC.
NOVEMBER 1, 2016**



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

**Department of Environmental
Conservation**

DIVISION OF AIR QUALITY
Air Permits Program

410 Willoughby Avenue, Suite 303
PO Box 111800
Juneau, Alaska 99811-1800
Main: 907-465-5100
Toll Free: 866-241-2805
Fax: 907-465-5129
www.dec.alaska.gov

CERTIFIED MAIL: 7015 0640 0002 5001 7660
Return Receipt Requested

November 1, 2016

David S. Wilkins, Senior Vice President
Hilcorp Alaska, LLC
PO Box 244027
Anchorage, AK 99524

Dan Clark, VP Strategy & Commercial
ConocoPhillips Alaska, Inc.
PO Box 100360
Anchorage, AK 99510-0360

Subject: Transfer of Ownership, Administrative Amendments, ConocoPhillips Alaska,
Inc. to Hilcorp Alaska LLC, Tyonek Platform

Dear Sirs:

The Department of Environmental Conservation (Department) has received correspondence on September 16, & October 31, 2016 along with affidavits which reflect the transfer of ownership of the Tyonek Platform, Permit Nos. listed below, from ConocoPhillips Alaska, Inc. (ConocoPhillips) to Hilcorp Alaska, LLC (Hilcorp). The Department finds that the change in the ownership of these stationary sources is an administrative amendment as described by 40 C.F.R. section 71.7(d) adopted by reference in 18 AAC 50.040(j) and that no other change to the permits are necessary.

Facility	Previous Permit No. (ConocoPhillips)	New Admin. Amendment Permit No. (Hilcorp)	File No.
Tyonek Platform	AQ0091TVP02	AQ0091TVP02 Revision 1	2100.16.005
Tyonek Platform	AQ0091MSS03	AQ0091MSS03 Revision 1	2100.16.005

These administrative amendments do not relieve the new Permittee from the responsibility to apply for any other permit or approval required by the Department, the U.S. Environmental Protection Agency, or local governments. Please be advised that State regulations may differ

Clean Air

Received Nov. 8th 2016

from federal regulations. If you have any questions regarding compliance with federal regulations, you should contact EPA.

As set out in the signed transfer of ownership forms you provided, the obligation of all permit conditions, including pending applications associated with the stationary source and financial responsibilities are accepted in the entirety by the new owner or operator.

A person who has a private, substantive, legally protected interest under state law that may be adversely affected by the permit action, the owner and operator, or, if a public comment process is required or solicited, a person who participated in the public comment process may request an adjudicatory hearing in accordance with 18 AAC 15.195 - 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, PO Box 111800, Juneau, Alaska 99811-1800, within 15 days of the permit decision.

Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, PO Box 111800, Juneau, Alaska 99811-1800, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived. More information on how to appeal a Department decision is available at <http://www.dec.state.ak.us/commish/ReviewGuidance.htm>.

Please note that Alaska's air quality statutes, regulations, and permit application information can be obtained from the Department's web page at <http://dec.alaska.gov/air/ap/mainair.htm>.

If you have any questions, please contact Dave Jones at (907) 957-8599 or by email at dave.jones2@alaska.gov.

Sincerely,



John F. Kuterbach, Manager
Air Permits Program

Enclosures: Hilcorp Alaska LLC
Permit & Statement of Basis No. AQ0091TVP02 Rev. 1
Permit No. AQ0091MSS03 Rev. 1
Technical Analysis Report No. AQ0091MSS03 Rev. 1
Transfer of Ownership Form

Enclosure: ConocoPhillips Alaska, Inc.
Transfer of Ownership Form

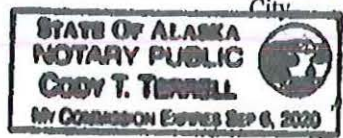
cc: Patrick Dunn, ADEC/APP/Anchorage
Jim Plosay, ADEC/APP/Juneau
Jim Baumgartner, ADEC/APP, Juneau
Tom Turner, ADEC/APP, Anchorage
P. Moses Coss, ADEC/APP, Fairbanks
Adam Saaid, ADEC/APP, Anchorage
Tammy Walker, ADEC/APP, Anchorage
Doug Hardesty, EPA Region 10
Drew Anderson, Hilcorp (ananderson@hilcorp.com)
Bill Britt, Hilcorp (wbritt@hilcorp.com)
Julieanna Orczewska, Hilcorp (jorczevska@hilcorp.com)
Sarah Kenshalo, ConocoPhillips (sarah.m.kenshalo@conocophillips.com)

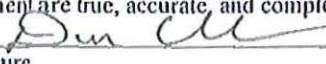
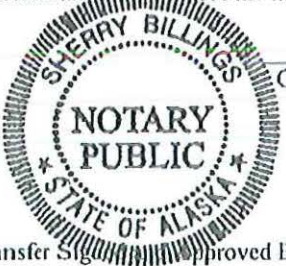
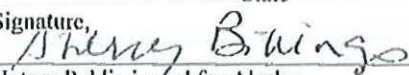
ASSIGNMENT OF OWNERSHIP OR DESIGNATION OF NEW OPERATOR AFFIDAVIT OF SOURCE ACCEPTANCE

Stationary Source Name	Tyonek "A" Platform	Permit or Approval Number	AQ0091TVP02 &
Stationary Source Location	Upper Cook Inlet, Alaska.		AQ0091MSS03
Effective Date	9/16/2016		
New Owner or Operator	Hilcorp Alaska, LLC		
Responsible Official	David S. Wilkins, Senior Vice President		
Contact Number	907-777-8300		
Previous Owner or Operator	ConocoPhillips Company		
Responsible Official	Dan Clark		
Contact Number	(907) 263-4348		

As designated above, the new owner/operator hereby accepts the assignment of the above referenced stationary source from the previous owner/operator. The obligation of all permit conditions or approvals to operate, including pending applications associated with the stationary source and financial responsibilities are accepted in the entirety by the new owner/operator, and the parties named below believe that the assignment will not result in an appreciable change in operation of the stationary source under the existing requirements.

For permitted sources, submit a fee for the transfer of ownership administrative amendment as set out by 18 AAC 50.400(i)(1) and (i)(2).

TO				
Hilcorp Alaska, LLC				
Corporate Name of New Owner or Operator				
David S. Wilkins, Senior Vice President				
Name, Title		Date		
3800 Centerpoint Drive, Suite 1400, Anchorage, AK 99503		(907) 777-8300		
Address	City	State	Zip Code	Telephone Number
Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.				
Signature 		Title		Date
		Senior Vice President		9/16/2016
Subscribed and sworn before me this		Day	Month and Year	
		16 th	September, 2016	
At		City	State	
		Anchorage, AK		
		Signature 		
		Notary Public in and for Alaska		
		My Commission Expires 9/6/2020		

FROM				
ConocoPhillips Company				
Corporate Name of Previous Owner or Operator				
Dan Clark, VP Strategy & Commercial				
Name, Title		Date		
700 G. Street, P.O. Box 100360, Anchorage, AK 99510		(907) 263-4348		
Address	City	State	Zip Code	Telephone Number
Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.				
Signature 		Title		Date
		VP Strategy & Commercial		9/16/2016
Subscribed and sworn before me this		Day	Month and Year	
		16 th	September, 2016	
At		City	State	
		Anchorage	Alaska	
		Signature 		
		Notary Public in and for Alaska		
		My Commission Expires 11/16/2016		
Transfer Signed and Approved By		Date: 9/16/2016		

New Owner or Operator Identification Information

Stationary Source Name Tyonek "A" Platform

Physical Address Upper Cook Inlet, Alaska

Mailing Address PO Box 244027, Anchorage, AK 99524

UTM Coordinates or _____

Latitude/Longitude 61°04'36"N; 150°56'52"W

Owner Hilcorp Alaska, LLC

Mailing Address PO Box 244027, Anchorage, AK 99524

Operator (if different from owner) N/A

Mailing Address _____

Stationary Source Contact David S. Wilkins, Senior Vice President

Mailing Address Same as above

Telephone Number (907) 777-8300

Designated Agent CT Corporation

Mailing Address 9360 Glacier Highway, Suite 202, Juneau, AK 99801

Telephone Number _____

Responsible Official David S. Wilkins, Senior Vice President

Mailing Address PO Box 244027, Anchorage, AK 99524

Telephone Number (907) 777-8300

Billing Contact David S. Wilkins, Senior Vice President

Mailing Address Same as above

Telephone Number Same as above

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: David S. Wilkins

Title: Senior Vice President

Responsible Official Signature: _____

Date: 10/31/16

NSPS SUBPART IIII
C9 DCPXL09.3HPA EPA Certificate of Conformity
ENGINE EU ID 24
AUGUST 14, 2012

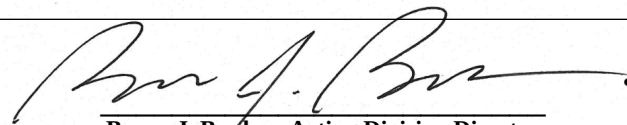


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2013 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Caterpillar Inc.
(U.S. Manufacturer or Importer)
Certificate Number: DCPXL09.3HPA-014

Effective Date:
08/14/2012
Expiration Date:
12/31/2013


Byron J. Bunker, Acting Division Director
Compliance Division

Issue Date:
08/14/2012
Revision Date:
N/A

Model Year: 2013
Manufacturer Type: Original Engine Manufacturer
Engine Family: DCPXL09.3HPA

Mobile/Stationary Indicator: Both
Emissions Power Category: 130<kW≤560
Fuel Type: Diesel
After Treatment Devices: Diesel Oxidation Catalyst, PTOX-DPF-Active
Non-after Treatment Devices: Engine Design Modification, Electronic/Electric EGR - Cooled, Electronic Control
FELs: PM 0.01 g/kW-hr

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Parts 60 and 1039, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Parts 60 and 1039 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Parts 60 and 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Parts 60 and 1039.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Parts 60 and 1039. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Parts 60 and 1039.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

This certificate of conformity is conditional upon compliance of said manufacturer with the averaging, banking and trading provisions of 40 CFR Part 1039, Subpart H. Failure to comply with these provisions may render this certificate void *ab initio*.

NSPS SUBPART IIII
C9 Tier 4i Statement of EPA Compliance
ENGINE EU ID 24
SEPTEMBER 23, 2013

Engine Emissions Data

For Emissions feedback and questions submit [request form](#)

This emission data is Caterpillar's best estimate for this rating. If actual emissions are required then an emission test needs to be run on your engine.

Serial Number (Machine)	
Serial Number (Engine)	D9N00478
Sales Model	C9.3
Build Date	2013-01-15
Interlock Code Progression	No Interlock Code Progression
As Shipped Data	
Engine Arrangement Number	3655969
Certification Arrangement	
Test Spec Number	4150221
Regulatory Status	EPA/ CARB / EU / R120 / MLIT
Labeled Model Year	2013
Family Code	DCPXL09.3HPA
Emissions Level	EPA TIER 4i
Emissions Level	Stage IIIB
Emissions Level	Step 4i
Flash File	4236599
CORR FL Power at RPM	355 HP (265.0 KW) at 2200 RPM
Advertised Power	350HP 2,200RPM
Total Displacement	9.3

This is not an official emission certificate. This is for emission data information only.

Caterpillar Confidential: **Green**
Content Owner: Commercial Processes Division
Web Master(s): [PSG Web Based Systems Support](#)
Current Date: Monday, September 23, 2013 2:36:58 PM
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[Data Privacy Statement](#)

NSPS SUBPART IIII
Engine Certificate of Compliance
ENGINE EU ID 24
SEPTEMBER 23, 2013



POWER SYSTEMS

12800 Northwest Freeway, Houston, Texas 77040 (713) 460-7211

Certificate of Compliance

Engine Sales Model: C9 Tier 4I and C13 Tier 4I

Engine Serial No.: D9N00478 and KWJ02595

This is to certify that the engine shown above sold on Mustang's Sales Order No. B5816 and B5915 with PO# 203433 and 200888, was tested prior to leaving the Caterpillar factory. Test results are available.

Attested to:

 9-23-13
Signature & Date

Office Manager MustangCat Power Systems
Title

NSPS SUBPART IIII
John Deere Tier 3 Statement of EPA Compliance
ENGINE EU ID 25
DECEMBER 14, 2007



Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2008	8JDXL13.5103	13.5	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Smoke Puff Limiter, Exhaust Gas Recirculation			Pump, Compressor, Generator Set, Other Industrial Equipment	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NO_x), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO_x), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NO _x	NMHC+NO _x	CO	PM	ACCEL	LUG	PEAK
225 ≤ kW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
450 ≤ kW < 560	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.4	0.6	0.10	11	1	20

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 14th day of December 2007.


Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: John Deere Power Systems.
 Engine category: Nonroad CI
 EPA Engine Family: 8JDXL13.5103
 City Name: 650HAA
 Product Code: New Submission

Attachment p. 1 of 4.

U-R-004-0318

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1939
6135HF485A	6135H	630.29@2100	311.00@2100	218.30@2100	2025.08@1575	393@1575	206.31@1575	EM EGR EC
6135HF485B	6135H	600.78@2100	296.30@2100	209.73@2100	1880.54@1575	354.5@1575	188.19@1575	EM EGR EC
6135HF485C	6135H	549.82@2100	274.60@2100	194.41@2100	1792.04@1400	356.6@1400	168.28@1400	EM EGR EC
6135HF485D	6135H	549.82@2100	274.60@2100	194.41@2100	1792.04@1400	356.6@1400	168.28@1400	EM EGR EC
6135HF485E	6135H	525.69@2100	265.70@2100	188.08@2100	1792.04@1400	357.6@1400	168.79@1400	EM EGR EC
6135HF485F	6135H	500.21@2100	251.80@2100	178.20@2100	1688.80@1400	332.1@1400	156.71@1400	EM EGR EC
6135HF485G	6135H	500.21@2100	251.80@2100	178.20@2100	1688.80@1400	332.1@1400	156.71@1400	EM EGR EC
6135HF485H	6135H	500.21@1900	272.70@1900	174.63@1900	1792.04@1400	359.9@1400	169.87@1400	EM EGR EC
6135HF485T	6135H	537.75@1800	308.90@1800	187.44@1800				EM EGR EC
6135HF485S	6135H	616.88@1800	347.80@1800	210.98@1800				EM EGR EC
6135HF485I	6135H	450.59@2100	226.40@2100	160.26@2100	1521.39@1400	350.6@1400	165.50@1400	EM EGR EC
6135HF485J	6135H	450.59@2100	226.40@2100	160.26@2100	1521.39@1400	350.6@1400	165.50@1400	EM EGR EC
6135HF485K	6135H	450.59@1900	243.40@1900	155.87@1900	1688.80@1400	334.9@1400	158.05@1400	EM EGR EC
6135HF485L	6135H	425.11@2100	210.40@2100	148.92@2100	1521.39@1400	302.5@1400	142.75@1400	EM EGR EC
6135HF485M	6135H	399.63@2100	199.50@2100	141.21@2100	1352.51@1400	285.6@1400	134.77@1400	EM EGR EC
6135HF485N	6135H	399.63@2100	199.50@2100	141.21@2100	1352.51@1400	285.6@1400	134.77@1400	EM EGR EC
6135HF485O	6135H	399.63@1900	214.20@1900	137.17@1900	1521.39@1400	310.6@1400	146.61@1400	EM EGR EC
6135HF485P	6135H	350.01@2100	177.30@2100	564.60@2100	1181.42@1400	217.6@1400	120.90@1400	EM EGR EC
6135HF485Q	6135H	350.01@2100	177.30@2100	125.49@2100	1181.42@1400	256.1@1400	120.90@1400	EM EGR EC
6135HF485R	6135H	350.01@1900	188.50@1900	120.75@1900	1352.51@1400	282.3@1400	133.21@1400	EM EGR EC
6135HF485U	6135H	462.66@1800	257.30@1800	156.09@1800				EM EGR EC
6135HRW02	6135H	496.18@2100	243.30@2100	172.29@2100	1713.13@1575	339.3@1575	180.16@1575	EM EGR EC
6135HRW01	6135H	590.05@2100	290.40@2100	205.65@2100	1880.54@1575	368.6@1575	195.73@1575	EM EGR EC
5HN001	6135H	500.21@2100	251.80@2100	178.20@2100	1688.80@1400	332.1@1400	156.71@1400	EM EGR EC
IH001A	6135H	527.03@2200	256.30@2200	190.22@2200	1530.98@1600	317.1@1600	171.08@1600	EM EGR EC
6135HH001B	6135H	486.80@2200	236.20@2200	175.23@2200	1530.98@1600	318.7@1600	171.92@1600	EM EGR EC

SPL, DDI,
TL, CAC

SECTION 9 -
AP-42 CHAPTER 7 STORAGE TANK EMISSIONS -
EMISSION MASTER TANKS CALCULATION DETAILS

Tyonek Platform

Air Quality Operating Permit Renewal Application
Permit No. AQ0091TVP02, Revision 1

HILCORP ALASKA, LLC

3800 Centerpoint Dr., Suite 1400 (zip 99503)

P.O. Box 244027

Anchorage, AK 99524-4027

February 2023

Activity Title **Hilcorp TYK AC Generator Diesel Tank (TK-107)**

Climate: N/A
 pa N/A
 Equipment Tag Hilcorp TYK Diesel Tank TK-107
 Storage Vessel Style Horizontal Storage
 Calculation Type Isothermal Storage Tank (11/2019 Rev.)
 Working Loss Calculation
 Void Space Volume 1057.53 gal
 Working Volume 1050 gal
 Working Volume 140.3646 ft^3
 Shell Diameter 3 ft
 Straight Side Height 20 ft
 Paint Solar Absorptance 0.42
 Roof Color / Condition beige/cream / average
 Shell Color / Condition beige/cream / average
 Pi (constant) 3.1416
 R (constant) 998.9

