TECHNICAL SUPPORT DOCUMENT
For
DRAFT/PROPOSED AIR EMISSION PERMIT NO. 16300003-020

This Technical Support Document (TSD) is intended for all parties interested in the draft/proposed permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft/proposed permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 2911)
Northern Tier Energy LLC P.O. Box 9 St. Paul Park, MN 55071	St. Paul Park Refining Co., LLC 301 Saint Paul Park Road St. Paul Park , Washington County, MN 55071
Contact: Mr. Mike Lukes, 651-458-2726	

1.2 Facility Description

St. Paul Park Refining Co., LLC (hereafter referred to as "SPPRC" or "Permittee") operates a Refinery ("refinery or "facility") located in the cities of St. Paul Park and Newport, Washington County, Minnesota. The refinery processes foreign and domestic crude oil into various products. Principal products produced are propane, gasoline, diesel fuel, distillate oils, kerosene, fuel oils, jet fuel, asphalt, and industrial grade sulfur. Products leave the refinery through tanker trucks, barges, railcars and product pipelines.

1.3 Description of any Changes Allowed with this Permit Issuance

This permit action is the reissuance of the Title V operating permit. The changes allowed with this permit reissuance that were not permitted before based on permit applications received includes a major amendment to install and operate fugitive emission components under New Source Performance Standards (NSPS), 40 CFR pt. 60, subps. GGGa and QQQ (DQ 4201), a moderate permit amendment to address physical changes related to the installation of an emergency diesel engine and associated pump to enhance the deluge system for the HF alkylation unit (DQ 4166), a minor amendment to increase the flashpoint of slurry produced by the fluidized catalytic cracking (FCC) regenerator (DQ 4190), a major amendment to incorporate the 2001Consent Decree requirements as amended (DQ 3961), a minor amendment for construction of a replacement heater for 8-B-1 heater (EU 094) (DQ 3469), an administrative amendment for a 120 day performance test extension for the light oil rack vapor

Permit Number and Issuance Date	Action Authorized
	of compliance was issued by the MPCA as a result of a performance test conducted on 38B-1 and 38B-2 heaters (EU 028 and EU 029). Based on the results the heaters duty load limit was added to the permit.
16300003-010 August 16, 2004	Major amendment authorized the installation and operation of a temporary natural gas-fired boiler with a maximum heat input capacity of 88.4 mmBtu/yr. In addition, the permit addressed changes to permit conditions in the existing Part 70 permit, which were based on permits that were issued on May 23, 1986, and June 1, 1992.
16300003-011 November 30, 2005	A major amendment that included 3 administrative amendments, and 2 minor amendments. The major amendment addressed clean fuels project which involved physical changes to the distillate desulfurizer unit (FS 026) and heavy distillate hydrotreater (FS 022) process units, which caused an increase in VOC fugitive emissions from the project. In addition, SO_2 emissions from startup and shutdown of new reactors vented to the flare (CE005), and other emission units at the facility have gone through an increased in utilization (debottlenecking) including: HDH charge heater (EU 017), Sulfur Recovery unit (EU 019), No. 4 boiler (EU 020), and Hydrogen plant heaters (EU 028 and EU 029). Also, permit conditions related to 40 CFR Section 52.21(r) were incorporated into the permit. A construction authorization letter for the modification of NSPS affected facility was sent to the Permittee on February 16, 2005. Minor amendments incorporated emission limitations as required by the NSR Consent Decree, United States of American et. al. V. Marathon Ashland Petroleum LLC (MPC) , as lodged May 11, 2001, and entered on August 28, 2001. The permit action incorporated the NSPS, 40 CFR pt. 60, subp. J, PM, SO_2 and CO limits for FCC Regenerator (EU 004). The compliance date of each pollutant limit varies, and was dependent on the timetable agreed between EPA and MPC. In addition, based on the Consent Decree, MPC was required to upgrade its oily wastewater sewer system to meet NSPS, 40 CFR pt. 60, subp. QQQ. There were several administrative amendments to address extension of stack test dates for several emission units; notification of installation of pollution control equipment to comply with the NSPS, 40 CFR pt. 60, subp. QQQ and requested a name change of the facility to “Marathon Petroleum Company LLC” (MPC)

Permit Number and Issuance Date	Action Authorized
16300003-018 September 9, 2011	Major amendment that incorporated physical changes related to the installation of a Safety Instrumented System on the No. 1 Reformer (FS 003), No. 1 Crude/Vacuum Unit (FS 001) and the HF Alkylation Unit (FS 017). These units were subject to 40 CFR pt. 60, subp. GGGa and were placed in GP 033 with FS 002 and FS 066, already subject to NSPS Subpart. GGGa. The GGGa requirements were already in the permit under FS 002 and FS 066; therefore these sources were moved to the GP 033 level in the permit. The facility name was changed to Saint Paul Park Refining Co., LLC and corporate owner was changed to Northern Tier Energy, LLC (both formerly Marathon Petroleum Co., LLC).
16300003-019 July 13, 2012	Major amendment incorporated physical changes related to the installation of Safety Instrumented Systems on the #2 Crude Vacuum (FS 005), and Sat Gas/Dehexanizer Unit (FS 010). Modifications were made to the Gas Con Unit (FS 009), Foul Water System (FS 019) and Amine System (FS 020). Each of these FS units was subject to 40 CFR pt. 60, subp. GGGa and placed in GP 033.

1.5 Facility Emissions:

Table 2a. Title I Emissions Increase Summary – Major Amendment to Revamp #2 Crude Heater

Pollutant	Projected Actual Emissions Increase [(a)] from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	PSD Significant Thresholds for major sources (tpy)	NSR Review Required? (Yes or No)
PM	1.57	1.57	25	No
PM_{10}	1.64	1.64	15	No
$PM_{2.5}$	1.64	1.64	10	No
NO_x	38.2	38.2	40	No
SO_2	3.84	3.84	40	No
CO	33.41	33.41	100	No
Ozone (VOC)	35.8	35.8	40	No
Lead	0	0	0.6	No
CO_2e**	61,227	61,227	75,000	No

Table 2b. Title I Emissions Increase Summary – Minor Amendment to Increase the Flashpoint of Slurry Produced by the FCCU Reduce Slurry Rundown Temperatures and Improve Slurry Fines Settling

Pollutant	Potential Emissions Increase [(a)] from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	PSD Significant Thresholds for major sources (tpy)	NSR Review Required? (Yes or No)
PM	3.29	3.29	25	No
PM_{10}	2.30	2.30	15	No
$PM_{2.5}$	1.31	1.31	10	No
NO_x	4.71	4.71	40	No
SO_2	3.13	3.13	40	No
CO	4.31	4.31	100	No
Ozone (VOC)	9.03	9.03	40	No
Lead	0	0	0.6	No
CO_2e**	16,903	16,903	75,000	No

