

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM ₁₀	Particulate Matter equal to or less than 10 microns in diameter
PM _{2.5}	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU04-VACUUM-S1	Vacuum Unit. Area 4. The vacuum unit separates the reduced crude from the crude unit through the use of a vacuum column. The reduced crude is separated into light vacuum gas oil, medium vacuum gas oil, heavy vacuum gas oil, and a bottoms product called flux. The various fractions are sent to other units in the refinery for further processing. The vacuum unit consists of process vessels (including heat exchangers and vacuum column), process heater, tanks, containers, 2 cooling towers, flare, compressors, pumps, piping drains, and various components (pumps and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.) Other EU's have been created to address individual pieces of equipment within the vacuum unit that have specific applicable requirements. Permit: 262-02, 63-08E, TBD	11/09/2005 11/17/2010	FGPROCUNITS-S1 FGDHOU PANNUAL-S1
EU04-VACHTR-S1	Vacuum Heater. Area 4H1. Fuel: Refinery fuel gas and natural gas. Permit: 108-02, 262-02, 175-06, 63-08E, TBD	11/09/2005 11/05/2012	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOU PANNUAL-S1
EU04-VAC2HTR-S1	Vacuum Heater. Area 4H2. Fuel: Refinery fuel gas and natural gas. Permit: 63-08E, TBD	11/05/2012	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOU PANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU05-CRUDE-S1	Crude Unit. Area 5. The crude unit separates crude oil into various fractions through the use of distillation processes. These fractions are sent to other units in the refinery for further processing. The crude unit consists of process vessels (including heat exchangers and fractionation columns), the Alcorn heater, tanks, containers, compressors, pumps, piping, drains and various components (pump and compressors seals, process valves, pressure relief valves, flanges, connectors, etc.). Other EU's have been created to address individual pieces of equipment within the crude unit which have specific applicable requirements. Permit: 282-02, 63-08E, TBD	11/09/2005 11/05/2012	FGPROCUNITS-S1 FGDHOUPANNUAL-S1
EU05-CRUDEHTR-S1	Crude Alcorn Heater, Area 5, Fuel: Refinery fuel gas, and Natural gas. Permit: 108-02, 262-02, 175-06, 63-08E, TBD	11/09/2005 11/05/2012	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUPANNUAL-S1
EU07-DHT-S1	Distillate Hydrotreater Unit: Area 7. The DHT Unit consists of process vessels (absorbing towers, stripper tower) cooling tower, flare, pumps, piping, drains, and various components (pumps and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). Other EU's were created to address individual pieces of equipment within this unit that have specific applicable requirements. Permit: 262-02, 63-08E, TBD	11/09/2005 11/5/2012	FGPROCUNITS-S1 FGDHOUPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU08-GOHT-S1	Gas Oil Hydrotreater Unit: Area 8. Reacts sour gas oil streams with hydrogen over a catalyst bed to remove sulfur. The GOHT unit consists of process vessels (reactors, distillation tower, absorbing towers, stripper tower) and a charge heater, cooling tower, flare, compressors, pumps, piping, drains, and various components (pumps and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). Other EU's were created to address individual pieces of equipment within this unit that have specific applicable requirements. Permit: 262-02, 63-08E, TBD	11/09/2005 11/05/2012	FGPROCUNITS-S1 FGDHOUANNUAL-S1 FGTIER3-S1
EU08-GOHTCHARHTR-S1	Gas Oil Hydrotreater Charge Heater. Area 8. Fuel: Refinery fuel gas and natural gas. Permit: 262-02, 63-08E, TBD	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1 FGTIER3-S1 FGTIER3SO2-S1
EU08-GOHTCHARHTR2-S1	Gas Oil Hydrotreater Charge Heater No. 2. Area 8. Fuel: Refinery fuel gas and natural gas. Permit: 118-15, TBD	10/25/18	FGTIER3-S1 FGTIER3SO2-S1 FGDPPANNUAL-S1
EU09-ALKYDIBREBHTR-S1	Alkylation Deisobutanizer Heater 9H7, Area 9, Fuel: Refinery fuel gas, and Natural gas. Permit: 63-08E, TBD	11/05/2012	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU09-ALKYLATION-S1	<p>Alkylation Unit: Area 9: The Alkylation unit reacts isobutane with olefins in the presence of sulfuric acid to produce alkylate, a high octane gasoline blending component. Reaction products are sent for further processing and separation in the fractionating section. Products from the unit include off-gas, alkylate, butane, isobutane, and propane. Off-gas is routed to the refinery fuel gas system. Alkylate, butane, and propane are directed to storage. Isobutane is recycled through the system for further processing. Alkylation unit consists of process vessels (including fractionators, reactor and caustic