Vessel Contents (avg) 525.000 gal 18.300 °C 3523.965 lb 27.145 lb-M

Mixture Name:	Diesel No. 1 (with HAP)							
[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)	
1,2,4 - Trimethylbenzene	1.3863	12.2986	0.00349	0.1023	0.00377	1	0.0052	
2,2,4-Trimethylpentane	35.9585	0.2467	0.00007	0.0022	7.96E-05	1	0.0029	
Benzene	67.2763	0.141	0.00004	0.0018	6.65E-05	1	0.0045	
Biphenyl	0.004	4.123	0.00117	0.0267	0.000985	1	3.91E-06	
Cumene	3.035	1.9734	0.00056	0.0164	0.000605	1	0.0018	
Diesel No. 1 (Misc VOC)	0.62	3480.8671	0.98777	26.7759	0.986419	1	0.6116	
Ethylbenzene	6.6049	1.8677	0.00053	0.0176	0.000648	1	0.0043	
Naphthalene	0.0499	10.0433	0.00285	0.0784	0.002887	1	1.00E-04	
n-Hexane	112.9184	1.0572	0.0003	0.0123	0.000452	1	0.051	
Toluene	19.8954	2.8544	0.00081	0.031	0.001141	1	0.0227	
Xylenes	5.696	8.4928	0.00241	0.08	0.002947	1	0.0168	

Kp (product factor) 1

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	356.7123	322.1918	356.7123	345.2055	356.7123	345.2055	356.7123	356.7123	345.2055	356.7123	345.2055	356.7123	4200 (sum)
Vq	(ft^3)	47.6855	43.0708	47.6855	46.1473	47.6855	46.1473	47.6855	47.6855	46.1473	47.6855	46.1473	47.6855	561.4585 (sum)
N (period)	(number)	0.3397	0.3068	0.3397	0.3288	0.3397	0.3288	0.3397	0.3397	0.3288	0.3397	0.3288	0.3397	4.0 (sum)
N (scaled to annual)	(number)	4	4	4	4	4	4	4	4	4	4	4	4	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)

1,2,4 - Trimethylbenzene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
2,2,4-Trimethylpentane	(Mv)	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23 (lb/lb-mole)
Benzene	(Mv)	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11 (lb/lb-mole)
Biphenyl	(Mv)	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21 (lb/lb-mole)
Cumene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
Diesel No. 1 (Misc VOC)	(Mv)	130	130	130	130	130	130	130	130	130	130	130	130	130 (lb/lb-mole)
Ethylbenzene	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)
Naphthalene	(Mv)	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17 (lb/lb-mole)
n-Hexane	(Mv)	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754 (lb/lb-mole)
Toluene	(Mv)	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13 (lb/lb-mole)
Xylenes	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)

Working Loss Calculations (Uncontrolled)

Kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	0.3397	0.3068	0.3397	0.3288	0.3397	0.3288	0.3397	0.3397	0.3288	0.3397	0.3288	0.3397	4.0 (sum)
Vq	(ft^3)	47.6855	43.0708	47.6855	46.1473	47.6855	46.1473	47.6855	47.6855	46.1473	47.6855	46.1473	47.6855	561.4585 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Density (vW(i))														
1,2,4 - Trimethylbenzene	(lb/ft^3)	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06	2.16E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft^3)	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06	1.12E-06 (avg)
Benzene	(lb/ft^3)	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06	1.20E-06 (avg)
Biphenyl	(lb/ft^3)	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09	2.07E-09 (avg)
Cumene	(lb/ft^3)	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07	7.58E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft^3)	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04 (avg)
Ethylbenzene	(lb/ft^3)	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06	1.56E-06 (avg)
Naphthalene	(lb/ft^3)	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08	6.34E-08 (avg)
n-Hexane	(lb/ft^3)	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05	1.51E-05 (avg)
Toluene	(lb/ft^3)	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06 (avg)
Xylenes	(lb/ft^3)	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06	6.12E-06 (avg)
Working Losses (Lw)														
1,2,4 - Trimethylbenzene	(lb)	1.00E-04	9.29E-05	1.00E-04	9.96E-05	1.00E-04	9.96E-05	1.00E-04	1.00E-04	9.96E-05	1.00E-04	9.96E-05	1.00E-04	1.19E-03 (sum)
2,2,4-Trimethylpentane	(lb)	5.35E-05	4.83E-05	5.35E-05	5.18E-05	5.35E-05	5.18E-05	5.35E-05	5.35E-05	5.18E-05	5.35E-05	5.18E-05	5.35E-05	6.30E-04 (sum)
Air	(lb)	3.6029	3.2542	3.6029	3.4867	3.6029	3.4867	3.6029	3.6029	3.4867	3.6029	3.4867	3.6029	42.4213 (sum)
Benzene	(lb)	5.72E-05	5.17E-05	5.72E-05	5.54E-05	5.72E-05	5.54E-05	5.72E-05	5.72E-05	5.54E-05	5.72E-05	5.54E-05	5.72E-05	6.74E-04 (sum)
Biphenyl	(lb)	9.87E-08	8.91E-08	9.87E-08	9.55E-08	9.87E-08	9.55E-08	9.87E-08	9.87E-08	9.55E-08	9.87E-08	9.55E-08	9.87E-08	1.16E-06 (sum)
Cumene	(lb)	3.61E-05	3.26E-05	3.61E-05	3.50E-05	3.61E-05	3.50E-05	3.61E-05	3.61E-05	3.50E-05	3.61E-05	3.50E-05	3.61E-05	4.26E-04 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.013	0.0118	0.013	0.0126	0.013	0.0126	0.013	0.013	0.0126	0.013	0.0126	0.013	0.1532 (sum)
Ethylbenzene	(lb)	7.44E-05	6.72E-05	7.44E-05	7.20E-05	7.44E-05	7.20E-05	7.44E-05	7.44E-05	7.20E-05	7.44E-05	7.20E-05	7.44E-05	8.76E-04 (sum)
Naphthalene	(lb)	3.02E-06	2.73E-06	3.02E-06	2.93E-06	3.02E-06	2.93E-06	3.02E-06	3.02E-06	2.93E-06	3.02E-06	2.93E-06	3.02E-06	3.56E-05 (sum)
n-Hexane	(lb)	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	8.40E-03 (sum)
Toluene	(lb)	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.60E-03 (sum)
Xylenes	(lb)	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.60E-03 (sum)
VOC	(lb)	1.46E-02	1.34E-02	1.46E-02	1.42E-02	1.46E-02	1.42E-02	1.46E-02	1.46E-02	1.42E-02	1.46E-02	1.42E-02	1.46E-02	0.1726 (sum)
Total Losses (Lt)														
1,2,4 - Trimethylbenzene	(lb)	1.00E-04	9.29E-05	1.00E-04	9.96E-05	1.00E-04	9.96E-05	1.00E-04	1.00E-04	9.96E-05	1.00E-04	9.96E-05	1.00E-04	1.19E-03 (sum)
2,2,4-Trimethylpentane	(lb)	5.35E-05	4.83E-05	5.35E-05	5.18E-05	5.35E-05	5.18E-05	5.35E-05	5.35E-05	5.18E-05	5.35E-05	5.18E-05	5.35E-05	6.30E-04 (sum)
Air	(lb)	3.6029	3.2542	3.6029	3.4867	3.6029	3.4867	3.6029	3.6029	3.4867	3.6029	3.4867	3.6029	42.4213 (sum)
Benzene	(lb)	5.72E-05	5.17E-05	5.72E-05	5.54E-05	5.72E-05	5.54E-05	5.72E-05	5.72E-05	5.54E-05	5.72E-05	5.54E-05	5.72E-05	6.74E-04 (sum)
Biphenyl	(lb)	9.87E-08	8.91E-08	9.87E-08	9.55E-08	9.87E-08	9.55E-08	9.87E-08	9.87E-08	9.55E-08	9.87E-08	9.55E-08	9.87E-08	1.16E-06 (sum)
Cumene	(lb)	3.61E-05	3.26E-05	3.61E-05	3.50E-05	3.61E-05	3.50E-05	3.61E-05	3.61E-05	3.50E-05	3.61E-05	3.50E-05	3.61E-05	4.26E-04 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.013	0.0118	0.013	0.0126	0.013	0.0126	0.013	0.013	0.0126	0.013	0.0126	0.013	0.1532 (sum)
Ethylbenzene	(lb)	7.44E-05	6.72E-05	7.44E-05	7.20E-05	7.44E-05	7.20E-05	7.44E-05	7.44E-05	7.20E-05	7.44E-05	7.20E-05	7.44E-05	8.76E-04 (sum)
Naphthalene	(lb)	3.02E-06	2.73E-06	3.02E-06	2.93E-06	3.02E-06	2.93E-06	3.02E-06	3.02E-06	2.93E-06	3.02E-06	2.93E-06	3.02E-06	3.56E-05 (sum)
n-Hexane	(lb)	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	7.00E-04	8.40E-03 (sum)
Toluene	(lb)	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.60E-03 (sum)
Xylenes	(lb)	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.00E-04	3.60E-03 (sum)
VOC	(lb)	1.46E-02	1.34E-02	1.46E-02	1.42E-02	1.46E-02	1.42E-02	1.46E-02	1.46E-02	1.42E-02	1.46E-02	1.42E-02	1.46E-02	0.1726 (sum)
Total Losses														
1,2,4 - Trimethylbenzene	(tpy)	5.00E-08	4.65E-08	5.00E-08	4.98E-08	5.00E-08	4.98E-08	5.00E-08	5.00E-08	4.98E-08	5.00E-08	4.98E-08	5.00E-08	5.96E-07 (sum)
2,2,4-Trimethylpentane	(tpy)	2.68E-08	2.42E-08	2.68E-08	2.59E-08	2.68E-08	2.59E-08	2.68E-08	2.68E-08	2.59E-08	2.68E-08	2.59E-08	2.68E-08	3.15E-07 (sum)
Benzene	(tpy)	2.86E-08	2.58E-08	2.86E-08	2.77E-08	2.86E-08	2.77E-08	2.86E-08	2.86E-08	2.77E-08	2.86E-08	2.77E-08	2.86E-08	3.37E-07 (sum)
Biphenyl	(tpy)	4.93E-11	4.46E-11	4.93E-11	4.78E-11	4.93E-11	4.78E-11	4.93E-11	4.93E-11	4.78E-11	4.93E-11	4.78E-11	4.93E-11	5.81E-10 (sum)
Cumene	(tpy)	1.81E-08	1.63E-08	1.81E-08	1.75E-08	1.81E-08	1.75E-08	1.81E-08	1.81E-08	1.75E-08	1.81E-08	1.75E-08	1.81E-08	2.13E-07 (sum)
Diesel No. 1 (Misc VOC)	(tpy)	6.50E-06	5.90E-06	6.50E-06	6.30E-06	6.50E-06	6.30E-06	6.50E-06	6.50E-06	6.30E-06	6.50E-06	6.30E-06	6.50E-06	7.66E-05 (sum)
Ethylbenzene	(tpy)	3.72E-08	3.36E-08	3.72E-08	3.60E-08	3.72E-08	3.60E-08	3.72E-08	3.72E-08	3.60E-08	3.72E-08	3.60E-08	3.72E-08	4.38E-07 (sum)
Naphthalene	(tpy)	1.51E-09	1.37E-09	1.51E-09	1.46E-09	1.51E-09	1.46E-09	1.51E-09	1.51E-09	1.46E-09	1.51E-09	1.46E-09	1.51E-09	1.78E-08 (sum)
n-Hexane	(tpy)	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	3.50E-07	4.20E-06 (sum)
Toluene	(tpy)	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.80E-06 (sum)
Xylenes	(tpy)	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.50E-07	1.80E-06 (sum)
VOC	(tpy)	7.31E-06	6.70E-06	7.31E-06	7.11E-06	7.31E-06	7.11E-06	7.31E-06	7.31E-06	7.11E-06	7.31E-06	7.11E-06	7.31E-06	8.63E-05 (sum)

Activity Title	Hilcorp TYK TEG Tank (TK-111A)													
Climate:	Alaska, Homer													
pa	752.87 mmHg													
Equipment Tag	Hilcorp TYK Glycol Tank													
Storage Vessel Style	Dome Roof Storage													
Calculation Type	Normal Storage Tank (11/2019 Rev.)													
	Working and Breathing Loss Calculation													
Void Space Volume	19203.63 gal													
Working Volume	18213 gal													
Working Volume	2434.7239 ft^3													
Shell Diameter	10 ft													
Straight Side Height	32 ft													
Hro	0.686 ft													
Paint Solar Absorptance	0.71													
Roof Color / Condition	gray-medium / average													
Shell Color / Condition	gray-medium / average													
pbp	0.03													
pbv	-0.03													
Pi (constant)	3.1416													
R (constant)	998.9													
Vessel Contents (avg)	9107.000 gal	4.440 °C	85425.752 lb	568.860 lb-M										
Mixture Name:	TEG													
	[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)						
	Triethylene Glycol	2.00E-04	85425.7518	1	568.8603	1	1	2.00E-04						
Kp (product factor)	1													
HI	15.4941 ft													
Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	18562.3753	16766.0164	18562.38	17963.589	18562.38	17963.59	18562.38	18562.38	17963.59	18562.38	17963.59	18562.38	218557 (sum)
Vq	(ft^3)	2481.4286	2241.2904	2481.429	2401.3826	2481.429	2401.383	2481.429	2481.429	2401.383	2481.429	2401.383	2481.429	29216.82 (sum)
N (period)	(number)	1.0192	0.9206	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
N (scaled to annual)	(number)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)
Compound Molecular Weights (lb/lb-M)														
Triethylene Glycol	(Mv)	150.17	150.17	150.17	150.17	150.17	150.17	150.17	150.17	150.17	150.17	150.17	150.17	150.17 (lb/lb-mole)
Compound Vapor Pressures (Pva)														
Triethylene Glycol	(mmHg)	7.70E-05	9.20E-05	1.00E-04	2.00E-04	4.00E-04	5.00E-04	6.00E-04	5.00E-04	4.00E-04	2.00E-04	1.00E-04	8.40E-05	2.71E-04 (avg)
Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	1.49E-06	1.78E-06	2.55E-06	4.18E-06	6.77E-06	9.86E-06	1.17E-05	1.06E-05	7.14E-06	3.79E-06	2.15E-06	1.62E-06	5.30E-06 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9206	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1
Vq	(ft^3)	2481.4286	2241.2904	2481.429	2401.3826	2481.429	2401.383	2481.429	2481.429	2401.383	2481.429	2401.383	2481.429	29216.82 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Density (vW(i))														
Triethylene Glycol	(lb/ft^3)	4.31E-08	5.12E-08	7.23E-08	1.16E-07	1.84E-07	2.65E-07	3.12E-07	2.83E-07	1.95E-07	1.06E-07	6.14E-08	4.69E-08	1.45E-07 (avg)
Working Losses (Lw)														
Triethylene Glycol	(lb)	1.00E-04	1.00E-04	2.00E-04	3.00E-04	5.00E-04	6.00E-04	8.00E-04	7.00E-04	5.00E-04	3.00E-04	1.00E-04	1.00E-04	4.30E-03 (sum)
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	1.49E-06	1.78E-06	2.55E-06	4.18E-06	6.77E-06	9.86E-06	1.17E-05	1.06E-05	7.14E-06	3.79E-06	2.15E-06	1.62E-06	5.30E-06 (avg)
dPv	(psia)	4.26E-07	7.35E-07	1.49E-06	3.17E-06	5.94E-06	8.97E-06	9.86E-06	7.31E-06	3.98E-06	1.57E-06	6.58E-07	4.26E-07	3.71E-06 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778 (avg)
ks	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Vv	(ft^3)	1349.7231	1349.7231	1349.723	1349.7231	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723 (avg)
KE	(number)	0.0164	0.0245	0.0377	0.0502	0.0597	0.063	0.0587	0.0476	0.0373	0.026	0.018	0.0147	0.037817 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	1.72E-06	2.19E-06	3.40E-06	6.03E-06	1.03E-05	1.53E-05	1.76E-05	1.48E-05	9.38E-06	4.64E-06	2.50E-06	1.84E-06	7.47E-06 (avg)
pln	(psia)	1.30E-06	1.45E-06	1.91E-06	2.86E-06	4.39E-06	6.29E-06	7.70E-06	7.49E-06	5.40E-06	3.08E-06	1.84E-06	1.41E-06	3.76E-06 (avg)
Compound Vapor Density (wV(i))														
Triethylene Glycol	(lb/ft^3)	4.31E-08	5.12E-08	7.23E-08	1.16E-07	1.84E-07	2.65E-07	3.12E-07	2.83E-07	1.95E-07	1.06E-07	6.14E-08	4.69E-08	1.45E-07 (avg)
Breathing Losses (Ls)														
Triethylene Glycol	(lb)	2.96E-05	4.74E-05	1.00E-04	2.00E-04	5.00E-04	7.00E-04	8.00E-04	6.00E-04	3.00E-04	1.00E-04	4.47E-05	2.88E-05	3.45E-03 (sum)
Total Losses (Lt)														
Triethylene Glycol	(lb)	1.30E-04	1.47E-04	3.00E-04	5.00E-04	1.00E-03	1.30E-03	1.60E-03	1.30E-03	8.00E-04	4.00E-04	1.45E-04	1.29E-04	7.75E-03 (sum)
Triethylene Glycol	(tpy)	6.48E-08	7.37E-08	1.50E-07	2.50E-07	5.00E-07	6.50E-07	8.00E-07	6.50E-07	4.00E-07	2.00E-07	7.24E-08	6.44E-08	3.88E-06 (sum)