Table 2c. Title I Emissions Increase Summary – Moderate Amendment to Install an Emergency Diesel Engine and Associated Water Pump

Pollutant	Potential Emissions Increase [(a)] from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	PSD Significant Thresholds for major sources (tpy)	NSR Review Required? (Yes or No)
PM	0.08	0.080	25	No
PM_{10}	0.08	0.080	15	No
$PM_{2.5}$	0.08	0.080	10	No
NO_x	2.63	2.63	40	No
SO_2	0.003	0.0030	40	No
CO	1.44	1.44	100	No
Ozone (VOC)	2.63	2.63	40	No
Lead	0	0	0.6	No
CO_2e**	286	286	75,000	No

Table 2d. Title I Emissions Increase Summary – Minor Amendment to Replace Heater 8-B-1

Pollutant	Potential Emissions Increase [(a)] from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	PSD Significant Thresholds for major sources (tpy)	NSR Review Required? (Yes or No)
PM	1.3	1.3	25	No

	Section 116.07; Minn. R. 7007.0100, Minn. R. 7009.0010-0080	Quality Standards (MAAQS).
TF	40 CFR pts. 60 and 61	Standards of Performance for General Provisions and National Emission Standards for Hazardous Air Pollutants.
TF	40 CFR pt. 63, subp. DDDDD	Place Holders for National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters for Existing Major Sources to comply with the requirements by the compliance date 1/31/2016.
TF	Title I Condition: CAAA of 1990	Requirements from the revised 2005 Consent Decree to comply with the benzene waste NESHAP.
GP 002 (Refinery Heaters)	Title I Limits to avoid 40 CFR § 52.21 major source modification	Limit was accepted by the source to limit NOx.
GP 004 (H2S CEMS associated with all process heaters)	Title I SIP limits for SO_2 NAAQS	State Implementation Plan (SIP): The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
GP 005 (Hydrogen Plant Heaters)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity.
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435	Standards of Performance for Petroleum Refineries for which Construction, Reconstruction, or Modification commenced after June 11, 1973, and or before May 14, 2007. The standard restricts SO_2 from the fuel gas combustion.
	Title I limits per CAAA of	2001 EPA Consent Decree Requirement, as amended

	1990	for NOx.
GP 006 (Fuel combustion devices using refinery oil)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Title I limits per CAAA of 1990	2001 EPA Consent Decree Requirements, as amended for SO_2.
GP 008 (Tanks subject to NSPS UU)	40 CFR pt. 60, subps. A, Kb, and UU; 40 CFR pt. 63, subp. CC; Minn. R. 7011.1520; Minn. R. 7011.7280 (B); Minn. R. 7011.7011.7280	Standards of Performance for Petroleum Liquids Storage Vessels for which construction, modification or reconstruction after July 23, 1984. National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries – Storage Tanks.
GP 009 (NESHAP subp CC tanks; No NSPS)	40 CFR pt. 63, subp. CC; Minn. R. 7011.7280(A)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries
	40 CFR pt. 63, subp. G; Minn. R. 7011.7040(B)	National Emission Standards for Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations and Wastewater.
GP 010 (NESHAP subp CC tanks w/ NSPS K overlap)	40 CFR pt. 60, subps. A, K or Ka; Minn. R. 7011.1520	Standards of Performance for Petroleum Liquids Storage Vessels for which construction, modification or reconstruction after March 8, 1974, and before May 19, 1978 or after May 18, 1978, and before July 23, 1984.
	40 CFR pt. 63, subps. G and CC; Minn. Rs. 7011.7040(B) and 7011.7280(A)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries and Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations and Wastewater.
GP 011 (NESHAP subp CC tanks w/ NSPS Kb overlap)	40 CFR pt. 60, subps. A, K or Ka; Minn. R. 7011.1520	Standards of Performance for Petroleum Liquids Storage Vessels for which construction, modification or reconstruction after July 23, 1984.
	40 CFR pt. 63, subp. CC; Minn. R. 7011.7280(A)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries.

GP 013 (NESHAP subp CC tanks w/ NSPS Kb and QQQ and NESHAP FF)	40 CFR pt. 60, subps. A, K or Ka; Minn. R. 7011.1520	Standards of Performance for Petroleum Liquids Storage Vessels for which construction, modification or reconstruction after July 23, 1984.
	40 CFR pt. 63, subp. CC; Minn. R. 7011.7280(A)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries.
GP 015 (FS subject to QQQ-Wastewater NSPS)	40 CFR pt. 60, subp. A; Minn. R. 7011.0050	General Provisions of Federal New Source Performance Standards
	40 CFR pt. 60, subp. QQQ; Minn. R. 7011.1435(C)	Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems
GP 017 (Storage Tanks Heaters)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity.
GP 019 (Wastewater Treatment Plant System)	40 CFR pt. 61, subp. FF; Minn. R. 7011.9930(E)	National Emission Standard for Benzene Waste Operations Rule limits benzene emissions.
GP 022 (MACT Units)	40 CFR pt. 60, subp. GGGa	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced after November 7, 2006.
	40 CFR pt. 63, subp. CC; Minn. R. 7011.7280(A)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries.
GP 022 (MACT Units)	40 CFR pt. 60, subp. GGGa	National Emission Standard for Benzene Waste Operations. Rule limits benzene emissions.
GP 023 (Portable	Title I SIP limits for SO_2	The SIP conditions have special status and remain non-

Diesel Engines covered include portable diesel pump, compressors, generators, etc.)	NAAQS	expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Title I Limits to avoid 40 CFR § 52.21 major source modification	Limits to avoid major modification for PM and PM_{10}.
	40 CFR § 52.21 and Minn. R. 7007.3000; 40 CFR pt. 50	Modeling Limits for NOx.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines. The rule limits SO_2 and Opacity.
GP 026 (No. 2 SRU, Hydrogen Plant Heaters and Distillate Desulfurization Heaters)	Title I Limits to avoid 40 CFR § 52.21 major source modification	Limit to avoid major source modification for NOx.
	Title I limits per CAAA of 1990	2001 EPA Consent Decree Requirements, as amended for SO_2.
GP 027 (Tanks subject to Benzene Waste NESHAP w/NSPS Kb overlap)	40 CFR pt. 63, subp. G; 40 CFR pt. 60, subp. Kb; Minn. R. 7011.7040(B); Minn. R. 7011.1520	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries and Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations and Wastewater and for Petroleum Liquids Storage Vessels for which construction, modification or reconstruction after July 23, 1984.
GP 028 (Water Seal Control to comply with Benzene Waste NESHAP)	40 CFR pt. 61, subp. FF; Minn. R. 7011.9930(E)	National Emission Standard for Benzene Waste Operations Rule limits benzene emissions.
GP 030 (Control Device Required for Benzene	40 CFR pt. 61, subp. FF; Minn. R. 7011.9930(E)	National Emission Standard for Benzene Waste Operations