scrubber), heaters, tanks, containers, cooling tower, flare, compressors, pumps, piping, drains, and various components (pump and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.) Other EU's were created to address individual pieces of equipment within the Alkylation Unit which have specific applicable requirements. Permit: 262-02, 63-08E, TBD</p>	01/01/1959 11/05/2012	FGPROCUNITS-S1 FGDHOUANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU11-FCCU-S1	Fluid Catalytic Cracking Unit. Area 11. The FCCU converts heavier hydrocarbons to lighter products in the presence of a catalyst. In the process coke is deposited on the catalyst. The spent catalyst is moved to the regenerator (11-V1) where the coke is burned off using air. The regenerator is equipped with cyclones and ESPs to capture catalyst (11-V1CYCLONES). The hot flue gas from the regenerator is directed to a flue gas cooler where heat is recovered as steam. The FCCU consists of process vessels (reactors, regenerator, fractionators, knock-out pots, and strippers) heater, tanks, containers, 2 cooling towers, compressors, pumps, piping, drains, and various components (pumps, and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). Other EUs have been created to address equipment that has specific applicable requirements. Permit: 262-02, 28-02A, 175-06, 81-12, 63-08E, TBD	11/09/2005 11/05/2012	FGPROCUNITS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1 FGTIER3SO2-S1
EU11-FCCUCHARHTR-S1	FCCU Charge Heater, Area 11. Fuel: Refinery fuel gas, and Natural gas. Permit: 108-02, 262-02, 63-08E	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1
EU16-NHTSTRIPREBOIL-S1	Naphtha Hydrotreater Stripper Reboiler. Area 16. Fuel: Refinery fuel gas, and natural gas. Permit: C-11495, 108-02, 262-02, 63-08E, TBD	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU16-NHT2STRIPREBOIL-S1	New Naphtha Hydrotreater Stripper Reboiler. Area 16. Fuel: Refinery fuel gas, and natural gas. Permit: TBD	TBD	FGHEATERS-S1 FGDPPANNUAL-S1
EU16-NHTCHARHTR-S1	Naphtha Hydrotreater Charge Heater. Area 16. Fuel: refinery fuel gas and natural gas. Permit: C-11493, 108-02, 262-02, 63-08E, TBD	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU16-NHT2CHARHTR-S1	New Naphtha Hydrotreater Charge Heater. Area 16. Fuel: refinery fuel gas and natural gas. Permit: TBD	TBD	FGHEATERS-S1 FGDPPANNUAL-S1
EU14-CCRPLCHARHTR-S1	CCR Platformer Charge Heater. Area 14. Fuel: Refinery fuel gas and natural gas. Permit: 262-02, 63-08E, TBD	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU14-CCRPLINTHTR-S1	CCR Platformer Intermediate Heater. Area 14. Fuel = refinery fuel gas and natural gas. Wayne County Permit C-11741. Permit: 5-98, 108-02, 262-02, 63-08E, TBD	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU19-KHTCHARHTR-S1	Kerosene Hydrotreater Charge Heater. Area 19. Fuel: Refinery fuel gas, and natural gas. Permits: C-11494, 108-02, 262-02, 63-08E, TBD	11/09/2005	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU21-S2OFFGAS-S1	Disulfide separator off-gas at the Cracking Plant Treater. Area 21. The separator off-gas (DV21-V33) is normally routed to the FCCU charge heater (DV11-H1). It is also routable to the FCCU flare (DV25-FS). Permit: 262-02, 63-08E, TBD	11/09/2005	FGPROCVENTS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU22-TANKFARMS-S1	Tank Farm, Area 22. This emission group covers the three tanks farm areas. Permit: 262-02, 63-08E, TBD	11/09/2005 11/05/2012	FGPROCUNITS-S1 FGDHOUANNUAL-S1
EU27-ZURNBOILER-S1	Gas-fired Zurn boiler, Area 27. Fuel: natural gas. Permit: 18-12B, 63-08E, TBD	05/20/1991	FG-BOILERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1 FGCHANGES-S1
EU27-B&WBOILER1-S1	Gas-fired boiler, Area 27. Fuel: Refinery fuel gas and natural gas. Permit: 67-02 18-12B, 63-08E, TBD	11/01/2003 11/05/2012	FG-BOILERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU-TEMP_BOILER-S1	Temporary portable boiler. Fuel: Natural gas. Maximum heat input capacity of no greater than 97.48 MMBtu/hr. Permit: 18-12B, TBD	Notification Date	FG-BOILERS-S1 FGDPPANNUAL-S1
EU42-43SULRECOV-S1	Sulfur Plant. Area 42 and 43. The Sulfur Recovery Plant removes hydrogen sulfide from acid gas and converts it to elemental sulfur using Claus Process (Trains A, B and C) and the SCOT Tail Gas Treating Unit process (Trains No. 1 and No. 2). The exhaust tail gas is routed to the thermal oxidizer. This emission group consists of process vessels (including thermal reactors, an absorbing tower, and a stripping tower), heaters, tanks, containers, compressors, seals, process valves, flanges, connectors, etc.). Other EU's have been created to address individual units which have specific applicable requirements. Permit: C-9603, 9604, 9605, 262-02, 81-12, 63-08E, TBD	11/09/2005 11/05/2012	