Activity Title	Hilcorp TYK Dowfrost Tank (TK-111B)
Climate:	Alaska, Homer
pa	752.87 mmHg
Equipment Tag	Hilcorp TYK Glycol Tank
Storage Vessel Style	Dome Roof Storage
Calculation Type	Normal Storage Tank (11/2019 Rev.)
	Working and Breathing Loss Calculation
Void Space Volume	19203.63 gal
Working Volume	18213 gal
Working Volume	2434.7239 ft^3
Shell Diameter	10 ft
Straight Side Height	32 ft
Hro	0.686 ft
Paint Solar Absorptance	0.71
Roof Color / Condition	gray-medium / average
Shell Color / Condition	gray-medium / average
pbp	0.03
pbv	-0.03
Pi (constant)	3.1416
R (constant)	998.9

Vessel Contents (avg)	9107.000 gal	4.440 °C	78737.615 lb		1034.796 lb-M								
Mixture Name:	Dowfrost												
	[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)					
	Propylene Glycol	0.0151	78737.6146	1	1034.7958	1	1	0.0151					
Kp (product factor)	1												
HI	15.4941 ft												

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	18562.38	16766.0164	18562.38	17963.589	18562.38	17963.59	18562.38	18562.38	17963.59	18562.38	17963.59	18562.38	218557 (sum)
Vq	(ft^3)	2481.429	2241.2904	2481.429	2401.3826	2481.429	2401.383	2481.429	2481.429	2401.383	2481.429	2401.383	2481.429	29216.82 (sum)
N (period)	(number)	1.0192	0.9206	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
N (scaled to annual)	(number)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)														
Propylene Glycol	(Mv)	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09 (lb/lb-mole)

Compound Vapor Pressures (Pva)														
Propylene Glycol	(mmHg)	0.0051	0.0063	0.0095	0.0165	0.0283	0.0428	0.0517	0.0462	0.0299	0.0147	0.0077	0.0056	0.022025 (avg)

Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft^2day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	9.90E-05	1.00E-04	2.00E-04	3.00E-04	5.00E-04	8.00E-04	0.001	9.00E-04	6.00E-04	3.00E-04	1.00E-04	1.00E-04	4.17E-04 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9206	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1
Vq	(ft^3)	2481.429	2241.2904	2481.429	2401.3826	2481.429	2401.383	2481.429	2481.429	2401.383	2481.429	2401.383	2481.429	29216.82 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Density (vW(i))														
Propylene Glycol	(lb/ft^3)	1.45E-06	1.77E-06	2.63E-06	4.49E-06	7.55E-06	1.13E-05	1.35E-05	1.21E-05	8.00E-06	4.04E-06	2.16E-06	1.58E-06	5.88E-06 (avg)
Working Losses (Lw)														
Propylene Glycol	(lb)	0.0036	0.004	0.0065	0.0108	0.0187	0.0271	0.0335	0.0301	0.0192	0.01	0.0052	0.0039	0.1726 (sum)
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	9.90E-05	1.00E-04	2.00E-04	3.00E-04	5.00E-04	8.00E-04	0.001	9.00E-04	6.00E-04	3.00E-04	1.00E-04	1.00E-04	4.17E-04 (avg)
dPv	(psia)	3.33E-05	5.64E-05	1.00E-04	3.00E-04	5.00E-04	8.00E-04	9.00E-04	7.00E-04	4.00E-04	1.00E-04	5.28E-05	3.31E-05	3.31E-04 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778	17.1778 (avg)
ks	(number)	0.9999	0.9999	0.9998	0.9997	0.9995	0.9992	0.9991	0.9992	0.9995	0.9997	0.9999	0.9999	0.999608 (avg)
Vv	(ft^3)	1349.723	1349.7231	1349.723	1349.7231	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723	1349.723 (avg)
kE	(number)	0.0164	0.0245	0.0377	0.0503	0.0597	0.0631	0.0587	0.0476	0.0373	0.026	0.018	0.0147	0.037833 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	1.00E-04	2.00E-04	3.00E-04	5.00E-04	9.00E-04	0.0013	0.0016	0.0013	8.00E-04	4.00E-04	2.00E-04	1.00E-04	6.42E-04 (avg)
pln	(psia)	8.36E-05	9.60E-05	1.00E-04	2.00E-04	3.00E-04	5.00E-04	6.00E-04	6.00E-04	4.00E-04	2.00E-04	1.00E-04	9.28E-05	2.73E-04 (avg)
Compound Vapor Density (wV(i))														
Propylene Glycol	(lb/ft^3)	1.45E-06	1.77E-06	2.63E-06	4.49E-06	7.55E-06	1.13E-05	1.35E-05	1.21E-05	8.00E-06	4.04E-06	2.16E-06	1.58E-06	5.88E-06 (avg)
Breathing Losses (Ls)														
Propylene Glycol	(lb)	0.001	0.0016	0.0041	0.0091	0.0189	0.0288	0.0332	0.0242	0.0121	0.0044	0.0016	0.001	0.14 (sum)
Total Losses (Lt)														
Propylene Glycol	(lb)	4.60E-03	5.60E-03	1.07E-02	1.99E-02	3.76E-02	5.58E-02	6.67E-02	5.43E-02	3.13E-02	1.44E-02	6.80E-03	4.90E-03	3.13E-01 (sum)
Propylene Glycol	(tpy)	2.30E-06	2.80E-06	5.35E-06	9.95E-06	1.88E-05	2.79E-05	3.34E-05	2.72E-05	1.57E-05	7.20E-06	3.40E-06	2.45E-06	1.56E-04 (sum)

Activity Title	Hilcorp TYK Diesel Tank (TK-112A and TK-112B)
Climate:	Alaska, Homer
pa	752.87 mmHg
Equipment Tag	Hilcorp TYK Diesel Tank
Storage Vessel Style	Dome Roof Storage
Calculation Type	Normal Storage Tank (11/2019 Rev.) Working and Breathing Loss Calculation
Void Space Volume	64094.52 gal
Working Volume	61838 gal
Working Volume	8266.5382 ft^3
Shell Diameter	14 ft
Straight Side Height	54.7 ft
Hro	0.96 ft
Paint Solar Absorptance	0.71
Roof Color / Condition	gray-medium / average
Shell Color / Condition	gray-medium / average
pbp	0.03
pbv	-0.03
Pi (constant)	3.1416
R (constant)	998.9

Vessel Contents (avg)	30919.000 gal	4.440 °C	207538.060 lb	1598.633 lb-M										
Mixture Name:	Diesel No. 1 (with HAP)													
	[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)						
	1,2,4 - Trimethylbenzene	0.551	724.3078	0.00349	6.0264	0.00377	1	0.0021						
	2,2,4-Trimethylpentane	17.8363	14.5277	0.00007	0.1272	7.96E-05	1	0.0014						
	Benzene	30.2616	8.3015	0.00004	0.1063	6.65E-05	1	0.002						
	Biphenyl	7.00E-04	242.8195	0.00117	1.5746	0.000985	1	6.44E-07						
	Cumene	1.265	116.2213	0.00056	0.967	0.000605	1	8.00E-04						
	Diesel No. 1 (Misc VOC)	0.067	204999.869	0.98777	1576.9221	0.986419	1	0.0661						
	Ethylbenzene	2.7558	109.9952	0.00053	1.0361	0.000648	1	0.0018						
	Naphthalene	0.0153	591.4835	0.00285	4.6148	0.002887	1	4.41E-05						
	n-Hexane	59.2022	62.2614	0.0003	0.7225	0.000452	1	0.0268						
	Toluene	8.866	168.1058	0.00081	1.8247	0.001141	1	0.0101						
	Xylenes	2.4743	500.1667	0.00241	4.7114	0.002947	1	0.0073						
Kp (product factor)	1													
HI	26.8405 ft													

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	63023.425	56924.3836	63023.42	60990.411	63023.42	60990.41	63023.42	63023.42	60990.41	63023.42	60990.41	63023.42	742050 (sum)
Vq	(ft^3)	8425.0064	7609.6832	8425.006	8153.232	8425.006	8153.232	8425.006	8425.006	8153.232	8425.006	8153.232	8425.006	99197.66 (sum)
N (period)	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
N (scaled to annual)	(number)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)														
1,2,4 - Trimethylbenzene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
2,2,4-Trimethylpentane	(Mv)	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23 (lb/lb-mole)
Benzene	(Mv)	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11 (lb/lb-mole)
Biphenyl	(Mv)	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21 (lb/lb-mole)
Cumene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
Diesel No. 1 (Misc VOC)	(Mv)	130	130	130	130	130	130	130	130	130	130	130	130	130 (lb/lb-mole)
Ethylbenzene	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)
Naphthalene	(Mv)	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17 (lb/lb-mole)
n-Hexane	(Mv)	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754 (lb/lb-mole)
Toluene	(Mv)	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13 (lb/lb-mole)
Xylenes	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Pressures (Pva)														
1,2,4 - Trimethylbenzene	(mmHg)	0.0011	0.0012	0.0015	0.0022	0.0031	0.004	0.0046	0.0042	0.0032	0.002	0.0014	0.0011	0.002467 (avg)
2,2,4-Trimethylpentane	(mmHg)	9.00E-04	9.00E-04	0.0011	0.0015	0.0019	0.0024	0.0026	0.0024	0.002	0.0014	0.001	9.00E-04	1.58E-03 (avg)
Benzene	(mmHg)	0.0011	0.0012	0.0015	0.0021	0.0029	0.0036	0.004	0.0037	0.0029	0.002	0.0014	0.0011	0.002292 (avg)
Biphenyl	(mmHg)	1.72E-07	2.21E-07	3.63E-07	7.18E-07	1.40E-06	2.36E-06	2.99E-06	2.59E-06	1.50E-06	6.25E-07	2.83E-07	1.92E-07	1.12E-06 (avg)
Cumene	(mmHg)	4.00E-04	5.00E-04	6.00E-04	8.00E-04	0.0011	0.0014	0.0016	0.0015	0.0012	8.00E-04	5.00E-04	4.00E-04	9.00E-04 (avg)
Diesel No. 1 (Misc VOC)	(mmHg)	0.0089	0.0133	0.029	0.0767	0.1837	0.3449	0.453	0.3849	0.2006	0.0635	0.0198	0.0107	0.149083 (avg)
Ethylbenzene	(mmHg)	9.00E-04	0.0011	0.0013	0.0019	0.0026	0.0034	0.0038	0.0035	0.0027	0.0018	0.0012	0.001	2.10E-03 (avg)
Naphthalene	(mmHg)	1.86E-05	2.19E-05	3.03E-05	4.74E-05	7.35E-05	1.00E-04	1.00E-04	1.00E-04	7.70E-05	4.33E-05	2.57E-05	2.00E-05	5.48E-05 (avg)
n-Hexane	(mmHg)	0.0167	0.0182	0.0218	0.0278	0.0353	0.0426	0.0464	0.0441	0.0362	0.0265	0.0199	0.0174	0.029408 (avg)
Toluene	(mmHg)	0.0055	0.0062	0.0078	0.0106	0.0144	0.0181	0.0202	0.0189	0.0148	0.01	0.007	0.0058	0.011608 (avg)
Xylenes	(mmHg)	0.004	0.0044	0.0056	0.0077	0.0104	0.0133	0.0148	0.0139	0.0108	0.0072	0.005	0.0042	0.008442 (avg)
Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0001 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	
Vq	(ft³)	8425.0064	7609.6832	8425.006	8153.232	8425.006	8153.232	8425.006	8425.006	8153.232	8425.006	8153.232	8425.006	99197.66 (sum)
Compound Vapor Density (vW(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Working Losses (Lw)														
1,2,4 - Trimethylbenzene	(lb)	0.004	0.0041	0.0057	0.0077	0.011	0.0137	0.0159	0.0148	0.011	0.0075	0.0049	0.0042	0.1045 (sum)
2,2,4-Trimethylpentane	(lb)	0.0031	0.003	0.004	0.0049	0.0065	0.0076	0.0085	0.0081	0.0065	0.0049	0.0035	0.0032	0.0638 (sum)
Benzene	(lb)	0.0027	0.0027	0.0037	0.0048	0.0066	0.0079	0.009	0.0085	0.0066	0.0047	0.0032	0.0028	0.0632 (sum)
Biphenyl	(lb)	8.35E-07	9.59E-07	1.72E-06	3.23E-06	6.38E-06	1.02E-05	1.33E-05	1.16E-05	6.64E-06	2.93E-06	1.31E-06	9.28E-07	6.02E-05 (sum)
Cumene	(lb)	0.0015	0.0015	0.0021	0.0028	0.004	0.0049	0.0056	0.0053	0.004	0.0028	0.0019	0.0016	0.038 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0365	0.0488	0.1158	0.2908	0.7058	1.2639	1.7052	1.4572	0.7471	0.2505	0.0773	0.0435	6.7424 (sum)
Ethylbenzene	(lb)	0.0031	0.0032	0.0044	0.0058	0.0082	0.01	0.0116	0.0109	0.0082	0.0057	0.0038	0.0033	0.0782 (sum)
Naphthalene	(lb)	7.50E-05	7.89E-05	1.00E-04	2.00E-04	3.00E-04	4.00E-04	4.00E-04	4.00E-04	3.00E-04	2.00E-04	9.91E-05	8.02E-05	2.63E-03 (sum)
n-Hexane	(lb)	0.0452	0.0443	0.0577	0.0699	0.09	0.1035	0.1157	0.1106	0.0895	0.0693	0.0516	0.0469	0.8942 (sum)
Toluene	(lb)	0.016	0.0161	0.0221	0.0286	0.0391	0.0471	0.0538	0.0508	0.0391	0.0279	0.0192	0.0168	0.3766 (sum)
Xylenes	(lb)	0.0132	0.0133	0.0183	0.0237	0.0328	0.0398	0.0456	0.0429	0.0328	0.0232	0.0159	0.0139	0.3154 (sum)
VOC	(lb)	0.1254	0.1371	0.2339	0.4392	0.9043	1.4988	1.9713	1.7095	0.9451	0.3967	0.1814	0.1363	8.679 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
dPv	(psia)	2.00E-04	4.00E-04	0.001	0.0026	0.0062	0.0109	0.0127	0.0091	0.0042	0.0012	4.00E-04	2.00E-04	4.09E-03 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993	28.7993 (avg)
ks	(number)	0.9988	0.9986	0.9979	0.9961	0.9925	0.9874	0.984	0.9861	0.992	0.9966	0.9983	0.9987	0.993917 (avg)
Vv	(ft³)	4434.9219	4434.9219	4434.922	4434.9219	4434.922	4434.922	4434.922	4434.922	4434.922	4434.922	4434.922	4434.922	4434.922 (avg)
kE	(number)	0.0164	0.0245	0.0378	0.0504	0.0601	0.0638	0.0595	0.0482	0.0376	0.0261	0.018	0.0147	0.038092 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	9.00E-04	0.0011	0.0019	0.0042	0.0089	0.0154	0.0186	0.0147	0.0078	0.0029	0.0013	9.00E-04	6.55E-03 (avg)
pln	(psia)	7.00E-04	7.00E-04	0.001	0.0016	0.0027	0.0044	0.0059	0.0057	0.0036	0.0017	9.00E-04	7.00E-04	2.47E-03 (avg)
Compound Vapor Density (wV(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Breathing Losses (Ls)														
1,2,4 - Trimethylbenzene	(lb)	0.0011	0.0016	0.0035	0.0063	0.0107	0.014	0.0152	0.0115	0.0067	0.0032	0.0014	0.001	0.0762 (sum)
2,2,4-Trimethylpentane	(lb)	8.00E-04	0.0012	0.0025	0.004	0.0063	0.0078	0.0082	0.0063	0.0039	0.0021	0.001	8.00E-04	4.49E-02 (sum)
Benzene	(lb)	7.00E-04	0.0011	0.0023	0.0039	0.0064	0.0081	0.0086	0.0066	0.004	0.002	9.00E-04	7.00E-04	4.53E-02 (sum)
Biphenyl	(lb)	2.24E-07	3.83E-07	1.06E-06	2.65E-06	6.21E-06	1.05E-05	1.28E-05	9.03E-06	4.04E-06	1.24E-06	3.84E-07	2.22E-07	4.87E-05 (sum)
Cumene	(lb)	4.00E-04	6.00E-04	0.0013	0.0023	0.0039	0.005	0.0054	0.0041	0.0024	0.0012	5.00E-04	4.00E-04	2.75E-02 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0098	0.0195	0.0712	0.2384	0.6874	1.2985	1.6305	1.1305	0.4547	0.1061	0.0227	0.0104	5.6797 (sum)
Ethylbenzene	(lb)	8.00E-04	0.0013	0.0027	0.0048	0.008	0.0103	0.0111	0.0084	0.005	0.0024	0.0011	8.00E-04	5.67E-02 (sum)
Naphthalene	(lb)	2.01E-05	3.16E-05	7.34E-05	1.00E-04	3.00E-04	4.00E-04	4.00E-04	3.00E-04	2.00E-04	7.14E-05	2.91E-05	1.92E-05	1.94E-03 (sum)
n-Hexane	(lb)	0.0121	0.0177	0.0355	0.0573	0.0877	0.1063	0.1106	0.0858	0.0545	0.0293	0.0151	0.0112	0.6231 (sum)
Toluene	(lb)	0.0043	0.0064	0.0136	0.0234	0.0381	0.0484	0.0514	0.0394	0.0238	0.0118	0.0056	0.004	0.2702 (sum)
Xylenes	(lb)	0.0035	0.0053	0.0112	0.0195	0.0319	0.0409	0.0436	0.0333	0.02	0.0098	0.0047	0.0033	0.227 (sum)
VOC	(lb)	0.0335	0.0547	0.1439	0.3600	0.8807	1.5397	1.8850	1.3262	0.5752	0.1680	0.0530	0.0326	7.053 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Losses (Lt)														
1,2,4 - Trimethylbenzene	(lb)	0.0051	0.0057	0.0092	0.014	0.0217	0.0277	0.031	0.0263	0.0178	0.0106	0.0064	0.0052	0.1807 (sum)
2,2,4-Trimethylpentane	(lb)	0.0039	0.0042	0.0064	0.009	0.0128	0.0153	0.0167	0.0144	0.0104	0.0069	0.0046	0.0039	0.1085 (sum)
Benzene	(lb)	0.0034	0.0038	0.006	0.0088	0.013	0.016	0.0176	0.0151	0.0106	0.0067	0.0042	0.0035	0.1087 (sum)
Biphenyl	(lb)	1.06E-06	1.34E-06	2.78E-06	5.88E-06	1.26E-05	2.08E-05	2.61E-05	2.07E-05	1.07E-05	4.17E-06	1.69E-06	1.15E-06	1.09E-04 (sum)
Cumene	(lb)	0.0019	0.0022	0.0035	0.0051	0.0078	0.0099	0.011	0.0093	0.0064	0.0039	0.0024	0.002	0.0654 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0463	0.0684	0.187	0.5292	1.3931	2.5624	3.3357	2.5878	1.2018	0.3566	0.0999	0.0539	12.4221 (sum)
Ethylbenzene	(lb)	0.004	0.0044	0.0071	0.0106	0.0162	0.0204	0.0226	0.0193	0.0132	0.0081	0.0049	0.0041	0.1349 (sum)
Naphthalene	(lb)	9.51E-05	1.00E-04	2.00E-04	3.00E-04	5.00E-04	8.00E-04	9.00E-04	7.00E-04	5.00E-04	2.00E-04	1.00E-04	9.95E-05	4.49E-03 (sum)
n-Hexane	(lb)	0.0574	0.062	0.0932	0.1272	0.1777	0.2097	0.2263	0.1963	0.1439	0.0986	0.0667	0.0581	1.5171 (sum)
Toluene	(lb)	0.0203	0.0225	0.0357	0.052	0.0772	0.0955	0.1052	0.0901	0.063	0.0398	0.0249	0.0208	0.647 (sum)
Xylenes	(lb)	0.0168	0.0186	0.0295	0.0432	0.0647	0.0806	0.0892	0.0762	0.0528	0.033	0.0206	0.0172	0.5424 (sum)
VOC	(lb)	0.1592	0.1919	0.3778	0.7994	1.7847	3.0383	3.8562	3.0355	1.5204	0.5644	0.2347	0.1688	15.73 (sum)
Total Losses														
1,2,4 - Trimethylbenzene	(tpy)	2.55E-06	2.85E-06	4.60E-06	7.00E-06	1.09E-05	1.39E-05	1.55E-05	1.32E-05	8.90E-06	5.30E-06	3.20E-06	2.60E-06	9.04E-05 (sum)
2,2,4-Trimethylpentane	(tpy)	1.95E-06	2.10E-06	3.20E-06	4.50E-06	6.40E-06	7.65E-06	8.35E-06	7.20E-06	5.20E-06	3.45E-06	2.30E-06	1.95E-06	5.43E-05 (sum)
Benzene	(tpy)	1.70E-06	1.90E-06	3.00E-06	4.40E-06	6.50E-06	8.00E-06	8.80E-06	7.55E-06	5.30E-06	3.35E-06	2.10E-06	1.75E-06	5.44E-05 (sum)
Biphenyl	(tpy)	5.30E-10	6.71E-10	1.39E-09	2.94E-09	6.30E-09	1.04E-08	1.30E-08	1.03E-08	5.34E-09	2.08E-09	8.46E-10	5.75E-10	5.44E-08 (sum)
Cumene	(tpy)	9.50E-07	1.10E-06	1.75E-06	2.55E-06	3.90E-06	4.95E-06	5.50E-06	4.65E-06	3.20E-06	1.95E-06	1.20E-06	1.00E-06	3.27E-05 (sum)
Diesel No. 1 (Misc VOC)	(tpy)	2.32E-05	3.42E-05	9.35E-05	2.65E-04	6.97E-04	1.28E-03	1.67E-03	1.29E-03	6.01E-04	1.78E-04	5.00E-05	2.70E-05	6.21E-03 (sum)
Ethylbenzene	(tpy)	2.00E-06	2.20E-06	3.55E-06	5.30E-06	8.10E-06	1.02E-05	1.13E-05	9.65E-06	6.60E-06	4.05E-06	2.45E-06	2.05E-06	6.75E-05 (sum)
Naphthalene	(tpy)	4.75E-08	5.00E-08	1.00E-07	1.50E-07	2.50E-07	4.00E-07	4.50E-07	3.50E-07	2.50E-07	1.00E-07	5.00E-08	4.97E-08	2.25E-06 (sum)
n-Hexane	(tpy)	2.87E-05	3.10E-05	4.66E-05	6.36E-05	8.89E-05	1.05E-04	1.13E-04	9.82E-05	7.20E-05	4.93E-05	3.34E-05	2.91E-05	7.59E-04 (sum)
Toluene	(tpy)	1.02E-05	1.13E-05	1.79E-05	2.60E-05	3.86E-05	4.78E-05	5.26E-05	4.51E-05	3.15E-05	1.99E-05	1.25E-05	1.04E-05	3.24E-04 (sum)
Xylenes	(tpy)	8.40E-06	9.30E-06	1.48E-05	2.16E-05	3.24E-05	4.03E-05	4.46E-05	3.81E-05	2.64E-05	1.65E-05	1.03E-05	8.60E-06	2.71E-04 (sum)
VOC	(tpy)	7.96E-05	9.60E-05	1.89E-04	4.00E-04	8.92E-04	1.52E-03	1.93E-03	1.52E-03	7.60E-04	2.82E-04	1.17E-04	8.44E-05	7.87E-03 (sum)