Waste NESHAP)		Rule limits benzene emissions.
GP 031 (Loading Rack Vapor Combustor, Hoods, & Other Enclosures)	40 CFR pt. 60, subp. XX; Minn. R. 7011.1550	Standards of Performance for Bulk Gasoline Terminals for which construction or medication after December 17, 1980.
	40 CFR pt. 63, subp. R; Minn. R. 7011.7180	National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations).
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
	40 CFR pt. 64	Unit is an other PSEU (for VOC/HAPs controls)
GP 032 (Boilers 7 & 8)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Title I Limits to avoid 40 CFR § 52.21 major source modification	Limits to avoid major modification for NOx and CO.
	40 CFR pt. 60, subp. Ja	Standards of Performance for Petroleum Refineries for which construction, reconstruction or modification after May 14, 2007
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. Db; Minn. R. 7011.0565	Standards of Performance for Industrial-Commercial-Institutional Steam Generation Units
	40 CFR pt. 63, subp. DDDDD	National Emission Standards for Hazardous Air Pollutants for industrial, Commercial and Institutional Boilers and Process Heaters- Major
GP 033 (FS Subject to NSPS GGGa)	40 CFR pt. 60, subp. GGGa	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which construction, reconstruction, or modification commenced after November 7, 2006: Fugitive LDAR

GP 034 (Cooling Towers and associated Heat Exchange Systems)	40 CFR pt. 63, subp. Q; Minn. R. 7011.7160	National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers
EU 003 (Alky Isostripper Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 004 (FCC Regenerator)	Title I SIP limits for SO_2 NAAQS	State Implementation Plan (SIP) The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Title I limits per CAAA of 1990	2001 EPA Consent Decree Requirements, as amended for PM, SO_2, CO, NOx and Opacity.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
	40 CRR pt. 63, subp. CC	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries.
EU 005 (No. 2 Crude Vacuum Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected

		Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 006 (No. 2 Crude Charge Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	40 CFR § 52.21 and Minn. R. 7007.3000	Title I BACT limit for NOx.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
	Title I limits per CAAA of 1990	2001 EPA Consent Decree Requirements, as amended for NOx.
EU 007 (No. 1 Crude Vacuum Tower Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 009 (No. 1 Crude Charger Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity

	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 010 (Distillate Unifiner Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 011 (Naphtha Unifiner Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 011 (Platformer Reactor Charger Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 013 (Platformer Interheater No. 1)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.

	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 014 (Platformer Interheater No. 2)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1405	Standards of Performance for Existing Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 015 (Isom Desulf Charge Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 015 (Hot Oil Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.

EU 017 (HDH Charge Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
	Title I limits per CAAA of 1990	Consent Decree Requirements, as amended for NOx.
EU 018 (SGP Dehexanizer Reboiler)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 019 (Sulfur Recovery Unit)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment.
	40 CFR pt. 60, subps. A and J; Minn. Rs. 7011.0050 and 7011.1435(A)	Standards of Performance for Petroleum Refineries.
	40 CFR pt. 63, subp. UUU; Minn. R. 7011.7280(B)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.

	Title I limits per CAAA of 1990	EPA Consent Decree Requirements, as amended for SO_2.
EU 022 (Guard Case Reactor Heater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 023 (Reformer Charge & No. 1 Interheaters)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 024 (No. 3 Interheater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 025 (No. 2 Interheater)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.

	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 027 (DDS Product Stripper Reboiler))	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.1410	Standards of Performance for New Affected Facilities at Petroleum Refineries. The rule limits PM, SO_2 and Opacity
	40 CFR pt. 60, subp. J; Minn. R. 7011.1435(A)	Standards of Performance for Petroleum Refineries.
EU 056 (Fire Hall Diesel Engine)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines.
	40 CFR pt. 63, subp. ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines..
EU 056 (Lagoon Diesel Engine)	Title I SIP limits for SO_2 NAAQS	The SIP conditions have special status and remain non-expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines.
	40 CFR pt. 63, subp. ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines..
EU 056 (Boiler	Title I SIP limits for SO_2	The SIP conditions have special status and remain non-

House Diesel Engine)	NAAQS	expiring. These conditions are in place for the protection of the NAAQS for SO_2.
	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines.
	40 CFR pt. 63, subp. ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.
EU 063 (Lt. Oil Truck Rack- Gasoline with Control Equipment CE 014)	Title I Limits to avoid 40 CFR § 52.21 major source modification	Limit to avoid process throughput of gasoline loaded
	40 CFR pt. 63, subp. R; Minn. R. 7011.7180	National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations).
EU 069 (Barge Dock- Asphalt, etc.)	40 CFR pt. 63, subp. CC; Minn. R. 7011.7280(A)	National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries.
EU 079 (FCC Catalyst Hoppers)	Minn. R. 7011.0710	Standards of Performance for Post 1969 Industrial Process Equipment
EU 080 (Emergency Backup Diesel Pump)	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines.
	40 CFR pt. 63, subp. ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.
EU 081 (WWTP Thermal Oxidizer)	Title I Limits to avoid 40 CFR § 52.21 major source modification	Limit to avoid H_2S.
	CAAA of 1990	2001 Consent Decree Requirements, as amended.
EU 083 (No. 3	Title I SIP limits for SO_2	State Implementation Plan (SIP)

Level*	Requirement (basis)	Additional Monitoring	Discussion
	stringent limit, meets the limit set by Minn. R. 7011.1410, subp, 3(A). (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. $SO_2 \leq 0.030$ lbs/MMBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq 162$ ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq 0.10$ grains/dry standard cubic foot on a 3-hour rolling average basis or ≤ 230 mg/dscm on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410)	recordkeeping SO_2 emissions on 3-hour averages in lb/hr and using H_2S CMS and fuel flowrate. c. &. d Monitoring: H_2S using CMS. e. & g. PM, and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in each heater on a monthly basis. i. Recordkeeping: Calculate and record on a daily basis, the average heat input for each 8-hour block by dividing the total heat input by the total operating time in each 8-hour block. j. Performance test to determine average NOx emission rate in lb/mmBtu	of compliance. In addition the Permittee will use the combination of the H_2S continuous monitoring system (CMS) and fuel flowrate to measure SO_2 emissions from the SV 023. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limits for PSA gas, refinery gas, and natural gas; therefore no additional monitoring is warranted. Calibration and QA/QC will be done on annual basis on the CMS. Compliance with the fuel gas sulfur restriction constitutes compliance the SIP SO_2 emission limits and Minn. R. 7011.1410 limit. Since the heaters will be fired with PSA gas, refinery gas and natural gas, there should be no significant PM and visible emissions from burning these fuels based on historical performance test results. SPPRC can demonstrate that the heaters will continue to operate such that emissions are well below the emission limits. Since these are permit conditions, the semi-annual deviation report will document any deviations from these conditions. The design based PTE for the heaters, using AP-42 factors, is 0.00745 lb/mmBtu compared to the rule limit of 0.040 lb/mmBtu. Compliance with the fuel restriction and H_2S limits constitutes compliance with PM and Opacity. Although, these heaters do not have NOx emission limits; based on 2001EPA