FGPROCUNITS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1 FGTIER3-S1 FGTIER3SO2-S1 FGCHANGES-S1 FGSULFURPROD-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU70-COKER-S1	<p>Delayed Coker. Area 70. The Coker converts Vacuum Resid (Crude Vacuum Tower Bottoms), a product normally sold as asphalt or blended into residual fuel oil, into lighter, more valuable products. The Vacuum Resid feedstock is heated before it enters the main fractionator, where lighter material vaporizes. The fractionator bottoms are routed through a fired heater and then into a coke drum. This emission unit consists of process vessels (fractionators), coke drums, heater, cooling tower, compressors, pumps, piping, drains, and various components (pumps and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). This emission group includes the Coke Handling System, which will collect, size, and transport the petroleum coke created during the coking process. This system consists of a coke pit, storage pad, enclosed crusher, enclosed conveyors, and surge bins. Other EU's were created to address individual pieces of equipment within this unit that have specific applicable requirements. Permit: 63-08E, TBD</p>	11/05/2012	FGPROCUNITS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU70-COKERHTR-S1	<p>Coker Charge Heater. Area 70. Fuel: Refinery fuel gas and natural gas. Permit: 63-08D, TBD</p>	11/05/2012	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EU72-SULRBLOCK2-S1	<p>Sulfur Block 2. Area 72. The Sulfur Block removes hydrogen sulfide from acid gas and converts it to elemental sulfur using Claus Process (Trains A and B), the SCOT Tail Gas Treating Unit process (Trains No. 1 and No. 2), and associated amine treating equipment. The exhaust tail gas is routed to a thermal oxidizer. This emission group consists of process vessels (including thermal reactors, an absorbing tower, and a stripping tower), heaters, tanks, containers, compressors, seals, process valves, flanges, connectors, etc.). Other EU's have been created to address individual units which have specific applicable requirements. Permit: 63-08E</p>	11/05/2012	FGPROCUNITS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1 FGTIER3-S1 FGTIER3SO2-S1 FGSULFURPROD-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU77-DHTHTR-S1	Distillate Hydrotreater Heater. Area 77. Fuel: Refinery fuel gas and natural gas. Permit: 63-08E, TBD	11/05/2012	FGHEATERS-S1 FGDPPANNUAL-S1 FGDHOUANNUAL-S1
EUTANK11-S1	Tank 11, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 585,900 gallons. Permit: 262-02, TBD	01/01/1975	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK16-S1	Tank 16, a cone roof tank for the storage of heavy petroleum liquids with a true V. P. of 1.5 psia or less. Capacity = 190512 gallons. Permit: 262-02, TBD	01/01/1961	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK17-S1	Tank 17, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 190,512 gallons. Permit: 262-02, TBD	01/01/1961	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK18-S1	Tank 18, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 389,382 gallons. Permit: 262-02, TBD	01/01/1961	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK19-S1	Tank 19, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure of 11.0 psia or less. Capacity = 389,382 gallons. Permit: 262-02, TBD	11/09/2005	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK23-S1	Tank 23, an internal floating roof tank for the storage of slop oil. Capacity = 455,000 gallons. Permit: 198-02, TBD	10/26/2003	FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK24-S1	Tank 24, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 949,536 gallons. Permit: 262-02, TBD	01/01/1948	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK27-S1	Tank 27, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 870,408 gallons. Permit: 262-02, TBD	01/01/1952	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK28-S1	Tank 28, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 951,048 gallons. Permit: 262-02, TBD	01/01/1948	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK30-S1	Tank 30, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 974,358 gallons. Permit: 262-02, TBD	01/01/1948	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK31-S1	Tank 31, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 959,658 gallons. Permit: 262-02, TBD	01/01/1948	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK32-S1	Tank 32, External Floating Roof Tank. , TBD	01/01/1970	FGEFRTANKS-S1 FGDPPANNUAL-S1
EUTANK33-S1	Tank 33, External Floating Roof Tank. , TBD	01/01/1976 (install) 01/01/1999 (modify)	FGEFRTANKS-S1 FGDPPANNUAL-S1
EUTANK40-S1	Tank 40, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure of less than 11 psia. Capacity = 904,680 gallons. Permit: 262-02, TBD	01/01/1948 (install) 01/01/1989 (modify)	FGNAPHTHATANKS-S1 FGDPPANNUAL-S1