Activity Title **Hilcorp Spartan 151 Diesel Tank #10**
Climate: Alaska, Homer
pa 752.87 mmHg
Equipment Tag Spartan 151 Diesel Storage Tank #10
Storage Vessel Style Horizontal Storage
Calculation Type Normal Storage Tank (11/2019 Rev.)
Working and Breathing Loss Calculation
Void Space Volume 34264.09 gal
Working Volume 32943 gal
Working Volume 4403.8385 ft^3
Shell Diameter 18 ft
Straight Side Height 18 ft
Paint Solar Absorptance 0.71
Roof Color / Condition gray-medium / average
Shell Color / Condition gray-medium / average
pbp 0.03
pbv -0.03
Pi (constant) 3.1416
R (constant) 998.9

Vessel Contents (avg)	16472.000 gal	4.440 °C	110565.248 lb	851.667 lb-M										
Mixture Name:	Diesel No. 1 (with HAP)													
[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)							
1,2,4 - Trimethylbenzene	0.551	385.8727	0.00349	3.2105	0.00377	1	0.0021							
2,2,4-Trimethylpentane	17.8363	7.7396	0.00007	0.0678	7.96E-05	1	0.0014							
Benzene	30.2616	4.4226	0.00004	0.0566	6.65E-05	1	0.002							
Biphenyl	7.00E-04	129.3613	0.00117	0.8389	0.000985	1	6.44E-07							
Cumene	1.265	61.9165	0.00056	0.5152	0.000605	1	8.00E-04							
Diesel No. 1 (Misc VOC)	0.067	109213.0354	0.98777	840.1003	0.986419	1	0.0661							
Ethylbenzene	2.7558	58.5996	0.00053	0.552	0.000648	1	0.0018							
Naphthalene	0.0153	315.111	0.00285	2.4585	0.002887	1	4.41E-05							
n-Hexane	59.2022	33.1696	0.0003	0.3849	0.000452	1	0.0268							
Toluene	8.866	89.5579	0.00081	0.9721	0.001141	1	0.0101							
Xylenes	2.4743	266.4622	0.00241	2.51	0.002947	1	0.0073							

Kp (product factor) 1

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	33574.7836	30325.611	33574.78	32491.726	33574.78	32491.73	33574.78	33574.78	32491.73	33574.78	32491.73	33574.78	395316 (sum)
Vq	(ft^3)	4488.2957	4053.9445	4488.296	4343.512	4488.296	4343.512	4488.296	4488.296	4343.512	4488.296	4343.512	4488.296	52846.06 (sum)
N (period)	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
N (scaled to annual)	(number)	12	12	12	12	12	12	12	12	12	12	12	12	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)

1,2,4 - Trimethylbenzene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
2,2,4-Trimethylpentane	(Mv)	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23 (lb/lb-mole)
Benzene	(Mv)	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11 (lb/lb-mole)
Biphenyl	(Mv)	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21 (lb/lb-mole)
Cumene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
Diesel No. 1 (Misc VOC)	(Mv)	130	130	130	130	130	130	130	130	130	130	130	130	130 (lb/lb-mole)
Ethylbenzene	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)
Naphthalene	(Mv)	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17 (lb/lb-mole)
n-Hexane	(Mv)	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754 (lb/lb-mole)
Toluene	(Mv)	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13 (lb/lb-mole)
Xylenes	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Pressures (Pva)														
1,2,4 - Trimethylbenzene	(mmHg)	0.0011	0.0012	0.0015	0.0022	0.0031	0.004	0.0046	0.0042	0.0032	0.002	0.0014	0.0011	0.002467 (avg)
2,2,4-Trimethylpentane	(mmHg)	9.00E-04	9.00E-04	0.0011	0.0015	0.0019	0.0024	0.0026	0.0024	0.002	0.0014	0.001	9.00E-04	1.58E-03 (avg)
Benzene	(mmHg)	0.0011	0.0012	0.0015	0.0021	0.0029	0.0036	0.004	0.0037	0.0029	0.002	0.0014	0.0011	0.002292 (avg)
Biphenyl	(mmHg)	1.72E-07	2.21E-07	3.63E-07	7.18E-07	1.40E-06	2.36E-06	2.99E-06	2.59E-06	1.50E-06	6.25E-07	2.83E-07	1.92E-07	1.12E-06 (avg)
Cumene	(mmHg)	4.00E-04	5.00E-04	6.00E-04	8.00E-04	0.0011	0.0014	0.0016	0.0015	0.0012	8.00E-04	5.00E-04	4.00E-04	9.00E-04 (avg)
Diesel No. 1 (Misc VOC)	(mmHg)	0.0089	0.0133	0.029	0.0767	0.1837	0.3449	0.453	0.3849	0.2006	0.0635	0.0198	0.0107	0.149083 (avg)
Ethylbenzene	(mmHg)	9.00E-04	0.0011	0.0013	0.0019	0.0026	0.0034	0.0038	0.0035	0.0027	0.0018	0.0012	0.001	2.10E-03 (avg)
Naphthalene	(mmHg)	1.86E-05	2.19E-05	3.03E-05	4.74E-05	7.35E-05	1.00E-04	1.00E-04	1.00E-04	7.70E-05	4.33E-05	2.57E-05	2.00E-05	5.48E-05 (avg)
n-Hexane	(mmHg)	0.0167	0.0182	0.0218	0.0278	0.0353	0.0426	0.0464	0.0441	0.0362	0.0265	0.0199	0.0174	0.029408 (avg)
Toluene	(mmHg)	0.0055	0.0062	0.0078	0.0106	0.0144	0.0181	0.0202	0.0189	0.0148	0.01	0.007	0.0058	0.011608 (avg)
Xylenes	(mmHg)	0.004	0.0044	0.0056	0.0077	0.0104	0.0133	0.0148	0.0139	0.0108	0.0072	0.005	0.0042	0.008442 (avg)
Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.00 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	
Vq	(ft³)	4488.2957	4053.9445	4488.296	4343.512	4488.296	4343.512	4488.296	4488.296	4343.512	4488.296	4343.512	4488.296	52846.06 (sum)
Compound Vapor Density (vW(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Working Losses (Lw)														
1,2,4 - Trimethylbenzene	(lb)	0.0021	0.0022	0.0031	0.0041	0.0059	0.0073	0.0084	0.0079	0.0059	0.004	0.0026	0.0022	0.0557 (sum)
2,2,4-Trimethylpentane	(lb)	0.0016	0.0016	0.0021	0.0026	0.0035	0.004	0.0045	0.0043	0.0034	0.0026	0.0019	0.0017	0.0338 (sum)
Benzene	(lb)	0.0014	0.0014	0.002	0.0026	0.0035	0.0042	0.0048	0.0045	0.0035	0.0025	0.0017	0.0015	0.0336 (sum)
Biphenyl	(lb)	4.45E-07	5.11E-07	9.18E-07	1.72E-06	3.40E-06	5.46E-06	7.10E-06	6.20E-06	3.54E-06	1.56E-06	6.97E-07	4.95E-07	3.20E-05 (sum)
Cumene	(lb)	8.00E-04	8.00E-04	0.0011	0.0015	0.0021	0.0026	0.003	0.0028	0.0021	0.0015	0.001	9.00E-04	2.02E-02 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0194	0.026	0.0617	0.1549	0.376	0.6733	0.9084	0.7763	0.398	0.1334	0.0412	0.0232	3.5918 (sum)
Ethylbenzene	(lb)	0.0017	0.0017	0.0023	0.0031	0.0044	0.0054	0.0062	0.0058	0.0044	0.003	0.002	0.0017	0.0417 (sum)
Naphthalene	(lb)	4.00E-05	4.20E-05	6.36E-05	9.44E-05	1.00E-04	2.00E-04	2.00E-04	2.00E-04	2.00E-04	8.97E-05	5.28E-05	4.28E-05	1.33E-03 (sum)
n-Hexane	(lb)	0.0241	0.0236	0.0308	0.0372	0.048	0.0551	0.0616	0.0589	0.0477	0.0369	0.0275	0.025	0.4764 (sum)
Toluene	(lb)	0.0085	0.0086	0.0118	0.0152	0.0208	0.0251	0.0286	0.027	0.0209	0.0149	0.0103	0.009	0.2007 (sum)
Xylenes	(lb)	0.0071	0.0071	0.0097	0.0126	0.0175	0.0212	0.0243	0.0229	0.0175	0.0123	0.0085	0.0074	0.1681 (sum)
VOC	(lb)	0.0667	0.0730	0.1247	0.2339	0.4818	0.7984	1.0500	0.9106	0.5036	0.2112	0.0968	0.0726	4.6234 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
dPv	(psia)	2.00E-04	4.00E-04	0.001	0.0026	0.0062	0.0109	0.0127	0.0091	0.0042	0.0012	4.00E-04	2.00E-04	4.09E-03 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686	7.0686 (avg)
ks	(number)	0.9997	0.9997	0.9995	0.999	0.9982	0.9969	0.996	0.9966	0.998	0.9992	0.9996	0.9997	0.998508 (avg)
Vv	(ft³)	2291.3882	2291.3882	2291.388	2291.3882	2291.388	2291.388	2291.388	2291.388	2291.388	2291.388	2291.388	2291.388	2291.388 (avg)
kE	(number)	0.0164	0.0245	0.0378	0.0504	0.0601	0.0638	0.0595	0.0482	0.0376	0.0261	0.018	0.0147	0.038092 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	9.00E-04	0.0011	0.0019	0.0042	0.0089	0.0154	0.0186	0.0147	0.0078	0.0029	0.0013	9.00E-04	6.55E-03 (avg)
pln	(psia)	7.00E-04	7.00E-04	0.001	0.0016	0.0027	0.0044	0.0059	0.0057	0.0036	0.0017	9.00E-04	7.00E-04	2.47E-03 (avg)
Compound Vapor Density (wV(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Breathing Losses (Ls)														
1,2,4 - Trimethylbenzene	(lb)	6.00E-04	8.00E-04	0.0018	0.0033	0.0056	0.0073	0.0079	0.006	0.0035	0.0016	7.00E-04	5.00E-04	3.96E-02 (sum)
2,2,4-Trimethylpentane	(lb)	4.00E-04	6.00E-04	0.0013	0.0021	0.0033	0.0041	0.0043	0.0033	0.002	0.0011	5.00E-04	4.00E-04	2.34E-02 (sum)
Benzene	(lb)	4.00E-04	6.00E-04	0.0012	0.002	0.0033	0.0042	0.0045	0.0035	0.0021	0.001	5.00E-04	3.00E-04	2.36E-02 (sum)
Biphenyl	(lb)	1.16E-07	1.98E-07	5.48E-07	1.37E-06	3.23E-06	5.49E-06	6.67E-06	4.71E-06	2.10E-06	6.43E-07	1.99E-07	1.15E-07	2.54E-05 (sum)
Cumene	(lb)	2.00E-04	3.00E-04	7.00E-04	0.0012	0.002	0.0026	0.0028	0.0021	0.0013	6.00E-04	3.00E-04	2.00E-04	1.43E-02 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0051	0.0101	0.0368	0.1235	0.3572	0.6774	0.8527	0.5903	0.2363	0.055	0.0117	0.0054	2.9615 (sum)
Ethylbenzene	(lb)	4.00E-04	7.00E-04	0.0014	0.0025	0.0041	0.0054	0.0058	0.0044	0.0026	0.0012	6.00E-04	4.00E-04	2.95E-02 (sum)
Naphthalene	(lb)	1.04E-05	1.63E-05	3.80E-05	7.52E-05	1.00E-04	2.00E-04	2.00E-04	2.00E-04	8.94E-05	3.70E-05	1.50E-05	9.93E-06	9.91E-04 (sum)
n-Hexane	(lb)	0.0063	0.0092	0.0184	0.0297	0.0456	0.0554	0.0578	0.0448	0.0283	0.0152	0.0078	0.0058	0.3243 (sum)
Toluene	(lb)	0.0022	0.0033	0.007	0.0121	0.0198	0.0252	0.0269	0.0206	0.0124	0.0061	0.0029	0.0021	0.1406 (sum)
Xylenes	(lb)	0.0018	0.0027	0.0058	0.0101	0.0166	0.0213	0.0228	0.0174	0.0104	0.0051	0.0024	0.0017	0.1181 (sum)
VOC	(lb)	0.0174	0.0283	0.0744	0.1866	0.4576	0.8031	0.9857	0.6926	0.2990	0.0869	0.0274	0.0168	3.6759 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Losses (Lt)														
1,2,4 - Trimethylbenzene	(lb)	0.0027	0.003	0.0049	0.0074	0.0114	0.0146	0.0164	0.0139	0.0094	0.0056	0.0034	0.0028	0.0955 (sum)
2,2,4-Trimethylpentane	(lb)	0.0021	0.0022	0.0034	0.0047	0.0067	0.0081	0.0088	0.0076	0.0055	0.0037	0.0024	0.0021	0.0573 (sum)
Benzene	(lb)	0.0018	0.002	0.0032	0.0046	0.0069	0.0085	0.0093	0.008	0.0056	0.0035	0.0022	0.0018	0.0574 (sum)
Biphenyl	(lb)	5.61E-07	7.09E-07	1.47E-06	3.09E-06	6.63E-06	1.10E-05	1.38E-05	1.09E-05	5.64E-06	2.20E-06	8.96E-07	6.09E-07	5.74E-05 (sum)
Cumene	(lb)	0.001	0.0011	0.0018	0.0027	0.0041	0.0052	0.0058	0.0049	0.0034	0.0021	0.0013	0.0011	0.0345 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0245	0.0361	0.0985	0.2785	0.7331	1.3507	1.7611	1.3666	0.6344	0.1884	0.0529	0.0285	6.5533 (sum)
Ethylbenzene	(lb)	0.0021	0.0023	0.0037	0.0056	0.0085	0.0107	0.0119	0.0102	0.007	0.0043	0.0026	0.0022	0.0711 (sum)
Naphthalene	(lb)	5.03E-05	5.84E-05	1.00E-04	2.00E-04	3.00E-04	4.00E-04	5.00E-04	4.00E-04	2.00E-04	1.00E-04	6.78E-05	5.27E-05	2.43E-03 (sum)
n-Hexane	(lb)	0.0304	0.0327	0.0491	0.0669	0.0935	0.1106	0.1195	0.1037	0.076	0.0521	0.0353	0.0308	0.8006 (sum)
Toluene	(lb)	0.0108	0.0119	0.0188	0.0273	0.0406	0.0503	0.0555	0.0476	0.0332	0.021	0.0132	0.011	0.3412 (sum)
Xylenes	(lb)	0.0089	0.0098	0.0155	0.0227	0.034	0.0425	0.0471	0.0403	0.0279	0.0174	0.0109	0.0091	0.2861 (sum)
VOC	(lb)	0.0844	0.1012	0.1990	0.4206	0.9391	1.6016	2.0359	1.6032	0.8026	0.2982	0.1243	0.0895	8.299 (sum)
Total Losses														
1,2,4 - Trimethylbenzene	(tpy)	1.35E-06	1.50E-06	2.45E-06	3.70E-06	5.70E-06	7.30E-06	8.20E-06	6.95E-06	4.70E-06	2.80E-06	1.70E-06	1.40E-06	4.78E-05 (sum)
2,2,4-Trimethylpentane	(tpy)	1.05E-06	1.10E-06	1.70E-06	2.35E-06	3.35E-06	4.05E-06	4.40E-06	3.80E-06	2.75E-06	1.85E-06	1.20E-06	1.05E-06	2.87E-05 (sum)
Benzene	(tpy)	9.00E-07	1.00E-06	1.60E-06	2.30E-06	3.45E-06	4.25E-06	4.65E-06	4.00E-06	2.80E-06	1.75E-06	1.10E-06	9.00E-07	2.87E-05 (sum)
Biphenyl	(tpy)	2.80E-10	3.54E-10	7.33E-10	1.55E-09	3.31E-09	5.48E-09	6.89E-09	5.46E-09	2.82E-09	1.10E-09	4.48E-10	3.05E-10	2.87E-08 (sum)
Cumene	(tpy)	5.00E-07	5.50E-07	9.00E-07	1.35E-06	2.05E-06	2.60E-06	2.90E-06	2.45E-06	1.70E-06	1.05E-06	6.50E-07	5.50E-07	1.73E-05 (sum)
Diesel No. 1 (Misc VOC)	(tpy)	1.23E-05	1.81E-05	4.93E-05	1.39E-04	3.67E-04	6.75E-04	8.81E-04	6.83E-04	3.17E-04	9.42E-05	2.65E-05	1.43E-05	3.28E-03 (sum)
Ethylbenzene	(tpy)	1.05E-06	1.15E-06	1.85E-06	2.80E-06	4.25E-06	5.35E-06	5.95E-06	5.10E-06	3.50E-06	2.15E-06	1.30E-06	1.10E-06	3.56E-05 (sum)
Naphthalene	(tpy)	2.52E-08	2.92E-08	5.00E-08	1.00E-07	1.50E-07	2.00E-07	2.50E-07	2.00E-07	1.00E-07	5.00E-08	3.39E-08	2.63E-08	1.21E-06 (sum)
n-Hexane	(tpy)	1.52E-05	1.64E-05	2.46E-05	3.35E-05	4.68E-05	5.53E-05	5.98E-05	5.19E-05	3.80E-05	2.61E-05	1.77E-05	1.54E-05	4.00E-04 (sum)
Toluene	(tpy)	5.40E-06	5.95E-06	9.40E-06	1.37E-05	2.03E-05	2.52E-05	2.78E-05	2.38E-05	1.66E-05	1.05E-05	6.60E-06	5.50E-06	1.71E-04 (sum)
Xylenes	(tpy)	4.45E-06	4.90E-06	7.75E-06	1.14E-05	1.70E-05	2.13E-05	2.36E-05	2.02E-05	1.40E-05	8.70E-06	5.45E-06	4.55E-06	1.43E-04 (sum)
VOC	(tpy)	4.22E-05	5.06E-05	9.95E-05	2.10E-04	4.70E-04	8.01E-04	1.02E-03	8.02E-04	4.01E-04	1.49E-04	6.21E-05	4.47E-05	4.15E-03 (sum)