Level*	Requirement (basis)	Additional Monitoring	Discussion
	f. SO_2≤ 1.75 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to PSA gas, refinery gas and/or natural gas) (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) i. Heat Input≤ 116.0 MMBtu on an 8-hour block average based on the lower heating value (LHV) of the fuel burned (Minn. R. 7017.2025)		Consent Decree, NOx performance test requirements on SV 023 are required to determine average NOx lb/MMBtu emission rate on an annual basis. Heat Input limit (duty limit) has been imposed through performance test under Minn. R. 7017.2025. If SPPRC wants to operate the heaters at a higher input, a performance test must be conducted at the higher rate to determine compliance at that rate.
Fuel combustion devices using refinery oil (GP 006)	SO_2 ≤ 281 tons/yr on a 365-day rolling sum basis (2001 EPA Consent Decree)	Recordkeeping: Monitoring and Calculation of SO_2 emissions on a daily basis.	Daily calculations and recordkeeping in addition to fuel oil sampling and analysis are adequate to have reasonable assurance of compliance with SO_2 limit.
Portable Diesel Engines (GP 023)	a. PM ≤ 14.5 tons/yr on a 12-month rolling sum basis (Limit to avoid NSR) b. PM_{10} ≤ 14.5	a. & b. Recordkeeping: Calculations and recordkeeping for PM and PM_{10} emissions.	Calculations and recordkeeping are sufficient to comply with the PM & PM_{10} emission limits. Calculations and recordkeeping are sufficient to comply with the total

Level*	Requirement (basis)	Additional Monitoring	Discussion
	tons/yr on a 12-month rolling sum basis (Limit to avoid NSR) c. $SO_2 \leq 0.50$ lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.2300) d. NOx ≤ 4.66 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) e. NOx ≤ 148.8 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) f. NOx ≤ 20.02 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) g. NOx ≤ 4.66 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) h. NOx ≤ 4.66 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit)	c. thru m. Recordkeeping: Calculate and record for NOx modeling limits. n. Maintain and record each shipment of diesel fuel oil received. o. & p. Calculate and record the total power output and the capacity of each engine brought on site.	power output limit to ensure the NOx emissions are below the modeled limits and the sulfur content of the fuel burned.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	i. NOx ≤ 16.27 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) j. NOx ≤ 13.39 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) k. NOx ≤ 5.91 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) l. NOx ≤ 1.77 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) m. NOx ≤ 13.81 tons/yr on a 12-month rolling sum basis (PSD Modeling Limit) n. Sulfur Content of Fuel ≤ 0.050 % by weight of diesel fuel (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) o. Power output of the engines ≤ 5600 hp per engine's		

Level*	Requirement (basis)	Additional Monitoring	Discussion
	power rated capacity (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) p. Total power output from large diesel engines ≤ 20,000,000 hp-hr/yr on a 12-month rolling sum basis (Title I Modeling Limit)		
No. 2 SRU, Hydrogen Plant Heater and DDS Heater (GP 026)	NOx ≤ 39.8 tons/yr on a 12-month rolling sum basis (Limit to avoid NSR)	Recordkeeping: Calculation and recordkeeping for NOx emissions.	Calculations and recordkeeping are sufficient to comply with the NOx emission limit.
Loading Rack Vapor Combustor Unit System (GP 031, EU 063, EU 091, CE 026)	a. VOC ≤ 35 milligrams of total organic compounds per liter gasoline loaded (NSPS Limit, 40 CFR pt. 60, subp. XX) b. VOC ≤ 10 milligrams of total organic compounds per liter gasoline loaded (NESHAP Limit, 40 CFR pt. 63, subp. R) c. H_2S ≤ 0.10 grains/dry standard	a. & b. Performance test for VOC. c. Monitoring: Existing H_2S fuel gas monitoring system. d. Temperature monitoring.	EU 063 is an other PSEU and subject to CAM. VOC control equipment (CE 026) are subject to monitoring once every 24-hour hour period. CE 026 is monitored based on a 3-hour rolling average. Based on the performance test results, which showed the VOC emission limit was less than 60% of the most stringent limit, the next scheduled test is on or before 09/26/2013. The test must include destruction and removal efficiency for both the VRU and VCU. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no

Level*	Requirement (basis)	Additional Monitoring	Discussion
	cubic foot on a 3-hour rolling average basis or ≤ 230 mg/dscm on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J) d. Temperature ≤ 215 degree F using 3-hour rolling average (Minn. R. 7007.0800)		additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis.
Boilers 7 & 8 (GP 032, EU 092, & EU 093)	a. SO_2 ≤ 0.025 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. H_2S≤ 162 ppm on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 0.10 grains/dry standard cubic foot on a 3-hour rolling average basis or ≤ 230 mg/dscm on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J	a. b. c. & i. The Permittee will use the H_2S CEMS and the CMS to measure SO_2 emissions. Monitoring fuel gas H_2S content with the CMS. d. Recordkeeping: Maintain records of the type of fuel combusted in each boiler on a monthly basis. e. f. & k. Monitoring NOx CEM and oxygen CEM to continuously measure NOx emissions on an hourly basis. CO CEM to continuously measure CO emissions on an hourly basis.	H_2S CEM and CMS fuel flow rate will be used to calculate SO_2 emissions in lb/mmBtu and lbs/hr. In addition existing CMS will be used to monitor the H_2S content in the fuel gas; therefore, no additional monitoring is warranted. Calibration and QA/QC on the CMS will be done on an annual basis. NOx: CEM is used to measure NOx emissions continuously; therefore, the CEM will provide continuous assurance of compliance. Annual performance test will be used to validate the CEM. Calculation and records of hourly, daily and total NOx emissions. CO: CEM is used to measure CO emissions continuously; therefore, the CEM will provide continuous assurance of compliance. Annual performance test will be used to validate the CEM. Calculation and records of hourly, daily and total CO emissions. Since the boilers are fired either refinery