EUTANK45-S1	Tank 45, an internal floating roof tank for the storage of volatile organic compounds with a true vapor pressure less than 11 psia. Capacity = 172,368 gallons. Permit: 262-02, TBD	01/01/1954	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK46-S1	Tank 46, an internal floating roof tank for the storage of volatile organic compounds with a true vapor pressure less than 11 psia. Capacity = 172,368 gallons. Permit: 262-02, TBD	01/01/1954	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK47-S1	Tank 47, an internal floating roof tank for the storage of volatile organic compounds with a true vapor pressure less than 11 psia. Capacity = 172,368 gallons. Permit: 262-02, TBD	01/01/1954	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK48-S1	Tank 48, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity = 371,448 gallons. Permit: 262-02, TBD	01/01/1954	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK49-S1	Tank 49, an internal floating roof tank for the storage of Volatile Organic Liquids with a true vapor pressure of less than 11 psia. Capacity = 309,036 gallons. Permit: 262-02, TBD	01/01/1954 (install) 01/01/1989 (modify)	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK50-S1	Tank 50, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 1,685,880 gallons. Permit: 262-02, TBD	01/01/1954	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK51-S1	Tank 51, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity= 1,689,660 gallons. Permit: TBD	01/01/1967 (install) 01/12/98 (modify)	FGIFRTANKS-S1 FGDPPANNUAL-S1
EUTANK52-S1	Tank 52, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity = 988,480 gallons. Permit: 262-02, TBD	01/01/1954	FGIFRTANKS-S1 FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK53-S1	Tank 53 (Device DVTANK53), an internal floating roof tank for the storage of volatile organic liquids with a true vapor pressure less than 11 psia. The floating roof utilizes a mechanical shoe primary seal with rim-mounted secondary seal (per NSPS Kb). Shell height = 52 feet, Vent height= 47 feet, Shell diameter= 100 feet. Capacity= 2,528,400 gallons. Permit: 262-02, TBD	05/27/1999	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK54-S1	Tank 54, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 3,049,200 gallons. Permit: 262-02, TBD	01/01/1947	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK55-S1	Tank 55, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity 1,999,200 gallons. Permit: 262-02, TBD	01/01/1940	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGHOUPTANKS-S1 FGDPPANNUAL-S1
EUTANK56-S1	Tank 56, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 2,110,920 gallons. Permit: 262-02, TBD	01/01/1941	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK57-S1	Tank 57, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure of 11 psia or less. Capacity = 2,152,080 gallons. Permit: 262-02, TBD	01/01/1945	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK58-S1	Tank 58, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity = 2,058,000 gallons. Permit: 262-02, TBD	01/01/1947	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK59-S1	Tank 59, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 2,175,600 gallons. Permit: 262-02, TBD	01/01/1948	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK60-S1	Tank 60, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 2,175,600 gallons. Permit: 262-02, TBD	01/01/1948	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK61-S1	Tank 61, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity = 554,190 gallons. Permit: 262-02, TBD	01/01/1958	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK62-S1	Tank 62, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 554,190 gallons. Permit: 262-02, TBD	01/01/1958	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK63-S1	Tank 63, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 574,770 gallons. Permit: 262-02, TBD	01/01/1954	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK64-S1	Tank 64, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 581,196 gallons. Permit 262-02, TBD	01/01/1964	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK70-S1	Tank 70, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 972,804 gallons. Permit: 262-02, TBD	01/01/1958	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK71-S1	Tank 71, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 972,804 gallons. Permit 262-02, TBD	01/01/1958	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK72-S1	Tank 72, an internal floating roof tank for the storage of petroleum liquids with a true V. P. of less than 11 psia. Capacity = 1,872,780 gallons. Permit: 262-02, TBD	01/01/1977	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1