Activity Title **Spartan 151 Diesel Tank #11**
Climate: Alaska, Homer
pa 752.87 mmHg
Equipment Tag Spartan 151 Diesel Storage Tank #11
Storage Vessel Style Horizontal Storage
Calculation Type Normal Storage Tank (11/2019 Rev.)
Working and Breathing Loss Calculation
Void Space Volume 734.4 gal
Working Volume 646 gal
Working Volume 86.3576 ft^3
Shell Diameter 5 ft
Straight Side Height 5 ft
Paint Solar Absorptance 0.71
Roof Color / Condition gray-medium / average
Shell Color / Condition gray-medium / average
pbp 0.03
pbv -0.03
Pi (constant) 3.1416
R (constant) 998.9

Vessel Contents (avg)	323.000 gal	4.440 °C	2168.078 lb	16.700 lb-M									
Mixture Name:	Diesel No. 1 (with HAP)												
	[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)					
	1,2,4 - Trimethylbenzene	0.551	7.5666	0.00349	0.063	0.00377	1	0.0021					
	2,2,4-Trimethylpentane	17.8363	0.1518	0.00007	0.0013	7.96E-05	1	0.0014					
	Benzene	30.2616	0.0867	0.00004	0.0011	6.65E-05	1	0.002					
	Biphenyl	7.00E-04	2.5367	0.00117	0.0164	0.000985	1	6.44E-07					
	Cumene	1.265	1.2141	0.00056	0.0101	0.000605	1	8.00E-04					
	Diesel No. 1 (Misc VOC)	0.067	2141.5621	0.98777	16.4736	0.986419	1	0.0661					
	Ethylbenzene	2.7558	1.1491	0.00053	0.0108	0.000648	1	0.0018					
	Naphthalene	0.0153	6.179	0.00285	0.0482	0.002887	1	4.41E-05					
	n-Hexane	59.2022	0.6504	0.0003	0.0075	0.000452	1	0.0268					
	Toluene	8.866	1.7561	0.00081	0.0191	0.001141	1	0.0101					
	Xylenes	2.4743	5.2251	0.00241	0.0492	0.002947	1	0.0073					

Kp (product factor) 1

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	658.389	594.674	658.389	637.1507	658.389	637.1507	658.389	658.389	637.1507	658.389	637.1507	658.389	7752 (sum)
Vq	(ft^3)	88.0138	79.4963	88.0138	85.1747	88.0138	85.1747	88.0138	88.0138	85.1747	88.0138	85.1747	88.0138	1036.292 (sum)
N (period)	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0 (sum)
N (scaled to annual)	(number)	12	12	12	12	12	12	12	12	12	12	12	12	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)