Level*	Requirement (basis)	Additional Monitoring	Discussion
	d. Fuel Restriction: limited to refinery fuel gas and/or pipeline natural gas) (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) e. NOx ≤ 38.0 tons/yr on a 12-month rolling sum basis for both boilers (Limit to avoid NSR) f. CO ≤ 95.0 tons/yr on a 12-month rolling sum basis for both boilers (Limit to avoid NSR) g. H_2S≤ 0.10 grains/dry standard cubic foot based on a 3-hour rolling average (Minn. R. 7011.1410) h. PM≤ 0.40 lbs/MMBtu on a 3-hour basis (Minn. R. 7011.1410) i. SO_2≤ 1.75 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410)	Calculations and recordkeeping on a daily and monthly basis for NOx and CO emissions. g. Monitoring H_2S using CMS. h. i. & j. PM & Opacity: None l. Follow the work practices requirements in the NESHAP	fuel gas or natural gas, there should be no significant PM or visible emissions from burning the fuel. SPPRC can demonstrate that the boilers will continue to operate such that the emissions are well below the emission limits. The design based PTE for the boiler, using AP-42 factor is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM. Compliance with the fuel restriction and H_2S limit constitutes compliance with the PM and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	j. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) K. NOx≤ 0.20 lbs/mmBtu on a 30-day rolling average while combusting natural gas or mixture of natural gas and refinery fuel gas (NSPS, 40 CFR pt. 60, subp. Db l. Work Practices (NESHAP, 40 CFR pt. 63, subp. DDDDD)		
Alky Isostripper Heater (EU 003)	a. SO_2 ≤ 64.08 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.90 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour basis (SIP for SO_2 NAAQS;	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM;

Level*	Requirement (basis)	Additional Monitoring	Discussion
	40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. $SO_2 \leq$ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, natural gas and refinery oil (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	unit on a monthly basis.	therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company chooses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.
FCC	a. PM ≤ 0.90	a. & b. Performance	Performance Test for PM is scheduled

Level*	Requirement (basis)	Additional Monitoring	Discussion
Regenerator (EU 004)	lbs/1000 lbs on a 3-hour rolling average, without the use of add-on control device. (2005 EPA Consent Decree) b. PM ≤ 1.0 lbs/1000 lbs on a 3-hour rolling average (NSPS: 40 CFR pt. 60, subp. J; NESHAPS: 40 CFR pt. 63, subp. UUU; Minn. R. 7011.1405) c. Opacity ≤ 30% with exceptions. (2001 EPA Consent Decree; NSPS: 40 CFR pt. 60, subp. J; NESHAPS: 40 CFR pt. 63, subp. UUU) d. SO_2 ≤ 9.8 lbs/hr per 1000 lbs coke burn-off on a 7-day rolling average basis (2001 EPA Consent Decree; NSPS: 40 CFR pt. 60, subp. J) e. SO_2 ≤ 793.65 lbs/hr on a 3-hour rolling average basis. (SIP for SO_2 NAAQS; 40 CFR pts. 50 and	test for PM. c. COMS for Opacity d. e. f. & g. SO_2 CEMS operation and maintenance. h. CO CEMS operation and maintenance.. i. & j. NOx CEMS operation and maintenance. k. Monitoring H_2S using existing H_2S CMS	for 180 days after permit issuance. Opacity: COMS to continuously measure opacity from the FCC regenerator. SO_2: CEMS to continuously measure SO_2 and oxygen concentrations to determine SO_2 emissions from the FCC regenerator. The CEMS will provide continued assurance of compliance. Performance test will be used to validate the CEM on an annual basis. In addition, the Permittee will calculate and record SO_2 emissions on an hourly basis in lbs/hr and ppm. By measuring SO_2 emissions continuously, assurance compliance for EPA consent decree and MN SIP for SO_2 will be satisfied. CO: CEMS to continuously measure CO concentrations to determine CO emissions from the FCC regenerator. The CEMS will provide continued assurance of compliance. Performance test will be used to validate the CEM on an annual basis. By measuring CO emissions continuously, assurance compliance for EPA consent decree will be satisfied. NO: CEMS to continuously measure NOx concentrations to determine NOx emissions from the FCC regenerator. The CEMS will provide continued assurance of compliance. Performance test will be used to validate the CEM on an annual basis. In addition, the Permittee will calculate and record NOx emissions on an hourly basis in ppm. By measuring NOx emissions continuously,

Level*	Requirement (basis)	Additional Monitoring	Discussion
	52) f. $SO_2 \leq 100$ ppm volume dry, corrected to zero percent oxygen on a 7-day rolling average basis. (2005 EPA Consent Decree) g. $SO_2 \leq 50$ ppm volume dry, corrected to zero percent oxygen on a 365-day rolling average basis. (2001 EPA Consent Decree) h. CO ≤ 500 ppm by volume on 1-hour average on a dry basis. (2001 EPA Consent Decree; NSPS: 40 CFR pt. 60, subp. J; NESHAPS: 40 CFR pt. 63, subp. UUU) i. NOx ≤ 90 ppm volume dry, corrected to zero percent oxygen on a 7-day rolling average basis. (2001 EPA Consent Decree)		assurance compliance for EPA consent decree will be satisfied. The Permittee will continue to implement the LAER program for fugitive emissions.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	j. NOx ≤ 70 ppm volume dry, corrected to zero percent oxygen on a 365-day rolling average basis. (2001 EPA Consent Decree) k. H_2S ≤. 0.10 grains/dry standard cubic foot on a 3-hour rolling average basis or ≤ 230 mg/dscm on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J) Fugitive VOC/HAPS: LDAR program (40 CFR pt. 60, subps. GGGa and VV; 40 CFR pt. 63, subp. CC)		
No. 2 Crude Vacuum Heater (EU 005)	a. SO_2 ≤ 48.60 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.90 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS;	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the

Level*	Requirement (basis)	Additional Monitoring	Discussion
	40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery	Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company choses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	gas, natural gas and refinery oil (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
No. 2 Crude Charge Heater (EU 006)	a. $SO_2 \leq 34.0$ lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. $SO_2 \leq 0.2834$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. NOx ≤ 0.14 lbs/mmBtu on a 3-hour rolling average (BACT limit) d. NOx ≤ 0.050 lbs/mmBtu on a 365-day rolling average (EPA Consent Decree Limit) e. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) f. $H_2S \leq$ 230	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. & d. CEM Monitoring to continuously measure NOx emissions on an hourly basis. e. &f. Monitoring H_2S using a continuous monitoring system (CMS). g. & i. PM and Opacity: None j. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. CEMS will be used to measure NOx emissions, which is adequate to have a reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company choses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible

Level*	Requirement (basis)	Additional Monitoring	Discussion
	milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) g. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) h. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) i. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) j. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.
No. 2 Crude Vacuum Tower Heater (EU 007)	a. SO_2 ≤ 1.2 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system

Level*	Requirement (basis)	Additional Monitoring	Discussion
	52) b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq 162$ ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. $SO_2 \leq$ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405)	mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
No. 1 Crude Charge Heater (EU 009)	a. SO_2 ≤ 52.20 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.90 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of the unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore, the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company choses to burn refinery oil, visible