EUTANK100-S1	Tank 100, a cone roof tank for the storage of heavy petroleum liquids with a true V. P. of 1.5 psia or less. Capacity = 3,900,540 gallons. Permit: 262-02, TBD	01/01/1950	FGGROUP2-S1 FGDHOU PANNUAL-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK101-S1	Tank 101, an internal floating roof tank for the storage of petroleum liquids with a true V.P. of 11 psia or less. Capacity = 3,885,000 gallons. Permit: 262-02, TBD	01/01/1952 01/01/2001 Modify	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK102-S1	Tank 102, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 3,885,000 gallons. Permit: 262-02, TBD	01/01/1952	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK103-S1	Tank 103, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 3,885,000 gallons. Permit: 262-02, TBD	01/01/1952	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK104-S1	Tank 104, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure of 11 psia or less. Capacity = 4,673,550 gallons. Permit: 262-02, 388-07, 63-08E, TBD	01/01/1952 11/03/2011	FGGROUP2-S1 FGNAPHTHATANKS-S1 FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK105-S1	Tank 105, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 4,820,130 gallons. Permit: 262-02, TBD	01/01/1952	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK106-S1	Tank 106, a cone roof tank for the storage of heavy petroleum liquids with a true V.P of 1.5 psia or less. Capacity = 4,730,670 gallons. Permit: 262-02, TBD	01/01/1952	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK107-S1	Tank 107, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 4,732,560 gallons. Permit: 262-02, TBD	01/01/1952	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK108-S1	Tank 108, an external floating roof tank for the storage of petroleum liquids with a true V.P. of less than 11 psia. Capacity = 6,396,852 gallons. Permit: 262-02, TBD	01/01/1960	FGEFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK109-S1	Tank 109, an external floating roof tank for the storage of petroleum liquids with a true V.P. of less than 11 psia. Capacity = 6,398,658 gallons. Permit: 262-02, TBD	01/01/1960	FGEFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK110-S1	Tank 110, an external floating roof tank for the storage of petroleum liquids with a true V.P. of less than 11 psia. Capacity = 6,461,868 gallons. This tank will be converted to an internal floating roof tank by installation a geodesic dome over the tank. Permit: 262-02, TBD	01/01/1960	FGEFRTANKS-S1 FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK112-S1	Tank 112, an external floating roof tank for the storage of petroleum liquids with a true vapor pressure of less than 11 psia. Capacity = 8,184,792 gallons. Permit: 262-02, TBD	01/01/1966	FGEFRTANKS-S1 FGCRUDETANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK113-S1	Tank 113, an external floating roof tank for the storage of petroleum liquids with a true vapor pressure of less than 11 psia. Capacity = 8,105,328 gallons. Permit: 262-02, TBD	01/01/1960	FGEFRTANKS-S1 FGCRUDETANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK114-S1	Tank 114, an external floating roof tank for the storage of petroleum liquids with a true vapor pressure of less than 11 psia. Capacity = 2,503,116 gallons. Permit: 262-02, TBD	01/01/1960	FGEFRTANKS-S1 FGCRUDETANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK115-S1	Tank 115, an external floating roof tank for the storage of petroleum liquids with a true vapor pressure of less than 11 psia. Capacity = 2,503,116 gallons. Permit 262-02, TBD	01/01/1960	FGEFRTANKS-S1 FGCRUDETANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK116-S1	Tank 116, an internal floating roof tank for the storage of petroleum liquids with true vapor pressure less than 11 psia. Capacity = 4,515,000 gallons. Permit: C-6779, 262-02, TBD	01/01/1985	FGNAPHTHATANKS-S1 FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK120-S1	Tank 120, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure less than 11 psia. Capacity = 4,743,900 gallons. Permit: 262-02, 63-08E, TBD	01/01/1964 04/19/2012	FGGROUP2-S1 FGNAPHTHATANKS-S1 FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK125-S1	Tank 125, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 6,644,800 gallons. Permit: 262-02, TBD	01/01/1970	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK126-S1	Tank 126, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 6,350,400 gallons. Permit: 262-02, TBD	01/01/1970	FGGROUP2-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK127-S1	Tank 127, an external floating roof for storage of petroleum liquids with a true vapor pressure of 11 psia or less. Capacity = 5,880,000 gallons. Permit: 262-02, TBD	01/01/1974	FGGROUP2-S1 FGEFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK128-S1	Tank 128, an external floating roof for storage of petroleum liquids with a true V. P. of 11 psia or less. Capacity = 6,209,028 gallons. Permit: 262-02, TBD	11/09/2005	FGGROUP2-S1 FGEFRTANKS-S1 FGNAPHTHATANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK129-S1	Tank 129, an external floating roof tank for the storage of petroleum liquids with a true V. P. of less than 11 psia. Capacity = 5,033,700 gallons. Permit: 232-02, 262-02, TBD	01/01/1989	FGEFRTANKS-S1 FGCRUDETANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK130-S1	Tank 130, an external floating roof tank for the storage of petroleum liquids with a true vapor pressure of less than 11 psia. Capacity = 5,688,900 gallons. Permit: 262-02, TBD	01/01/1974	FGEFRTANKS-S1 FGCRUDETANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK133-S1	Tank 133, a cone roof tank for the storage of asphalt with a true vapor pressure of 0.5 psia or less. This tank has a visible emissions control system. (DVTK133CONTROL) Capacity = 5,893,020 gallons. Permit: TBD	01/01/1975 (install) 01/01/1998 (modify)	FGTANKS133&134-S1 FGDPPANNUAL-S1
EUTANK134-S1	Tank 134, a cone roof tank for the storage of asphalt with a true vapor pressure of 0.5 psia or less. This tank has a visible emissions control system (DVTK134CONTROL). Capacity = 6,308,820 gallons. Permit: TBD	01/01/1977 (install) 01/01/1998 (modify)	FGTANKS133&134-S1 FGDPPANNUAL-S1
EUTANK216-S1	Tank 216, an internal floating roof tank for the storage of sour water from EU72-SULRBLOCK2-S1. Capacity = 1,500,000 gallons. Permit: 63-08E, TBD	11/05/2012	FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK314-S1	Tank 314, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 2,177,154 gallons. Permit: 262-02, TBD	01/01/1968	FGGROUP2-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUTANK315-S1	Tank 315, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 2,177,154 gallons. Permit: 262-02, TBD	01/01/1968	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK316-S1	Tank 316, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 4,674,096 gallons. Permit: 262-02, TBD	01/01/1972	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK317-S1	Tank 317, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 8,542,800 gallons. Permit: 262-02, TBD	01/01/1972	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK318-S1	Tank 318, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 6,771,870 gallons. Permit: 262-02, TBD	01/01/1972	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK319-S1	Tank 319, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 3,780,000 gallons. Permit: 262-02, TBD	01/01/1972	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK320-S1	Tank 320, a cone roof tank for the storage of heavy petroleum liquids with a true vapor pressure of 1.5 psia or less. Capacity = 6,771,870 gallons. Permit: 262-02, TBD	01/01/1972	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK324-S1	Tank 324, a cone roof tank for the storage of heavy petroleum liquids with true vapor pressure less than 0.75 psia. Capacity = 76,734 gallons. Permit: C-7167, 262-02, TBD	01/01/1986	FGGROUP2-S1 FGDPPANNUAL-S1
EUTANK507-S1	Tank 507, an internal floating roof tank for the storage of petroleum liquids with a true vapor pressure of 11 psia or less. Capacity = 193,914 gallons. Permit: TBD	01/01/2003	FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK508-S1	Tank 508, an internal floating roof tank for the storage of petroleum liquids with a true V.P. of less than 11 psia. Capacity = 350,658 gallons. Permit: C-9941, TBD	01/01/1972 (install) 01/01/1993 (modify)	FGIFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK601-S1	Tank 601, an external floating roof tank for the storage of wastewater. Capacity = 4,200,000 gallons. Permit: 63-08E, TBD	11/05/2012	FGEFRTANKS-S1 FGDHOUANNUAL-S1 FGDPPANNUAL-S1
EUTANK22T118-S1	Tank 22T118, an internal floating roof tank. Permit: 245-07B, TBD	01/01/2009	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDPPANNUAL-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUETHTANK-S1	Tank 135, Ethanol Tank, an internal floating roof tank for the storage of ethanol. Capacity = 50,000 barrels. Permit: 198-06, TBD	01/01/2007	FGIFRTANKS-S1 FGNAPHTHATANKS-S1 FGDPPANNUAL-S1
EU-COKERFLARE-S1	Coker Plant Flare. Area 76. Permit: 63-08E, 57-20, TBD	11/05/2012	FG-FLARES-S1 FGDHOUANNUAL-S1
EUCRUDEFLARE-S1	Crude/Vacuum Unit Flare. Area 4. Permit: 63-08E, 57-20, TBD	01/01/1966 11/05/2012	FGFLARES-S1 FGREFINEFLARES-S1
EUUNIFFLARE-S1	Unifiner Flare. Area 7. Permit: 63-08E, 57-20, TBD	01/01/1974 11/05/2012	FGFLARES-S1 FGREFINEFLARES-S1
EUALKYFLARE-S1	Alkylation Unit Flare. Area 9. Permit: 63-08E, 57-20, TBD	01/01/1974 11/05/2012	FGFLARES-S1 FGREFINEFLARES-S1