1,2,4 - Trimethylbenzene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
2,2,4-Trimethylpentane	(Mv)	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23 (lb/lb-mole)
Benzene	(Mv)	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11 (lb/lb-mole)
Biphenyl	(Mv)	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21 (lb/lb-mole)
Cumene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
Diesel No. 1 (Misc VOC)	(Mv)	130	130	130	130	130	130	130	130	130	130	130	130	130 (lb/lb-mole)
Ethylbenzene	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)
Naphthalene	(Mv)	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17 (lb/lb-mole)
n-Hexane	(Mv)	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754 (lb/lb-mole)
Toluene	(Mv)	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13 (lb/lb-mole)
Xylenes	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Pressures (Pva)														
1,2,4 - Trimethylbenzene	(mmHg)	0.0011	0.0012	0.0015	0.0022	0.0031	0.004	0.0046	0.0042	0.0032	0.002	0.0014	0.0011	0.002467 (avg)
2,2,4-Trimethylpentane	(mmHg)	9.00E-04	9.00E-04	0.0011	0.0015	0.0019	0.0024	0.0026	0.0024	0.002	0.0014	0.001	9.00E-04	1.58E-03 (avg)
Benzene	(mmHg)	0.0011	0.0012	0.0015	0.0021	0.0029	0.0036	0.004	0.0037	0.0029	0.002	0.0014	0.0011	0.002292 (avg)
Biphenyl	(mmHg)	1.72E-07	2.21E-07	3.63E-07	7.18E-07	1.40E-06	2.36E-06	2.99E-06	2.59E-06	1.50E-06	6.25E-07	2.83E-07	1.92E-07	1.12E-06 (avg)
Cumene	(mmHg)	4.00E-04	5.00E-04	6.00E-04	8.00E-04	0.0011	0.0014	0.0016	0.0015	0.0012	8.00E-04	5.00E-04	4.00E-04	9.00E-04 (avg)
Diesel No. 1 (Misc VOC)	(mmHg)	0.0089	0.0133	0.029	0.0767	0.1837	0.3449	0.453	0.3849	0.2006	0.0635	0.0198	0.0107	0.149083 (avg)
Ethylbenzene	(mmHg)	9.00E-04	0.0011	0.0013	0.0019	0.0026	0.0034	0.0038	0.0035	0.0027	0.0018	0.0012	0.001	2.10E-03 (avg)
Naphthalene	(mmHg)	1.86E-05	2.19E-05	3.03E-05	4.74E-05	7.35E-05	1.00E-04	1.00E-04	1.00E-04	7.70E-05	4.33E-05	2.57E-05	2.00E-05	5.48E-05 (avg)
n-Hexane	(mmHg)	0.0167	0.0182	0.0218	0.0278	0.0353	0.0426	0.0464	0.0441	0.0362	0.0265	0.0199	0.0174	0.029408 (avg)
Toluene	(mmHg)	0.0055	0.0062	0.0078	0.0106	0.0144	0.0181	0.0202	0.0189	0.0148	0.01	0.007	0.0058	0.011608 (avg)
Xylenes	(mmHg)	0.004	0.0044	0.0056	0.0077	0.0104	0.0133	0.0148	0.0139	0.0108	0.0072	0.005	0.0042	0.008442 (avg)
Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.00 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1
Vq	(ft³)	88.0138	79.4963	88.0138	85.1747	88.0138	85.1747	88.0138	88.0138	85.1747	88.0138	85.1747	88.0138	1036.292 (sum)
Compound Vapor Density (vW(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Working Losses (Lw)														
1,2,4 - Trimethylbenzene	(lb)	4.18E-05	4.25E-05	5.98E-05	8.04E-05	1.00E-04	1.00E-04	2.00E-04	2.00E-04	1.00E-04	7.80E-05	5.14E-05	4.40E-05	1.10E-03 (sum)
2,2,4-Trimethylpentane	(lb)	3.19E-05	3.15E-05	4.17E-05	5.15E-05	6.77E-05	7.91E-05	8.90E-05	8.47E-05	6.75E-05	5.08E-05	3.69E-05	3.32E-05	6.65E-04 (sum)
Benzene	(lb)	2.78E-05	2.80E-05	3.87E-05	5.03E-05	6.89E-05	8.27E-05	9.41E-05	8.90E-05	6.89E-05	4.92E-05	3.36E-05	2.92E-05	6.61E-04 (sum)
Biphenyl	(lb)	8.73E-09	1.00E-08	1.80E-08	3.37E-08	6.67E-08	1.07E-07	1.39E-07	1.22E-07	6.94E-08	3.06E-08	1.37E-08	9.70E-09	6.28E-07 (sum)
Cumene	(lb)	1.59E-05	1.61E-05	2.24E-05	2.95E-05	4.14E-05	5.08E-05	5.86E-05	5.50E-05	4.15E-05	2.88E-05	1.94E-05	1.68E-05	3.96E-04 (sum)
Diesel No. 1 (Misc VOC)	(lb)	4.00E-04	5.00E-04	0.0012	0.003	0.0074	0.0132	0.0178	0.0152	0.0078	0.0026	8.00E-04	5.00E-04	7.04E-02 (sum)
Ethylbenzene	(lb)	3.26E-05	3.30E-05	4.60E-05	6.09E-05	8.55E-05	1.00E-04	1.00E-04	1.00E-04	8.58E-05	5.93E-05	3.97E-05	3.42E-05	7.77E-04 (sum)
Naphthalene	(lb)	7.83E-07	8.25E-07	1.25E-06	1.85E-06	2.91E-06	3.90E-06	4.68E-06	4.29E-06	2.95E-06	1.76E-06	1.03E-06	8.38E-07	2.71E-05 (sum)
n-Hexane	(lb)	5.00E-04	5.00E-04	6.00E-04	7.00E-04	9.00E-04	0.0011	0.0012	0.0012	9.00E-04	7.00E-04	5.00E-04	5.00E-04	9.30E-03 (sum)
Toluene	(lb)	2.00E-04	2.00E-04	2.00E-04	3.00E-04	4.00E-04	5.00E-04	6.00E-04	5.00E-04	4.00E-04	3.00E-04	2.00E-04	2.00E-04	4.00E-03 (sum)
Xylenes	(lb)	1.00E-04	1.00E-04	2.00E-04	2.00E-04	3.00E-04	4.00E-04	5.00E-04	4.00E-04	3.00E-04	2.00E-04	2.00E-04	1.00E-04	3.00E-03 (sum)
VOC	(lb)	1.35E-03	1.45E-03	2.41E-03	4.47E-03	9.37E-03	1.56E-02	2.06E-02	1.78E-02	9.77E-03	4.07E-03	1.88E-03	1.46E-03	9.03E-02 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
dPv	(psia)	2.00E-04	4.00E-04	0.001	0.0026	0.0062	0.0109	0.0127	0.0091	0.0042	0.0012	4.00E-04	2.00E-04	4.09E-03 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635	1.9635 (avg)
ks	(number)	0.9999	0.9999	0.9999	0.9997	0.9995	0.9991	0.9989	0.999	0.9994	0.9998	0.9999	0.9999	0.999575 (avg)
Vv	(ft³)	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066	49.1066 (avg)
kE	(number)	0.0164	0.0245	0.0378	0.0504	0.0601	0.0638	0.0595	0.0482	0.0376	0.0261	0.018	0.0147	0.038092 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	9.00E-04	0.0011	0.0019	0.0042	0.0089	0.0154	0.0186	0.0147	0.0078	0.0029	0.0013	9.00E-04	6.55E-03 (avg)
pln	(psia)	7.00E-04	7.00E-04	0.001	0.0016	0.0027	0.0044	0.0059	0.0057	0.0036	0.0017	9.00E-04	7.00E-04	2.47E-03 (avg)
Compound Vapor Density (wV(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Breathing Losses (Ls)														
1,2,4 - Trimethylbenzene	(lb)	1.19E-05	1.80E-05	3.91E-05	7.01E-05	1.00E-04	2.00E-04	2.00E-04	1.00E-04	7.49E-05	3.51E-05	1.60E-05	1.12E-05	8.76E-04 (sum)
2,2,4-Trimethylpentane	(lb)	9.07E-06	1.33E-05	2.72E-05	4.49E-05	7.04E-05	8.71E-05	9.16E-05	7.06E-05	4.38E-05	2.29E-05	1.15E-05	8.43E-06	5.01E-04 (sum)
Benzene	(lb)	7.90E-06	1.19E-05	2.53E-05	4.39E-05	7.16E-05	9.11E-05	9.69E-05	7.42E-05	4.48E-05	2.22E-05	1.05E-05	7.41E-06	5.08E-04 (sum)
Biphenyl	(lb)	2.48E-09	4.25E-09	1.17E-08	2.94E-08	6.93E-08	1.18E-07	1.43E-07	1.01E-07	4.51E-08	1.38E-08	4.26E-09	2.46E-09	5.45E-07 (sum)
Cumene	(lb)	4.53E-06	6.83E-06	1.46E-05	2.57E-05	4.30E-05	5.60E-05	6.03E-05	4.58E-05	2.70E-05	1.30E-05	6.03E-06	4.25E-06	3.07E-04 (sum)
Diesel No. 1 (Misc VOC)	(lb)	1.00E-04	2.00E-04	8.00E-04	0.0026	0.0077	0.0145	0.0183	0.0127	0.0051	0.0012	3.00E-04	1.00E-04	6.36E-02 (sum)
Ethylbenzene	(lb)	9.26E-06	1.40E-05	3.00E-05	5.31E-05	8.89E-05	1.00E-04	1.00E-04	9.45E-05	5.57E-05	2.67E-05	1.24E-05	8.70E-06	5.93E-04 (sum)
Naphthalene	(lb)	2.23E-07	3.50E-07	8.15E-07	1.61E-06	3.02E-06	4.30E-06	4.82E-06	3.57E-06	1.92E-06	7.93E-07	3.22E-07	2.13E-07	2.20E-05 (sum)
n-Hexane	(lb)	1.00E-04	2.00E-04	4.00E-04	6.00E-04	0.001	0.0012	0.0012	0.001	6.00E-04	3.00E-04	2.00E-04	1.00E-04	6.90E-03 (sum)
Toluene	(lb)	4.77E-05	7.14E-05	2.00E-04	3.00E-04	4.00E-04	5.00E-04	6.00E-04	4.00E-04	3.00E-04	1.00E-04	6.26E-05	4.46E-05	3.03E-03 (sum)
Xylenes	(lb)	3.93E-05	5.89E-05	1.00E-04	2.00E-04	4.00E-04	5.00E-04	5.00E-04	4.00E-04	2.00E-04	1.00E-04	5.17E-05	3.68E-05	2.59E-03 (sum)
VOC	(lb)	3.30E-04	5.95E-04	1.64E-03	3.94E-03	9.88E-03	1.72E-02	2.12E-02	1.49E-02	6.45E-03	1.82E-03	6.71E-04	3.22E-04	7.89E-02 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Losses (Lt)														
1,2,4 - Trimethylbenzene	(lb)	5.37E-05	6.05E-05	9.89E-05	1.50E-04	2.00E-04	3.00E-04	4.00E-04	3.00E-04	1.75E-04	1.13E-04	6.74E-05	5.52E-05	1.97E-03 (sum)
2,2,4-Trimethylpentane	(lb)	4.10E-05	4.48E-05	6.89E-05	9.64E-05	1.38E-04	1.66E-04	1.81E-04	1.55E-04	1.11E-04	7.37E-05	4.84E-05	4.16E-05	1.17E-03 (sum)
Benzene	(lb)	3.57E-05	3.99E-05	6.40E-05	9.42E-05	1.41E-04	1.74E-04	1.91E-04	1.63E-04	1.14E-04	7.13E-05	4.41E-05	3.66E-05	1.17E-03 (sum)
Biphenyl	(lb)	1.12E-08	1.43E-08	2.97E-08	6.31E-08	1.36E-07	2.25E-07	2.83E-07	2.23E-07	1.14E-07	4.44E-08	1.79E-08	1.22E-08	1.17E-06 (sum)
Cumene	(lb)	2.05E-05	2.29E-05	3.70E-05	5.53E-05	8.44E-05	1.07E-04	1.19E-04	1.01E-04	6.85E-05	4.17E-05	2.54E-05	2.10E-05	7.03E-04 (sum)
Diesel No. 1 (Misc VOC)	(lb)	5.00E-04	7.00E-04	2.00E-03	5.60E-03	1.51E-02	2.77E-02	3.61E-02	2.79E-02	1.29E-02	3.80E-03	1.10E-03	6.00E-04	1.34E-01 (sum)
Ethylbenzene	(lb)	4.18E-05	4.69E-05	7.60E-05	1.14E-04	1.74E-04	2.00E-04	2.00E-04	1.95E-04	1.42E-04	8.60E-05	5.21E-05	4.29E-05	1.37E-03 (sum)
Naphthalene	(lb)	1.01E-06	1.17E-06	2.06E-06	3.46E-06	5.93E-06	8.21E-06	9.50E-06	7.87E-06	4.87E-06	2.55E-06	1.36E-06	1.05E-06	4.90E-05 (sum)
n-Hexane	(lb)	6.00E-04	7.00E-04	1.00E-03	1.30E-03	1.90E-03	2.30E-03	2.40E-03	2.20E-03	1.50E-03	1.00E-03	7.00E-04	6.00E-04	1.62E-02 (sum)
Toluene	(lb)	2.48E-04	2.71E-04	4.00E-04	6.00E-04	8.00E-04	1.00E-03	1.20E-03	9.00E-04	7.00E-04	4.00E-04	2.63E-04	2.45E-04	7.03E-03 (sum)
Xylenes	(lb)	1.39E-04	1.59E-04	3.00E-04	4.00E-04	7.00E-04	9.00E-04	1.00E-03	8.00E-04	5.00E-04	3.00E-04	2.52E-04	1.37E-04	5.59E-03 (sum)
VOC	(lb)	1.68E-03	2.05E-03	4.05E-03	8.41E-03	1.92E-02	3.29E-02	4.18E-02	3.27E-02	1.62E-02	5.89E-03	2.55E-03	1.78E-03	1.69E-01 (sum)
Total Losses														
1,2,4 - Trimethylbenzene	(tpy)	2.68E-08	3.02E-08	4.94E-08	7.52E-08	1.00E-07	1.50E-07	2.00E-07	1.50E-07	8.75E-08	5.66E-08	3.37E-08	2.76E-08	9.87E-07 (sum)
2,2,4-Trimethylpentane	(tpy)	2.05E-08	2.24E-08	3.44E-08	4.82E-08	6.90E-08	8.31E-08	9.03E-08	7.77E-08	5.56E-08	3.69E-08	2.42E-08	2.08E-08	5.83E-07 (sum)
Benzene	(tpy)	1.78E-08	2.00E-08	3.20E-08	4.71E-08	7.03E-08	8.69E-08	9.55E-08	8.16E-08	5.69E-08	3.57E-08	2.20E-08	1.83E-08	5.84E-07 (sum)
Biphenyl	(tpy)	5.60E-12	7.13E-12	1.49E-11	3.16E-11	6.80E-11	1.13E-10	1.41E-10	1.11E-10	5.72E-11	2.22E-11	8.97E-12	6.08E-12	5.87E-10 (sum)
Cumene	(tpy)	1.02E-08	1.15E-08	1.85E-08	2.76E-08	4.22E-08	5.34E-08	5.94E-08	5.04E-08	3.43E-08	2.09E-08	1.27E-08	1.05E-08	3.52E-07 (sum)
Diesel No. 1 (Misc VOC)	(tpy)	2.50E-07	3.50E-07	1.00E-06	2.80E-06	7.55E-06	1.39E-05	1.81E-05	1.40E-05	6.45E-06	1.90E-06	5.50E-07	3.00E-07	6.70E-05 (sum)
Ethylbenzene	(tpy)	2.09E-08	2.35E-08	3.80E-08	5.70E-08	8.72E-08	1.00E-07	1.00E-07	9.73E-08	7.08E-08	4.30E-08	2.60E-08	2.15E-08	6.85E-07 (sum)
Naphthalene	(tpy)	5.03E-10	5.87E-10	1.03E-09	1.73E-09	2.97E-09	4.10E-09	4.75E-09	3.93E-09	2.44E-09	1.28E-09	6.79E-10	5.26E-10	2.45E-08 (sum)
n-Hexane	(tpy)	3.00E-07	3.50E-07	5.00E-07	6.50E-07	9.50E-07	1.15E-06	1.20E-06	1.10E-06	7.50E-07	5.00E-07	3.50E-07	3.00E-07	8.10E-06 (sum)
Toluene	(tpy)	1.24E-07	1.36E-07	2.00E-07	3.00E-07	4.00E-07	5.00E-07	6.00E-07	4.50E-07	3.50E-07	2.00E-07	1.31E-07	1.22E-07	3.51E-06 (sum)
Xylenes	(tpy)	6.97E-08	7.95E-08	1.50E-07	2.00E-07	3.50E-07	4.50E-07	5.00E-07	4.00E-07	2.50E-07	1.50E-07	1.26E-07	6.84E-08	2.79E-06 (sum)
VOC	(tpy)	8.40E-07	1.02E-06	2.02E-06	4.21E-06	9.62E-06	1.64E-05	2.09E-05	1.64E-05	8.11E-06	2.94E-06	1.28E-06	8.90E-07	8.46E-05 (sum)

Activity Title **Spartan 151 Diesel Tank #12**
Climate: Alaska, Homer
pa 752.87 mmHg
Equipment Tag Spartan 151 Diesel Storage Tank #12
Storage Vessel Style Horizontal Storage
Calculation Type Normal Storage Tank (11/2019 Rev.)
Working and Breathing Loss Calculation
Void Space Volume 28864.79 gal
Working Volume 28663 gal
Working Volume 3831.6857 ft^3
Shell Diameter 17 ft
Straight Side Height 17 ft
Paint Solar Absorptance 0.71
Roof Color / Condition gray-medium / average
Shell Color / Condition gray-medium / average
pbp 0.03
pbv -0.03
Pi (constant) 3.1416
R (constant) 998.9

Vessel Contents (avg)	14332.000 gal	4.440 °C	96200.895 lb	741.020 lb-M										
Mixture Name:	Diesel No. 1 (with HAP)													
	[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)						
	1,2,4 - Trimethylbenzene	0.551	335.7411	0.00349	2.7934	0.00377	1	0.0021						
	2,2,4-Trimethylpentane	17.8363	6.7341	0.00007	0.059	7.96E-05	1	0.0014						
	Benzene	30.2616	3.848	0.00004	0.0493	6.65E-05	1	0.002						
	Biphenyl	7.00E-04	112.555	0.00117	0.7299	0.000985	1	6.44E-07						
	Cumene	1.265	53.8725	0.00056	0.4482	0.000605	1	8.00E-04						
	Diesel No. 1 (Misc VOC)	0.067	95024.3579	0.98777	730.9566	0.986419	1	0.0661						
	Ethylbenzene	2.7558	50.9865	0.00053	0.4803	0.000648	1	0.0018						
	Naphthalene	0.0153	274.1726	0.00285	2.1391	0.002887	1	4.41E-05						
	n-Hexane	59.2022	28.8603	0.0003	0.3349	0.000452	1	0.0268						
	Toluene	8.866	77.9227	0.00081	0.8458	0.001141	1	0.0101						
	Xylenes	2.4743	231.8442	0.00241	2.1839	0.002947	1	0.0073						

Kp (product factor) 1

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	29212.7	26385.6658	29212.7	28270.3562	29212.7	28270.36	29212.7	29212.7	28270.36	29212.7	28270.36	29212.7	343956 (sum)
Vq	(ft^3)	3905.17	3527.2504	3905.17	3779.1969	3905.17	3779.197	3905.17	3905.17	3779.197	3905.17	3779.197	3905.17	45980.23 (sum)
N (period)	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0001 (sum)
N (scaled to annual)	(number)	12	12	12	12	12	12	12	12	12	12	12	12	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)