Level*	Requirement (basis)	Additional Monitoring	Discussion
	hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, natural gas and refinery oil (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52		emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.
Distillate Unifiner Heater (EU 010)	a. SO_2 ≤ 1.41 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.030 lbs/mmBtu on a 3-hour rolling average basis	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. $SO_2 \leq$ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery	(CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company choses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
Naptha Unifiner Heater (EU 011)	a. $SO_2 \leq 1.95$ lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	hour rolling average basis (Minn. R. 7011.1405) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
Platformer Reactor Charge Heater (EU 012)	a. SO_2 ≤ 1.95 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.030 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour average basis	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. $SO_2 \leq$ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	combusted in the unit on a monthly basis.	lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
Platformer Inter heater (EU 013)	a. $SO_2 \leq 1.68$ lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405)	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
Platformer Interheater No. 2 (EU 014)	a. SO_2 ≤ 1.08 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.030 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The

Level*	Requirement (basis)	Additional Monitoring	Discussion
	d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	basis.	likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.
Isom Desulf Charge Heater (EU 015)	a. SO_2 ≤ 0.76 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS;	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	40 CFR pts. 50 and 52) b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1405) f. $SO_2 \leq$ 1.75 lbs/mmBtu on a 3-hour rolling average basis	hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(Minn. R. 7011.1405) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1405) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
Hot Oil Heater (EU 016)	a. SO_2 ≤ 76.50 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.90 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or

Level*	Requirement (basis)	Additional Monitoring	Discussion
	average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, natural gas and refinery oil (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		refinery gas as long as the unit is properly maintained. If the company chooses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.
HDH Charge Heater (EU 017)	a. SO_2 ≤ 2.97 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	a. b. & g. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. CEMS will be used to measure NOx emissions, which is adequate to have a

Level*	Requirement (basis)	Additional Monitoring	Discussion
	b. $SO_2 \leq 0.025$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. NOx ≤ 0.050 lbs/mmBtu on a 365-day rolling average (EPA Consent Decree Limit) d. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) e. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) f. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410)	c. CEM Monitoring to continuously measure NOx emissions on an hourly basis. d. & e. Monitoring H_2S using a continuous monitoring system (CMS). f. & h. PM and Opacity: None i. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis. j. Recordkeeping: Calculate and record the 365-day average in mmBtu using 1-hour averages obtained during the previous 365-day period.	reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company chooses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	g. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) h. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) i. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) j. Heat Input ≤ 116.0 mmBtu/hr LHV based on a 365-day rolling average (Consent Decree)		
SGP Dehaxanizer Reboiler (EU 018)	a. SO_2 ≤ 36.0 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.90 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping:	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	c. H_2S≤ 162 ppm on a 3-hour basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, natural gas and refinery oil (SIP for SO_2 NAAQS;	Maintain records of the type of fuel combusted in the unit on a monthly basis.	In addition, the heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the performance test PM requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. If the company chooses to burn refinery oil, visible emissions will be checked during daylight hours on a daily basis. If visible emissions are observed over 10% opacity, the company will take corrective actions to reduce visible emissions; if visible emission continues over 10% opacity, the company shall perform a Method 9 with a certified observer. Exceedance of any permitted limit shall be reported on the company's semiannual report. The visible emission check is still warranted for refinery oil only.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	40 CFR pts. 50 and 52)		
Sulfur Recovery Unit (EU 019)	a. SO_2 ≤ 15.0 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 45.0 lbs/hr on a 1-hour rolling average basis (Minn. R. 7009.0020) c. SO_2 ≤ 250 ppm by volume on 12-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J; NESHAPs: 40 CFR pt. 63, subp. UUU) d. H_2S≤ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; Minn. R. 7011.1410) e. Opacity ≤ 20% (Minn. R. 7011.0715)	a. b. & c. SO_2 CEMS will be used to measure SO_2 emissions. d. Monitoring H_2S using a continuous monitoring system (CMS). e. Opacity: None	Operation and maintenance of the CEMS is adequate to have reasonable assurance of compliance with the SO_2 emission limits. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S limit for refinery gas and natural gas; therefore no additional monitoring is warranted. Sulfur Recovery Plant sulfur pit emissions shall be managed so that the sulfur pit emissions to the atmosphere are controlled or included and monitored as part of the applicable sulfur recovery plant tail gas emissions except during startup, shutdown or malfunction (SSM) or process upset.
Guard Case Reactor Heater (EU 022)	a. SO_2 ≤ 1.70 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance

Level*	Requirement (basis)	Additional Monitoring	Discussion
	b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq 162$ ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; 40 CFR pt. 60, subp. J) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. $SO_2 \leq 1.75$ lbs/mmBtu on a 3-hour rolling average basis	mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
Reformer Charge & No. 1 Interheaters (EU 023)	a. SO_2 ≤ 2.10 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.030 lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; 40 CFR pt. 60, subp. J) d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly

Level*	Requirement (basis)	Additional Monitoring	Discussion
	grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410 e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.
No. 3 Interheaters (EU 024)	a. SO_2 ≤ 0.63 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.030	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no

Level*	Requirement (basis)	Additional Monitoring	Discussion
	lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. H_2S≤ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; 40 CFR pt. 60, subp. J) d. H_2S≤ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour average basis) (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with	c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
No. 2 Interheater (EU 025)	a. $SO_2 \leq 1.05$ lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq 162$ ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; 40 CFR pt. 60, subp. J) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity

Level*	Requirement (basis)	Additional Monitoring	Discussion
	basis) (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		limit.
DDS Reactor Charge Heater (EU 026)	a. SO_2 ≤ 1.38 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 0.030 lbs/mmBtu on a 3-hour rolling average basis	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; 40 CFR pt. 60, subp. J) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. $SO_2 \leq$ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410)	(CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
DDS Product Stripper Reboiler (EU 027)	a. $SO_2 \leq 0.78$ lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. $SO_2 \leq 0.030$ lbs/mmBtu on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) c. $H_2S \leq$ 162 ppm on a 3-hour average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52; 40 CFR pt. 60, subp. J) d. $H_2S \leq$ 230 milligrams /DSCM on a 3-hour rolling average basis (0.10 grains/dry standard cubic foot on a 3-hour rolling average basis) (NSPS: 40 CFR pt. 60,	a. b. & f. Recordkeeping: Calculate and record SO_2 emissions on an hourly basis in lbs per hour and lbs per mmBtu. c. &d. Monitoring H_2S using a continuous monitoring system (CMS). e. & g. PM and Opacity: None h. Recordkeeping: Maintain records of the type of fuel combusted in the unit on a monthly basis.	Calculation and recordkeeping of SO_2 emissions on a short-term basis is adequate to have reasonable assurance of compliance. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S content limit; therefore, no additional monitoring is warranted. Calibration and QA/QC on the unit will be done on an annual basis. Performance tests were done to determine PM emissions. Based on the performance test results, PM emissions were less than 5% of the emission limit. The heater design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM; therefore the PM performance test requirement was removed from the permit. The likelihood of violating the PM and opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. Compliance with the fuel restriction and H_2S limit constitutes compliance with PM, SO_2 and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	subp. J; Minn. R. 7011.1410) e. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) f. SO_2≤ 1.75 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) g. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) h. Fuel Restriction: limited to refinery gas, and natural gas (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52)		
Fire Hall Diesel Engine (EU 056)	a. SO_2 ≤ 0.50 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.2300) b. Opacity ≤ 20% (Minn. R. 7011.2300) c. Sulfur Content of Fuel ≤ 0.050% by weight of diesel fuel (SIP for SO_2 NAAQS;	a. & b. SO_2 and Opacity: None c. Maintain and record each shipment of diesel fuel oil. d. Work practice requirements.	Maintaining record is adequate to have reasonable assurance of compliance for the sulfur content of the fuel burned. Based on 40 CFR pt. 63, subp. ZZZZ, the work practice requirements are adequate to show compliance with the standard.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	40 CFR pts. 50 and 52) d. Work Practice (40 CFR pt. 63, subp. ZZZZ)		
Lagoon Diesel Engine (EU 057)	a. $SO_2 \leq$ 0.50 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.2300) b. Opacity ≤ 20% (Minn. R. 7011.2300) c. Sulfur Content of Fuel ≤ 0.050% by weight of diesel fuel (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. Work Practice (40 CFR pt. 63, subp. ZZZZ)	a. & b. SO_2 and Opacity: None c. Maintain and record each shipment of diesel fuel oil. d. Work practice requirements.	Maintaining record is adequate to have reasonable assurance of compliance for the sulfur content of the fuel burned. Based on 40 CFR pt. 63, subp. ZZZZ, the work practice requirements are adequate to show compliance with the standard.
Boiler House Diesel Engine (EU 060)	a. $SO_2 \leq$ 0.50 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.2300) b. Opacity ≤ 20% (Minn. R. 7011.2300) c. Sulfur Content of Fuel ≤ 0.050% by weight of diesel fuel	a. & b. SO_2 and Opacity: None c. Maintain and record each shipment of diesel fuel oil. d. Work practice requirements.	Maintaining record is adequate to have reasonable assurance of compliance the sulfur content of the fuel burned. Based on 40 CFR pt. 63, subp. ZZZZ, the work practice requirements are adequate to show compliance with the standard.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) d. Work Practice (40 CFR pt. 63, subp. ZZZZ)		
Lt Oil Truck Rack – Gasoline (EU 063)	a. VOC ≤ 10 milligrams/liter of total organic compounds of gasoline loaded (40 CFR pt. 63, subp. R) b. Process Throughput ≤ 900 gallons/yr on a 12-month rolling sum basis. (limit to avoid NSR)	a. Performance test for VOC b. Recordkeeping: Calculate and record the total amount of gasoline loaded and 12-month rolling sum of gasoline loaded.	Next performance test to show compliance with the emission limit is scheduled for on or before 09/26/ 2013. The Permittee will submit a frequency plan. Calculation and recordkeeping on a short-term basis is adequate to have reasonable assurance of compliance.
FCC Catalyst Hoppers (fresh) and FCC Catalyst Hooper (spent) (EU 079 and EU 095)	PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0710)	None	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate particulate matter or visible emissions.
Emergency backup Diesel pump (EU 080)	a. SO_2 ≤ 0.50 lbs/mmBtu on a 3-hour rolling average basis (Minn. R. 7011.2300) b. Opacity ≤ 20%	a. & b. SO_2 and Opacity: None c. Maintain and record fuel combusted.	Maintaining records is adequate to have reasonable assurance of compliance for the sulfur content of the fuel burned.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	(Minn. R. 7011.2300) c. Fuel Restriction: limited to diesel fuel only		
WWTP Thermal Oxidizer (EU 081)	a. H_2S ≤ 150 ppm on a 365-day rolling average basis (Limit to avoid NSR) b. Temperature ≥ 1400 degree F based on a 3-hour rolling basis (Minn. R. 7007.0800)	a. Calculate the average concentration of H_2S in the flue gas for the preceding 365 days. b. Control Equipment and O & M plan	This unit is not subject to CAM. The Permittee has done performance test to validate the temperature for the control equipment. Continuous records of the temperature of the gas stream, while maintaining and operating the control equipment will ensure compliance with the operating parameters of the control device.
No. 3 Sulfur Recovery Unit (EU 083)	a. SO_2 ≤ 15.0 lbs/hr on a 3-hour rolling average basis (SIP for SO_2 NAAQS; 40 CFR pts. 50 and 52) b. SO_2 ≤ 45.0 lbs/hr on a 1-hour rolling average basis (Minn. R. 7009.0020) c. SO2 ≤ 39.0 tons/yr on a 365-day rolling sum basis (Limit to avoid NSR) d. SO_2 ≤ 250 ppm by volume on 12-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J; NESHAPs: 40	a. b. c. & d. SO_2 CEMS will be used to measure SO_2 emissions. e. Monitoring H_2S using a continuous monitoring system (CMS). f. Opacity: None	Operation and maintenance of the CEMS is adequate to have reasonable assurance of compliance with the SO_2 emission limits. The existing fuel gas monitoring system will be used to demonstrate compliance with the H_2S limit for refinery gas and natural gas; therefore no additional monitoring is warranted. Sulfur Recovery Plant sulfur pit emissions shall be managed so that the sulfur pit emissions to the atmosphere are controlled or included and monitored as part of the applicable sulfur recovery plant tail gas emissions except during SSM or process upset.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	CFR pt. 63, subp. UUU) e. H_2S≤ 162 ppm on a 3-hour average basis (40 CFR pt. 60, subp. J; Minn. R. 7011.1410) f. Opacity ≤ 20% (Minn. R. 7011.0715)		
NOx Catalyst Additive Hopper System (EU 084)	a. PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0715) b. PM ≥ 98% control efficiency (Minn. R. 7007.0800) c. PM_{10} ≥ 98% control Efficiency (Minn. R. 7007.0800)	a. PM and Opacity: None b. Control Equipment: O & M plan	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate particulate matter or visible emissions. Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
SO_2 Catalyst Additive Hopper System (EU 085)	a. PM, variable depending on airflow Opacity ≤ 20% (Minn. R. 7011.0715) b. PM ≥ 98% control efficiency (Minn. R. 7007.0800) c. PM_{10} ≥ 98% control Efficiency (Minn. R. 7007.0800)	a. PM and Opacity: None b. Control Equipment: O & M plan	While no known emissions estimation method exists for these units, based on general knowledge of how they operate, it is highly unlikely that they could generate particulate matter or visible emissions. Monitoring based on the Minnesota Performance Standard for Control Equipment is adequate to have a reasonable assurance of compliance
Temporary	a. PM, variable	a. None	The likelihood of violating the PM and