1,2,4 - Trimethylbenzene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
2,2,4-Trimethylpentane	(Mv)	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23 (lb/lb-mole)
Benzene	(Mv)	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11 (lb/lb-mole)
Biphenyl	(Mv)	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21 (lb/lb-mole)
Cumene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
Diesel No. 1 (Misc VOC)	(Mv)	130	130	130	130	130	130	130	130	130	130	130	130	130 (lb/lb-mole)
Ethylbenzene	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)
Naphthalene	(Mv)	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17 (lb/lb-mole)
n-Hexane	(Mv)	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754 (lb/lb-mole)
Toluene	(Mv)	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13 (lb/lb-mole)
Xylenes	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Pressures (Pva)														
1,2,4 - Trimethylbenzene	(mmHg)	0.0011	0.0012	0.0015	0.0022	0.0031	0.004	0.0046	0.0042	0.0032	0.002	0.0014	0.0011	0.002467 (avg)
2,2,4-Trimethylpentane	(mmHg)	9.00E-04	9.00E-04	0.0011	0.0015	0.0019	0.0024	0.0026	0.0024	0.002	0.0014	0.001	9.00E-04	1.58E-03 (avg)
Benzene	(mmHg)	0.0011	0.0012	0.0015	0.0021	0.0029	0.0036	0.004	0.0037	0.0029	0.002	0.0014	0.0011	0.002292 (avg)
Biphenyl	(mmHg)	1.72E-07	2.21E-07	3.63E-07	7.18E-07	1.40E-06	2.36E-06	2.99E-06	2.59E-06	1.50E-06	6.25E-07	2.83E-07	1.92E-07	1.12E-06 (avg)
Cumene	(mmHg)	4.00E-04	5.00E-04	6.00E-04	8.00E-04	0.0011	0.0014	0.0016	0.0015	0.0012	8.00E-04	5.00E-04	4.00E-04	9.00E-04 (avg)
Diesel No. 1 (Misc VOC)	(mmHg)	0.0089	0.0133	0.029	0.0767	0.1837	0.3449	0.453	0.3849	0.2006	0.0635	0.0198	0.0107	0.149083 (avg)
Ethylbenzene	(mmHg)	9.00E-04	0.0011	0.0013	0.0019	0.0026	0.0034	0.0038	0.0035	0.0027	0.0018	0.0012	0.001	2.10E-03 (avg)
Naphthalene	(mmHg)	1.86E-05	2.19E-05	3.03E-05	4.74E-05	7.35E-05	1.00E-04	1.00E-04	1.00E-04	7.70E-05	4.33E-05	2.57E-05	2.00E-05	5.48E-05 (avg)
n-Hexane	(mmHg)	0.0167	0.0182	0.0218	0.0278	0.0353	0.0426	0.0464	0.0441	0.0362	0.0265	0.0199	0.0174	0.029408 (avg)
Toluene	(mmHg)	0.0055	0.0062	0.0078	0.0106	0.0144	0.0181	0.0202	0.0189	0.0148	0.01	0.007	0.0058	0.011608 (avg)
Xylenes	(mmHg)	0.004	0.0044	0.0056	0.0077	0.0104	0.0133	0.0148	0.0139	0.0108	0.0072	0.005	0.0042	0.008442 (avg)
Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	488.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.00 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	
Vq	(ft³)	3905.17	3527.2504	3905.17	3779.1969	3905.17	3779.197	3905.17	3905.17	3779.197	3905.17	3779.197	3905.17	45980.23 (sum)
Compound Vapor Density (vW(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Working Losses (Lw)														
1,2,4 - Trimethylbenzene	(lb)	0.0019	0.0019	0.0027	0.0036	0.0051	0.0063	0.0073	0.0069	0.0051	0.0035	0.0023	0.002	0.0486 (sum)
2,2,4-Trimethylpentane	(lb)	0.0014	0.0014	0.0018	0.0023	0.003	0.0035	0.004	0.0038	0.003	0.0023	0.0016	0.0015	0.0296 (sum)
Benzene	(lb)	0.0012	0.0012	0.0017	0.0022	0.0031	0.0037	0.0042	0.0039	0.0031	0.0022	0.0015	0.0013	0.0293 (sum)
Biphenyl	(lb)	3.87E-07	4.44E-07	7.99E-07	1.50E-06	2.96E-06	4.75E-06	6.18E-06	5.39E-06	3.08E-06	1.36E-06	6.07E-07	4.30E-07	2.79E-05 (sum)
Cumene	(lb)	7.00E-04	7.00E-04	0.001	0.0013	0.0018	0.0023	0.0026	0.0024	0.0018	0.0013	9.00E-04	7.00E-04	1.75E-02 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0169	0.0226	0.0537	0.1348	0.3271	0.5859	0.7904	0.6755	0.3463	0.1161	0.0358	0.0201	3.1252 (sum)
Ethylbenzene	(lb)	0.0014	0.0015	0.002	0.0027	0.0038	0.0047	0.0054	0.005	0.0038	0.0026	0.0018	0.0015	0.0362 (sum)
Naphthalene	(lb)	3.48E-05	3.66E-05	5.54E-05	8.21E-05	1.00E-04	2.00E-04	2.00E-04	2.00E-04	1.00E-04	7.81E-05	4.59E-05	3.72E-05	1.17E-03 (sum)
n-Hexane	(lb)	0.021	0.0205	0.0268	0.0324	0.0417	0.048	0.0536	0.0512	0.0415	0.0321	0.0239	0.0217	0.4144 (sum)
Toluene	(lb)	0.0074	0.0075	0.0102	0.0132	0.0181	0.0218	0.0249	0.0235	0.0181	0.0129	0.0089	0.0078	0.1743 (sum)
Xylenes	(lb)	0.0061	0.0062	0.0085	0.011	0.0152	0.0184	0.0211	0.0199	0.0152	0.0107	0.0074	0.0064	0.1461 (sum)
VOC	(lb)	0.0580	0.0635	0.1085	0.2036	0.4190	0.6948	0.9137	0.7923	0.4380	0.1838	0.0841	0.0630	4.0224 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
dPv	(psia)	2.00E-04	4.00E-04	0.001	0.0026	0.0062	0.0109	0.0127	0.0091	0.0042	0.0012	4.00E-04	2.00E-04	4.09E-03 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759	6.6759 (avg)
ks	(number)	0.9997	0.9997	0.9995	0.9991	0.9983	0.997	0.9962	0.9967	0.9981	0.9992	0.9996	0.9997	0.998567 (avg)
Vv	(ft³)	1930.247	1930.2468	1930.247	1930.2468	1930.247	1930.247	1930.247	1930.247	1930.247	1930.247	1930.247	1930.247	1930.247 (avg)
kE	(number)	0.0164	0.0245	0.0378	0.0504	0.0601	0.0638	0.0595	0.0482	0.0376	0.0261	0.018	0.0147	0.038092 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	9.00E-04	0.0011	0.0019	0.0042	0.0089	0.0154	0.0186	0.0147	0.0078	0.0029	0.0013	9.00E-04	6.55E-03 (avg)
pln	(psia)	7.00E-04	7.00E-04	0.001	0.0016	0.0027	0.0044	0.0059	0.0057	0.0036	0.0017	9.00E-04	7.00E-04	2.47E-03 (avg)
Compound Vapor Density (wV(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.38E-09	1.58E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Breathing Losses (Ls)														
1,2,4 - Trimethylbenzene	(lb)	5.00E-04	7.00E-04	0.0015	0.0028	0.0047	0.0062	0.0067	0.0051	0.0029	0.0014	6.00E-04	4.00E-04	3.35E-02 (sum)
2,2,4-Trimethylpentane	(lb)	4.00E-04	5.00E-04	0.0011	0.0018	0.0028	0.0034	0.0036	0.0028	0.0017	9.00E-04	5.00E-04	3.00E-04	1.98E-02 (sum)
Benzene	(lb)	3.00E-04	5.00E-04	0.001	0.0017	0.0028	0.0036	0.0038	0.0029	0.0018	9.00E-04	4.00E-04	3.00E-04	2.00E-02 (sum)
Biphenyl	(lb)	9.75E-08	1.67E-07	4.62E-07	1.16E-06	2.72E-06	4.63E-06	5.62E-06	3.97E-06	1.77E-06	5.41E-07	1.67E-07	9.68E-08	2.14E-05 (sum)
Cumene	(lb)	2.00E-04	3.00E-04	6.00E-04	0.001	0.0017	0.0022	0.0024	0.0018	0.0011	5.00E-04	2.00E-04	2.00E-04	1.22E-02 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0043	0.0085	0.031	0.1041	0.3009	0.5707	0.7185	0.4974	0.1991	0.0463	0.0099	0.0045	2.4952 (sum)
Ethylbenzene	(lb)	4.00E-04	5.00E-04	0.0012	0.0021	0.0035	0.0045	0.0049	0.0037	0.0022	0.001	5.00E-04	3.00E-04	2.48E-02 (sum)
Naphthalene	(lb)	8.76E-06	1.38E-05	3.20E-05	6.34E-05	1.00E-04	2.00E-04	2.00E-04	1.00E-04	7.53E-05	3.12E-05	1.27E-05	8.37E-06	8.45E-04 (sum)
n-Hexane	(lb)	0.0053	0.0077	0.0155	0.025	0.0384	0.0467	0.0487	0.0377	0.0238	0.0128	0.0066	0.0049	0.2731 (sum)
Toluene	(lb)	0.0019	0.0028	0.0059	0.0102	0.0167	0.0213	0.0227	0.0173	0.0104	0.0052	0.0025	0.0018	0.1187 (sum)
Xylenes	(lb)	0.0015	0.0023	0.0049	0.0085	0.014	0.018	0.0192	0.0146	0.0087	0.0043	0.002	0.0014	0.0994 (sum)
VOC	(lb)	0.0148	0.0238	0.0627	0.1573	0.3856	0.6768	0.8307	0.5834	0.2518	0.0733	0.0232	0.0141	3.0976 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Losses (Lb)														
1,2,4 - Trimethylbenzene	(lb)	0.0023	0.0026	0.0042	0.0063	0.0098	0.0125	0.014	0.0119	0.0081	0.0048	0.0029	0.0024	0.0818 (sum)
2,2,4-Trimethylpentane	(lb)	0.0018	0.0019	0.0029	0.004	0.0058	0.0069	0.0075	0.0065	0.0047	0.0032	0.0021	0.0018	0.0491 (sum)
Benzene	(lb)	0.0015	0.0017	0.0027	0.004	0.0059	0.0072	0.008	0.0069	0.0048	0.0031	0.0019	0.0016	0.0493 (sum)
Biphenyl	(lb)	4.85E-07	6.11E-07	1.26E-06	2.65E-06	5.68E-06	9.38E-06	1.18E-05	9.37E-06	4.85E-06	1.90E-06	7.74E-07	5.27E-07	4.93E-05 (sum)
Cumene	(lb)	9.00E-04	0.001	0.0016	0.0023	0.0035	0.0045	0.005	0.0042	0.0029	0.0018	0.0011	9.00E-04	2.97E-02 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0212	0.0312	0.0847	0.2389	0.628	1.1566	1.5089	1.1728	0.5454	0.1624	0.0457	0.0247	5.6205 (sum)
Ethylbenzene	(lb)	0.0018	0.002	0.0032	0.0048	0.0073	0.0092	0.0102	0.0087	0.006	0.0037	0.0022	0.0019	0.061 (sum)
Naphthalene	(lb)	4.35E-05	5.03E-05	8.74E-05	1.00E-04	2.00E-04	3.00E-04	4.00E-04	3.00E-04	2.00E-04	1.00E-04	5.86E-05	4.56E-05	1.89E-03 (sum)
n-Hexane	(lb)	0.0262	0.0282	0.0422	0.0574	0.0801	0.0947	0.1024	0.089	0.0653	0.0449	0.0305	0.0266	0.6875 (sum)
Toluene	(lb)	0.0093	0.0103	0.0162	0.0235	0.0348	0.0431	0.0476	0.0409	0.0286	0.0181	0.0114	0.0095	0.2933 (sum)
Xylenes	(lb)	0.0077	0.0085	0.0134	0.0195	0.0292	0.0364	0.0403	0.0345	0.024	0.015	0.0094	0.0079	0.2458 (sum)
VOC	(lb)	0.0727	0.0875	0.1712	0.3608	0.8046	1.3714	1.7443	1.3757	0.6900	0.2571	0.1073	0.0773	7.1199 (sum)
Total Losses														
1,2,4 - Trimethylbenzene	(tpy)	1.15E-06	1.30E-06	2.10E-06	3.15E-06	4.90E-06	6.25E-06	7.00E-06	5.95E-06	4.05E-06	2.40E-06	1.45E-06	1.20E-06	4.09E-05 (sum)
2,2,4-Trimethylpentane	(tpy)	9.00E-07	9.50E-07	1.45E-06	2.00E-06	2.90E-06	3.45E-06	3.75E-06	3.25E-06	2.35E-06	1.60E-06	1.05E-06	9.00E-07	2.46E-05 (sum)
Benzene	(tpy)	7.50E-07	8.50E-07	1.35E-06	2.00E-06	2.95E-06	3.60E-06	4.00E-06	3.45E-06	2.40E-06	1.55E-06	9.50E-07	8.00E-07	2.47E-05 (sum)
Biphenyl	(tpy)	2.42E-10	3.06E-10	6.30E-10	1.33E-09	2.84E-09	4.69E-09	5.90E-09	4.68E-09	2.42E-09	9.49E-10	3.87E-10	2.64E-10	2.46E-08 (sum)
Cumene	(tpy)	4.50E-07	5.00E-07	8.00E-07	1.15E-06	1.75E-06	2.25E-06	2.50E-06	2.10E-06	1.45E-06	9.00E-07	5.50E-07	4.50E-07	1.49E-05 (sum)
Diesel No. 1 (Misc VOC)	(tpy)	1.06E-05	1.56E-05	4.24E-05	1.19E-04	3.14E-04	5.78E-04	7.54E-04	5.86E-04	2.73E-04	8.12E-05	2.29E-05	1.24E-05	2.81E-03 (sum)
Ethylbenzene	(tpy)	9.00E-07	1.00E-06	1.60E-06	2.40E-06	3.65E-06	4.60E-06	5.10E-06	4.35E-06	3.00E-06	1.85E-06	1.10E-06	9.50E-07	3.05E-05 (sum)
Naphthalene	(tpy)	2.18E-08	2.52E-08	4.37E-08	5.00E-08	1.00E-07	1.50E-07	2.00E-07	1.50E-07	1.00E-07	5.00E-08	2.93E-08	2.28E-08	9.43E-07 (sum)
n-Hexane	(tpy)	1.31E-05	1.41E-05	2.11E-05	2.87E-05	4.01E-05	4.74E-05	5.12E-05	4.45E-05	3.27E-05	2.25E-05	1.53E-05	1.33E-05	3.44E-04 (sum)
Toluene	(tpy)	4.65E-06	5.15E-06	8.10E-06	1.18E-05	1.74E-05	2.16E-05	2.38E-05	2.05E-05	1.43E-05	9.05E-06	5.70E-06	4.75E-06	1.47E-04 (sum)
Xylenes	(tpy)	3.85E-06	4.25E-06	6.70E-06	9.75E-06	1.46E-05	1.82E-05	2.02E-05	1.73E-05	1.20E-05	7.50E-06	4.70E-06	3.95E-06	1.23E-04 (sum)
VOC	(tpy)	3.64E-05	4.37E-05	8.56E-05	1.80E-04	4.02E-04	6.86E-04	8.72E-04	6.88E-04	3.45E-04	1.29E-04	5.36E-05	3.87E-05	3.56E-03 (sum)

Activity Title **Spartan 151 Diesel Tank #13**
Climate: Alaska, Homer
pa 752.87 mmHg
Equipment Tag Spartan 151 Diesel Storage Tank #13
Storage Vessel Style Horizontal Storage
Calculation Type Normal Storage Tank (11/2019 Rev.)
Working and Breathing Loss Calculation
Void Space Volume 4283.01 gal
Working Volume 3305 gal
Working Volume 441.8142 ft^3
Shell Diameter 9 ft
Straight Side Height 9 ft
Paint Solar Absorptance 0.71
Roof Color / Condition gray-medium / average
Shell Color / Condition gray-medium / average
pbp 0.03
pbv -0.03
Pi (constant) 3.1416
R (constant) 998.9

Vessel Contents (avg)	1653.000 gal	4.440 °C	11095.456 lb	85.467 lb-M										
Mixture Name:	Diesel No. 1 (with HAP)													
	[Liquid]	mmHg	lb	W[i]	lb-M	X[i]	A[i]	X*Pi*Ai (mmHg)						
	1,2,4 - Trimethylbenzene	0.551	38.7231	0.00349	0.3222	0.00377	1	0.0021						
	2,2,4-Trimethylpentane	17.8363	0.7767	0.00007	0.0068	7.96E-05	1	0.0014						
	Benzene	30.2616	0.4438	0.00004	0.0057	6.65E-05	1	0.002						
	Biphenyl	7.00E-04	12.9817	0.00117	0.0842	0.000985	1	6.44E-07						
	Cumene	1.265	6.2135	0.00056	0.0517	0.000605	1	8.00E-04						
	Diesel No. 1 (Misc VOC)	0.067	10959.7588	0.98777	84.3058	0.986419	1	0.0661						
	Ethylbenzene	2.7558	5.8806	0.00053	0.0554	0.000648	1	0.0018						
	Naphthalene	0.0153	31.6221	0.00285	0.2467	0.002887	1	4.41E-05						
	n-Hexane	59.2022	3.3286	0.0003	0.0386	0.000452	1	0.0268						
	Toluene	8.866	8.9873	0.00081	0.0976	0.001141	1	0.0101						
	Xylenes	2.4743	26.74	0.00241	0.2519	0.002947	1	0.0073						

Kp (product factor) 1

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Q	(gal)	3368.384	3042.411	3368.384	3259.726	3368.384	3259.726	3368.384	3368.384	3259.726	3368.384	3259.726	3368.384	39660 (sum)
Vq	(ft^3)	450.2874	406.7112	450.2874	435.762	450.2874	435.762	450.2874	450.2874	435.762	450.2874	435.762	450.2874	5301.771 (sum)
N (period)	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.0001 (sum)
N (scaled to annual)	(number)	12	12	12	12	12	12	12	12	12	12	12	12	
Kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
Days	(number)	31	28	31	30	31	30	31	31	30	31	30	31	365 (sum)

Compound Molecular Weights (lb/lb-M)

1,2,4 - Trimethylbenzene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
2,2,4-Trimethylpentane	(Mv)	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23	114.23 (lb/lb-mole)
Benzene	(Mv)	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11	78.11 (lb/lb-mole)
Biphenyl	(Mv)	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21	154.21 (lb/lb-mole)
Cumene	(Mv)	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19	120.19 (lb/lb-mole)
Diesel No. 1 (Misc VOC)	(Mv)	130	130	130	130	130	130	130	130	130	130	130	130	130 (lb/lb-mole)
Ethylbenzene	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)
Naphthalene	(Mv)	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17	128.17 (lb/lb-mole)
n-Hexane	(Mv)	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754	86.1754 (lb/lb-mole)
Toluene	(Mv)	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13	92.13 (lb/lb-mole)
Xylenes	(Mv)	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16	106.16 (lb/lb-mole)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Compound Vapor Pressures (Pva)														
1,2,4 - Trimethylbenzene	(mmHg)	0.0011	0.0012	0.0015	0.0022	0.0031	0.004	0.0046	0.0042	0.0032	0.002	0.0014	0.0011	0.002467 (avg)
2,2,4-Trimethylpentane	(mmHg)	9.00E-04	9.00E-04	0.0011	0.0015	0.0019	0.0024	0.0026	0.0024	0.002	0.0014	0.001	9.00E-04	1.58E-03 (avg)
Benzene	(mmHg)	0.0011	0.0012	0.0015	0.0021	0.0029	0.0036	0.004	0.0037	0.0029	0.002	0.0014	0.0011	0.002292 (avg)
Biphenyl	(mmHg)	1.72E-07	2.21E-07	3.63E-07	7.18E-07	1.40E-06	2.36E-06	2.99E-06	2.59E-06	1.50E-06	6.25E-07	2.83E-07	1.92E-07	1.12E-06 (avg)
Cumene	(mmHg)	4.00E-04	5.00E-04	6.00E-04	8.00E-04	0.0011	0.0014	0.0016	0.0015	0.0012	8.00E-04	5.00E-04	4.00E-04	9.00E-04 (avg)
Diesel No. 1 (Misc VOC)	(mmHg)	0.0089	0.0133	0.029	0.0767	0.1837	0.3449	0.453	0.3849	0.2006	0.0635	0.0198	0.0107	0.149083 (avg)
Ethylbenzene	(mmHg)	9.00E-04	0.0011	0.0013	0.0019	0.0026	0.0034	0.0038	0.0035	0.0027	0.0018	0.0012	0.001	2.10E-03 (avg)
Naphthalene	(mmHg)	1.86E-05	2.19E-05	3.03E-05	4.74E-05	7.35E-05	1.00E-04	1.00E-04	1.00E-04	7.70E-05	4.33E-05	2.57E-05	2.00E-05	5.48E-05 (avg)
n-Hexane	(mmHg)	0.0167	0.0182	0.0218	0.0278	0.0353	0.0426	0.0464	0.0441	0.0362	0.0265	0.0199	0.0174	0.029408 (avg)
Toluene	(mmHg)	0.0055	0.0062	0.0078	0.0106	0.0144	0.0181	0.0202	0.0189	0.0148	0.01	0.007	0.0058	0.011608 (avg)
Xylenes	(mmHg)	0.004	0.0044	0.0056	0.0077	0.0104	0.0133	0.0148	0.0139	0.0108	0.0072	0.005	0.0042	0.008442 (avg)
Working Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
kb	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
kn	(number)	1	1	1	1	1	1	1	1	1	1	1	1	1 (avg)
n	(number)	1.0192	0.9205	1.0192	0.9863	1.0192	0.9863	1.0192	1.0192	0.9863	1.0192	0.9863	1.0192	12.00 (sum)
Kp (product factor)	(number)	1	1	1	1	1	1	1	1	1	1	1	1	
Vq	(ft³)	450.2874	406.7112	450.2874	435.762	450.2874	435.762	450.2874	450.2874	435.762	450.2874	435.762	450.2874	5301.771 (sum)
Compound Vapor Density (vW(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Working Losses (Lw)														
1,2,4 - Trimethylbenzene	(lb)	2.00E-04	2.00E-04	3.00E-04	4.00E-04	6.00E-04	7.00E-04	8.00E-04	8.00E-04	6.00E-04	4.00E-04	3.00E-04	2.00E-04	5.50E-03 (sum)
2,2,4-Trimethylpentane	(lb)	2.00E-04	2.00E-04	2.00E-04	3.00E-04	3.00E-04	4.00E-04	5.00E-04	4.00E-04	3.00E-04	3.00E-04	2.00E-04	2.00E-04	3.50E-03 (sum)
Benzene	(lb)	1.00E-04	1.00E-04	2.00E-04	3.00E-04	4.00E-04	4.00E-04	5.00E-04	5.00E-04	4.00E-04	3.00E-04	2.00E-04	1.00E-04	3.50E-03 (sum)
Biphenyl	(lb)	4.46E-08	5.12E-08	9.21E-08	1.73E-07	3.41E-07	5.48E-07	7.13E-07	6.22E-07	3.55E-07	1.56E-07	6.99E-08	4.96E-08	3.22E-06 (sum)
Cumene	(lb)	8.16E-05	8.23E-05	1.00E-04	2.00E-04	2.00E-04	3.00E-04	3.00E-04	3.00E-04	2.00E-04	1.00E-04	9.90E-05	8.57E-05	2.05E-03 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.002	0.0026	0.0062	0.0155	0.0377	0.0676	0.0911	0.0779	0.0399	0.0134	0.0041	0.0023	0.3603 (sum)
Ethylbenzene	(lb)	2.00E-04	2.00E-04	2.00E-04	3.00E-04	4.00E-04	5.00E-04	6.00E-04	6.00E-04	4.00E-04	3.00E-04	2.00E-04	2.00E-04	4.10E-03 (sum)
Naphthalene	(lb)	4.01E-06	4.22E-06	6.39E-06	9.47E-06	1.49E-05	2.00E-05	2.40E-05	2.20E-05	1.51E-05	9.00E-06	5.29E-06	4.29E-06	1.39E-04 (sum)
n-Hexane	(lb)	0.0024	0.0024	0.0031	0.0037	0.0048	0.0055	0.0062	0.0059	0.0048	0.0037	0.0028	0.0025	0.0478 (sum)
Toluene	(lb)	9.00E-04	9.00E-04	0.0012	0.0015	0.0021	0.0025	0.0029	0.0027	0.0021	0.0015	0.001	9.00E-04	2.02E-02 (sum)
Xylenes	(lb)	7.00E-04	7.00E-04	0.001	0.0013	0.0018	0.0021	0.0024	0.0023	0.0018	0.0012	8.00E-04	7.00E-04	1.68E-02 (sum)
VOC	(lb)	6.79E-03	7.39E-03	1.25E-02	2.35E-02	4.83E-02	8.00E-02	1.05E-01	9.14E-02	5.05E-02	2.12E-02	9.70E-03	7.19E-03	4.64E-01 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Breathing Loss Calculations (Uncontrolled)														
tan	(°R)	476.47	477.77	481.57	488.27	495.27	501.87	505.87	505.87	500.17	490.87	482.27	478.07	490.3617 (avg)
taa	(°R)	482.32	484.32	488.57	495.07	502.47	508.92	513.02	512.97	507.27	497.17	488.22	483.92	497.02 (avg)
tax	(°R)	488.17	490.87	495.57	501.87	509.67	515.97	520.17	520.07	514.37	503.47	494.17	489.77	503.6783 (avg)
tLn	(°F)	20.7584	22.7844	27.42	34.6149	42.3031	49.0203	52.8897	52.3345	46.1259	35.8535	26.6911	22.2843	36.09001 (avg)
tLa	(°F)	23.239	26.2626	32.5645	41.4253	50.4427	57.7038	61.0651	59.0405	51.4189	39.6098	29.3949	24.559	41.39384 (avg)
tLx	(°F)	25.7196	29.7408	37.7089	48.2357	58.5824	66.3874	69.2405	65.7464	56.712	43.3662	32.0986	26.8337	46.69768 (avg)
i	(Btu/ft²day)	122	334	759	1248	1583	1751	1598	1189	791	437	175	64	837.5833 (avg)
tb	(°R)	482.5799	485.0314	490.1867	497.7282	505.8418	512.6496	516.4237	515.5026	508.9548	498.1008	488.5927	484.0563	498.804 (avg)
pVa	(psia)	8.00E-04	9.00E-04	0.0014	0.0025	0.0049	0.0084	0.0107	0.0092	0.0053	0.0022	0.0011	8.00E-04	4.02E-03 (avg)
dPv	(psia)	2.00E-04	4.00E-04	0.001	0.0026	0.0062	0.0109	0.0127	0.0091	0.0042	0.0012	4.00E-04	2.00E-04	4.09E-03 (avg)
dPb	(psia)	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06 (avg)
dTv	(°R)	9.9224	13.9128	20.5778	27.2416	32.5586	34.7342	32.7016	26.8238	21.1722	15.0254	10.815	9.0988	21.21535 (avg)
hVo	(ft)	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343	3.5343 (avg)
ks	(number)	0.9999	0.9998	0.9997	0.9995	0.9991	0.9984	0.998	0.9983	0.999	0.9996	0.9998	0.9998	0.999242 (avg)
Vv	(ft³)	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235	286.4235 (avg)
kE	(number)	0.0164	0.0245	0.0378	0.0504	0.0601	0.0638	0.0595	0.0482	0.0376	0.0261	0.018	0.0147	0.038092 (avg)
tv	(°R)	483.1775	486.6677	493.905	503.8422	513.5969	521.2278	524.2523	521.3275	512.8299	500.2417	489.4501	484.3699	502.9074 (avg)
plx	(psia)	9.00E-04	0.0011	0.0019	0.0042	0.0089	0.0154	0.0186	0.0147	0.0078	0.0029	0.0013	9.00E-04	6.55E-03 (avg)
pln	(psia)	7.00E-04	7.00E-04	0.001	0.0016	0.0027	0.0044	0.0059	0.0057	0.0036	0.0017	9.00E-04	7.00E-04	2.47E-03 (avg)
Compound Vapor Density (wV(i))														
1,2,4 - Trimethylbenzene	(lb/ft³)	4.75E-07	5.34E-07	6.80E-07	9.44E-07	1.30E-06	1.68E-06	1.88E-06	1.76E-06	1.35E-06	8.86E-07	6.04E-07	5.00E-07	1.05E-06 (avg)
2,2,4-Trimethylpentane	(lb/ft³)	3.62E-07	3.96E-07	4.73E-07	6.05E-07	7.69E-07	9.28E-07	1.01E-06	9.63E-07	7.92E-07	5.77E-07	4.34E-07	3.77E-07	6.41E-07 (avg)
Benzene	(lb/ft³)	3.16E-07	3.53E-07	4.40E-07	5.91E-07	7.83E-07	9.71E-07	1.07E-06	1.01E-06	8.09E-07	5.59E-07	3.95E-07	3.32E-07	6.36E-07 (avg)
Biphenyl	(lb/ft³)	9.91E-11	1.26E-10	2.04E-10	3.96E-10	7.57E-10	1.26E-09	1.58E-09	1.38E-09	8.14E-10	3.47E-10	1.60E-10	1.10E-10	6.03E-10 (avg)
Cumene	(lb/ft³)	1.81E-07	2.02E-07	2.54E-07	3.47E-07	4.70E-07	5.97E-07	6.66E-07	6.25E-07	4.88E-07	3.27E-07	2.27E-07	1.90E-07	3.81E-07 (avg)
Diesel No. 1 (Misc VOC)	(lb/ft³)	4.33E-06	6.42E-06	1.37E-05	3.57E-05	8.38E-05	2.00E-04	2.00E-04	2.00E-04	9.16E-05	2.97E-05	9.48E-06	5.16E-06	7.33E-05 (avg)
Ethylbenzene	(lb/ft³)	3.70E-07	4.14E-07	5.22E-07	7.15E-07	9.71E-07	1.23E-06	1.37E-06	1.29E-06	1.01E-06	6.73E-07	4.66E-07	3.89E-07	7.85E-07 (avg)
Naphthalene	(lb/ft³)	8.90E-09	1.04E-08	1.42E-08	2.17E-08	3.30E-08	4.58E-08	5.32E-08	4.88E-08	3.47E-08	2.00E-08	1.21E-08	9.53E-09	2.60E-08 (avg)
n-Hexane	(lb/ft³)	5.37E-06	5.82E-06	6.85E-06	8.57E-06	1.07E-05	1.27E-05	1.37E-05	1.31E-05	1.10E-05	8.22E-06	6.33E-06	5.56E-06	8.99E-06 (avg)
Toluene	(lb/ft³)	1.90E-06	2.12E-06	2.62E-06	3.50E-06	4.64E-06	5.78E-06	6.38E-06	6.03E-06	4.80E-06	3.31E-06	2.36E-06	2.00E-06	3.79E-06 (avg)
Xylenes	(lb/ft³)	1.57E-06	1.75E-06	2.17E-06	2.91E-06	3.89E-06	4.88E-06	5.41E-06	5.09E-06	4.03E-06	2.75E-06	1.95E-06	1.65E-06	3.17E-06 (avg)
Breathing Losses (Ls)														
1,2,4 - Trimethylbenzene	(lb)	6.93E-05	1.00E-04	2.00E-04	4.00E-04	7.00E-04	9.00E-04	0.001	8.00E-04	4.00E-04	2.00E-04	9.35E-05	6.52E-05	4.93E-03 (sum)
2,2,4-Trimethylpentane	(lb)	5.29E-05	7.79E-05	2.00E-04	3.00E-04	4.00E-04	5.00E-04	5.00E-04	4.00E-04	3.00E-04	1.00E-04	6.71E-05	4.91E-05	2.95E-03 (sum)
Benzene	(lb)	4.61E-05	6.94E-05	1.00E-04	3.00E-04	4.00E-04	5.00E-04	6.00E-04	4.00E-04	3.00E-04	1.00E-04	6.11E-05	4.32E-05	2.92E-03 (sum)
Biphenyl	(lb)	1.45E-08	2.48E-08	6.85E-08	1.72E-07	4.04E-07	6.88E-07	8.35E-07	5.90E-07	2.63E-07	8.04E-08	2.48E-08	1.44E-08	3.18E-06 (sum)
Cumene	(lb)	2.64E-05	3.98E-05	8.52E-05	2.00E-04	3.00E-04	3.00E-04	4.00E-04	3.00E-04	2.00E-04	7.55E-05	3.52E-05	2.48E-05	1.99E-03 (sum)
Diesel No. 1 (Misc VOC)	(lb)	6.00E-04	0.0013	0.0046	0.0154	0.0447	0.0848	0.1068	0.0739	0.0296	0.0069	0.0015	7.00E-04	3.71E-01 (sum)
Ethylbenzene	(lb)	5.40E-05	8.16E-05	2.00E-04	3.00E-04	5.00E-04	7.00E-04	7.00E-04	6.00E-04	3.00E-04	2.00E-04	7.22E-05	5.07E-05	3.76E-03 (sum)
Naphthalene	(lb)	1.30E-06	2.04E-06	4.75E-06	9.41E-06	1.76E-05	2.51E-05	2.81E-05	2.08E-05	1.12E-05	4.62E-06	1.88E-06	1.24E-06	1.28E-04 (sum)
n-Hexane	(lb)	8.00E-04	0.0011	0.0023	0.0037	0.0057	0.0069	0.0072	0.0056	0.0035	0.0019	0.001	7.00E-04	4.04E-02 (sum)
Toluene	(lb)	3.00E-04	4.00E-04	9.00E-04	0.0015	0.0025	0.0032	0.0034	0.0026	0.0015	8.00E-04	4.00E-04	3.00E-04	1.78E-02 (sum)
Xylenes	(lb)	2.00E-04	3.00E-04	7.00E-04	0.0013	0.0021	0.0027	0.0029	0.0022	0.0013	6.00E-04	3.00E-04	2.00E-04	1.48E-02 (sum)
VOC	(lb)	2.15E-03	3.47E-03	9.29E-03	2.34E-02	5.73E-02	1.01E-01	1.24E-01	8.68E-02	3.74E-02	1.09E-02	3.53E-03	2.13E-03	4.60E-01 (sum)

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Total Losses (Lt)														
1,2,4 - Trimethylbenzene	(lb)	3.00E-04	3.00E-04	5.00E-04	8.00E-04	0.0013	0.0016	0.0018	0.0015	0.001	6.00E-04	4.00E-04	3.00E-04	1.04E-02 (sum)
2,2,4-Trimethylpentane	(lb)	2.00E-04	2.00E-04	4.00E-04	5.00E-04	8.00E-04	9.00E-04	0.001	8.00E-04	6.00E-04	4.00E-04	3.00E-04	2.00E-04	6.30E-03 (sum)
Benzene	(lb)	2.00E-04	2.00E-04	3.00E-04	5.00E-04	8.00E-04	0.001	0.001	9.00E-04	6.00E-04	4.00E-04	2.00E-04	2.00E-04	6.30E-03 (sum)
Biphenyl	(lb)	5.91E-08	7.60E-08	1.61E-07	3.44E-07	7.45E-07	1.24E-06	1.55E-06	1.21E-06	6.18E-07	2.37E-07	9.48E-08	6.40E-08	6.39E-06 (sum)
Cumene	(lb)	1.00E-04	1.00E-04	2.00E-04	3.00E-04	5.00E-04	6.00E-04	7.00E-04	5.00E-04	4.00E-04	2.00E-04	1.00E-04	1.00E-04	3.80E-03 (sum)
Diesel No. 1 (Misc VOC)	(lb)	0.0026	0.0039	0.0108	0.031	0.0824	0.1524	0.1979	0.1518	0.0695	0.0203	0.0056	0.003	0.7312 (sum)
Ethylbenzene	(lb)	2.00E-04	3.00E-04	4.00E-04	6.00E-04	0.001	0.0012	0.0013	0.0011	8.00E-04	5.00E-04	3.00E-04	2.00E-04	7.90E-03 (sum)
Naphthalene	(lb)	5.31E-06	6.26E-06	1.11E-05	1.89E-05	3.25E-05	4.50E-05	5.20E-05	4.28E-05	2.63E-05	1.36E-05	7.17E-06	5.53E-06	2.67E-04 (sum)
n-Hexane	(lb)	0.0032	0.0035	0.0054	0.0074	0.0105	0.0125	0.0134	0.0115	0.0083	0.0056	0.0037	0.0032	0.0882 (sum)
Toluene	(lb)	0.0011	0.0013	0.0021	0.003	0.0046	0.0057	0.0062	0.0053	0.0036	0.0023	0.0014	0.0012	0.0378 (sum)
Xylenes	(lb)	9.00E-04	0.0011	0.0017	0.0025	0.0038	0.0048	0.0053	0.0045	0.0031	0.0019	0.0012	0.001	3.18E-02 (sum)
VOC	(lb)	0.0088	0.0109	0.0218	0.0466	0.1057	0.1807	0.2287	0.1779	0.0879	0.0322	0.0132	0.0094	0.9240 (sum)
Total Losses														
1,2,4 - Trimethylbenzene	(tpy)	1.50E-07	1.50E-07	2.50E-07	4.00E-07	6.50E-07	8.00E-07	9.00E-07	7.50E-07	5.00E-07	3.00E-07	2.00E-07	1.50E-07	5.20E-06 (sum)
2,2,4-Trimethylpentane	(tpy)	1.00E-07	1.00E-07	2.00E-07	2.50E-07	4.00E-07	4.50E-07	5.00E-07	4.00E-07	3.00E-07	2.00E-07	1.50E-07	1.00E-07	3.15E-06 (sum)
Benzene	(tpy)	1.00E-07	1.00E-07	1.50E-07	2.50E-07	4.00E-07	5.00E-07	5.00E-07	4.50E-07	3.00E-07	2.00E-07	1.00E-07	1.00E-07	3.15E-06 (sum)
Biphenyl	(tpy)	2.96E-11	3.80E-11	8.03E-11	1.72E-10	3.72E-10	6.18E-10	7.74E-10	6.06E-10	3.09E-10	1.18E-10	4.74E-11	3.20E-11	3.20E-09 (sum)
Cumene	(tpy)	5.00E-08	5.00E-08	1.00E-07	1.50E-07	2.50E-07	3.00E-07	3.50E-07	2.50E-07	2.00E-07	1.00E-07	5.00E-08	5.00E-08	1.90E-06 (sum)
Diesel No. 1 (Misc VOC)	(tpy)	1.30E-06	1.95E-06	5.40E-06	1.55E-05	4.12E-05	7.62E-05	9.90E-05	7.59E-05	3.48E-05	1.02E-05	2.80E-06	1.50E-06	3.66E-04 (sum)
Ethylbenzene	(tpy)	1.00E-07	1.50E-07	2.00E-07	3.00E-07	5.00E-07	6.00E-07	6.50E-07	5.50E-07	4.00E-07	2.50E-07	1.50E-07	1.00E-07	3.95E-06 (sum)
Naphthalene	(tpy)	2.65E-09	3.13E-09	5.57E-09	9.44E-09	1.63E-08	2.25E-08	2.60E-08	2.14E-08	1.31E-08	6.81E-09	3.59E-09	2.77E-09	1.33E-07 (sum)
n-Hexane	(tpy)	1.60E-06	1.75E-06	2.70E-06	3.70E-06	5.25E-06	6.25E-06	6.70E-06	5.75E-06	4.15E-06	2.80E-06	1.85E-06	1.60E-06	4.41E-05 (sum)
Toluene	(tpy)	5.50E-07	6.50E-07	1.05E-06	1.50E-06	2.30E-06	2.85E-06	3.10E-06	2.65E-06	1.80E-06	1.15E-06	7.00E-07	6.00E-07	1.89E-05 (sum)
Xylenes	(tpy)	4.50E-07	5.50E-07	8.50E-07	1.25E-06	1.90E-06	2.40E-06	2.65E-06	2.25E-06	1.55E-06	9.50E-07	6.00E-07	5.00E-07	1.59E-05 (sum)
VOC	(tpy)	4.40E-06	5.45E-06	1.09E-05	2.33E-05	5.29E-05	9.04E-05	1.14E-04	8.90E-05	4.40E-05	1.61E-05	6.60E-06	4.70E-06	4.62E-04 (sum)

SECTION 10 - ELECTRONIC FILES (SEPARATE ZIP FOLDER)

AQ0091TVP02 Rev. 1 Final Permit and SOB 110116.pdf
AQ0091TVP03 Proposed Permit and SOB (HAK RLSO 2023).docx
AQ0091TVP03 Proposed Permit and SOB (HAK RLSO 2023).pdf
Emission Master Tanks_Calculation Details_All Tanks.pdf
Tyonek Criteria_GHG Emissions Estimates_Feb 2023_(Final).xlsx
Tyonek HAP Emissions_Feb 2023_(Final).xlsx
Tyonek Storage Tank Details and Emissions Summary_Feb 2023.xlsx

Tyonek Platform

Air Quality Operating Permit Renewal Application Permit No. AQ0091TVP02, Revision 1

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February 2023