Level*	Requirement (basis)	Additional Monitoring	Discussion
Boiler (EU 086)	depending on airflow Opacity $\leq$ 20% with exceptions (Minn. R. 7011.0515) b. Fuel and Boiler Restrictions (Minn. R. 7007.0800)	b. Recordkeeping: Record the rated heat input capacity of the boiler, fuel combusted and if the boiler is subject to NSPS, 40 CFR pt. 60, subp. Dc; if applicable.	opacity emissions standards is unlikely while burning natural gas or refinery gas as long as the unit is properly maintained. The design based PTE, using AP-42 factor of unit is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM. Compliance with the fuel restriction constitutes compliance with PM, and Opacity limit.
New Heater (EU 087)	a. $H_2S \leq$ 230 mg/dscm on a 3-hour rolling average or $\leq$ 0.10 grains/dry standard cubic foot on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410) b. PM$\leq$ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) c. $SO_2 \leq$ 1.75 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) d. Opacity $\leq$ 20% with exceptions (Minn. R. 7011.1410) e. Fuel Restriction:	a. Monitoring fuel gas H_2S content with the CMS. b. c. & d. PM, SO_2 & Opacity: None e. Recordkeeping Maintain records of the type of fuel combusted in the heater.	The existing CMS will be used to monitor the H_2S content in the fuel gas; therefore, no additional monitoring is warranted. Calibration and QA/QC on the CMS will be done on an annual basis. Since the heater is fired either refinery fuel gas or natural gas, there should be no significant PM or visible emissions from burning the fuel. SPPRC can demonstrate that the heater will continue to operate such that the emissions are well below the emission limits. The design based PTE for the heater, using AP-42 factor is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM. Compliance with the fuel restriction and H_2S limit constitutes compliance with the PM and Opacity limit.

Level*	Requirement (basis)	Additional Monitoring	Discussion
	Limited to refinery gas and/or natural gas.		
NP VEPR Phase 1 (EU 088)	H_2S≤ 230 milligrams/ DSCM or 0.10 grains/dry standard cubic foot on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1420)	Monitoring fuel gas H_2S content with the CMS.	The existing CMS will be used to monitor the H_2S content in the fuel gas; therefore, no additional monitoring is warranted. Calibration and QA/QC on the CMS will be done on an annual basis.
NP VEPR Phase 2 (EU 089)	H_2S≤ 230 milligrams/ DSCM or 0.10 grains/dry standard cubic foot on a 3-hour rolling average basis (NSPS: 40 CFR pt. 60, subp. J; Minn. R. 7011.1420)	Monitoring fuel gas H_2S content with the CMS.	The existing CMS will be used to monitor the H_2S content in the fuel gas; therefore, no additional monitoring is warranted. Calibration and QA/QC on the CMS will be done on an annual basis.
FCC Charge Heater (EU 094)	a. H_2S≤ 0.10 grains/dry standard cubic foot on a 3-hour basis (NSPS: 40 CFR pt. 60, subp. Ja; Minn. R. 7011.1410) b. PM≤ 0.40 lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) c. SO_2≤ 1.75	a. Monitoring fuel gas H_2S content with the CMS. b. c. & e PM, SO_2 & Opacity: None f. Recordkeeping Maintain records of the type of fuel combusted in the heater. g. Follow the work practices requirements in the	The existing CMS will be used to monitor the H_2S content in the fuel gas; therefore, no additional monitoring is warranted. Calibration and QA/QC on the CMS will be done on an annual basis. Since the heater is fired either refinery fuel gas or natural gas, there should be no significant PM or visible emissions from burning the fuel. SPPRC can demonstrate that the heater will continue to operate such that the emissions are well below the emission limits. The design based PTE for the

Level*	Requirement (basis)	Additional Monitoring	Discussion
	lbs/MMBtu on a 3-hour rolling average basis (Minn. R. 7011.1410) d. Opacity ≤ 20% with exceptions (Minn. R. 7011.1410) e. Fuel Restriction: Limited to refinery gas and/or natural gas. f. Work Practices (NESHAP, 40 CFR pt. 63, subp. DDDDD)	NESHAP	heater, using AP-42 factor is 0.00745 lb/mmBtu compared to the rule limit of 0.40 lb/mmBtu for PM. Compliance with the fuel restriction and H_2S limit constitutes compliance with the PM and Opacity limit.
Emergency Engine (EU 096)	NOx ≤ 2.0 grams/hp-hr OR NOx ≤ 160 grams/hp-hr or 150 ppmvd at 15% oxygen CO ≤ 4.0 grams/hp-hr OR CO ≤ 540 grams/hp-hr or 150 ppmvd at 15% oxygen VOC ≤ 1.0 grams/hp-hr OR VOC ≤ 86 grams/hp-hr or 150 ppmvd at 15% oxygen (NSPS: 40 CFR pt. 60, subp. JJJJ)	Recordkeeping: The Permittee must keep records of conducted maintenance to demonstrate compliance with the emission limits.	Based on the rule, the recordkeeping requirements and engine settings according to and consistent with the manufacturer's instructions are adequate to meet the emission limits.
#1 Reformer	HCl: Reduce HCl	Operational	Based on 40 CFR pt. 63, subp. UUU, the

Level*	Requirement (basis)	Additional Monitoring	Discussion
Vent (EU 097/CE 005)	uncontrolled emissions by 92% by weight or to a concentration of 30 ppmv (dry basis), corrected to 3% oxygen. (NESAP: 40 CFR pt. 63, subp. UUU) Flaring: Opacity ≤ 0 percent with exceptions (NSPS AND NESHAP General Provisions; NESHAP: 40 CFR pt. 63, subp. CC)	limitation. Control Equipment O & M	operating limitation, maintenance and operation of the pollution control equipment requirements are adequate to demonstrate compliance with the HCL emissions reduction.
#2 Reformer Vent (EU 098/CE 005)	HCl: Reduce HCl uncontrolled emissions by 92% by weight or to a concentration of 30 ppmv (dry basis), corrected to 3% oxygen. (NESAP: 40 CFR pt. 63, subp. UUU) Flaring: Opacity ≤ 0 percent with exceptions (NSPS AND NESHAP General Provisions; NESHAP: 40 CFR pt. 63, subp. CC)	Operational limitation. Control Equipment O & M	Based on 40 CFR pt. 63, subp. UUU, the operating limitation, maintenance and operation of the pollution control equipment requirements are adequate to demonstrate compliance with the HCL emissions reduction.
New Alky	Sulfur content: 15	Operational	Based on 40 CFR pt. 60, subp. IIII, the