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EU-CRUDEFLARE-S1
EMISSION UNIT CONDITIONS**

DESCRIPTION:

Crude/Vacuum Unit Flare. Area 4. Permit: TBD

Flexible Group IDs: FGFLARES-S1, FGREFINEFLARES-S1, FGDPPANNUAL-S1

POLLUTION CONTROL EQUIPMENT:

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. On and after December 31, 2025, the permittee shall not operate EU-CRUDEFLARE-S1. **(R 336.1205, R 335.1224, R 336.1225, R 336.1702)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than shutdown of EU-CRUDEFLARE-S1. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EU70-COKER-S1 EMISSION UNIT CONDITIONS

DESCRIPTION:

The Coker converts Vacuum Resid (Crude Vacuum Tower Bottoms), a product normally sold as asphalt or blended into residual fuel oil, into lighter, more valuable products. The Vacuum Resid feedstock is heated before it enters the main fractionator, where lighter material vaporizes. The fractionator bottoms are routed through a fired heater and then into a coke drum. This emission unit consists of process vessels (fractionators), coke drums, heater, cooling tower, compressors, pumps, piping, drains, and various components (pumps and compressor seals, process valves, pressure relief valves, flanges, connectors, etc.). This emission group includes the Coke Handling System, which will collect, size, and transport the petroleum coke created during the coking process. This system consists of a coke pit, storage pad, enclosed crusher, enclosed conveyors, and surge bins. Other EU's were created to address individual pieces of equipment within this unit that have specific applicable requirements. Permit: 63-08E, TBD

Flexible Group IDs: FGPROCUNITS-S1, FGDHOUANNUAL-S1, FGDPPANNUAL-S1

POLLUTION CONTROL EQUIPMENT:

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Visible emissions	No visible emissions	Based upon a six minute average	Truck loading; weigh bins; and the coke handling system beginning with the enclosed conveyor leading to the crusher.	SC VI.2	R 336.1301
2. VOC	20 tpy	12 month rolling time period*	Exhaust from coke drum steam vent.	SC V.1 SC VI.7	R 336.1702
3. PM	1.0 tpy	12 month rolling time period*	Exhaust from coke drum steam vent.	SC V.1 SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21
4. H2S	0.7 tpy	12 month rolling time period*	Exhaust from coke drum steam vent.	SC V.1 SC VI.7	R 336.1224, R 336.1226(d)

*Based upon a 12-month rolling time period as determined at the end of each calendar month

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Coke production	500 tons per hour	Daily average	Equipment subject to SC I.1	SC VI.4	R 336.1205, R 336.2802, 40 CFR 52.21

2. The permittee shall not recycle coker blowdown water as quench water in the coke drums. **(R 336.1205, R 336.2802, 40 CFR 52.21)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not vent the active coke drum to the atmosphere until the end of the coking cycle, when the drum pressure is 2 psig or less. **(R 336.1205, R 336.1702, R 336.2802, 40 CFR 52.21, 40 CFR Part 60, Subparts A and Ja)**
2. The permittee shall not remove coke from a coke drum or handle coke after removal from a coke drum unless a program for continuous fugitive emissions control has been submitted to the AQD District Supervisor as a proposed revision to the Fugitive Dust Control Program required in Table B-1 of ROP No. 199700013c. The proposed revision shall address the following aspects of the coke handling system: all plant roadways, the plant yard, all material storage piles, and all material handling operations. The submitted program shall include, as a minimum, all of the following:
 - a) Use of jet water sprays to empty the coke drum into a coke pit below the grade of the coke storage pad.
 - b) Use of water sprays on any coke stockpile and during coke crushing to maintain coke moisture.
 - c) Monitoring and correction of coke moisture to comply with SC I.1.
 - d) Use of bridge cranes to transfer coke from the pit to a stockpile and from a stockpile to the crusher receiving hopper, except as allowed in SC III.2.e.
 - e) Limited use of front-end loaders or other vehicles on the coke storage pad: only during bridge crane maintenance or breakdown.
 - f) Inspection, maintenance, and monitoring of a "totally enclosed gallery" for transporting crushed coke from the crusher to the surge/weigh bin system.The permittee shall comply with the submitted program until the AQD District Supervisor approves the program or approves an amended program. Thereafter, the permittee shall comply with the approved program. At any time, the permittee may submit a modified program to the AQD District Supervisor for review and approval. **(R 336.1371, R 336.1372, Act 451 324.5524)**

3. The height of any coke pile on the storage pad shall not exceed the height of the perimeter wall at any time. **(R 336.1301)**
4. The permittee shall not operate any equipment in the coke handling system unless a malfunction abatement plan (MAP) as described in Rule 911(2), for the coke handling system, has been submitted no less than 120 days before commencing operation of the coke handling system, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1301, R 336.1331, R 336.1910, R 336.1911, R 336.2802, 40 CFR 52.21)**
As a minimum, the MAP shall address the following:
 - a) Maintaining required coke moisture content.
 - b) Maintaining the integrity of all enclosures: integral crusher enclosure, conveyor enclosures and the shed for truck loading.
 - c) Surge bin dust collector.

5. The permittee shall not cycle the coke drums more than 500 times per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1205, R 336.2802, 40 CFR 52.21)**
6. The permittee shall keep the coke adequately wetted to ensure that the opacity limit in SC I.1 is met. **(R 336.1205, R 336.2802, R 336.1301, 40 CFR 52.21)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain the coker with a gas recovery system to recover the coke drum vapors and route them to the fuel gas treatment system. **(R 336.1205, R 336.1702)**
2. The permittee shall equip and maintain the coker with instrumentation to monitor the pressure in the coke drum during coking cycles. **(R 336.1205, R 336.1702, 40 CFR Part 60, Subparts A and Ja)**

3. The permittee shall equip and maintain the coke storage area with a pit below the grade of the coke storage pad and with perimeter walls no less than 30 feet above the level of the coke storage pad. **(R 336.1301)**
4. The permittee shall not convey crushed coke to the surge bins unless the totally enclosed conveyors and surge bin dust collector are installed, maintained, and operated in a satisfactory manner. **(R 336.1910)**
5. The permittee shall not load trucks with crushed coke unless the surge bin dust collector is installed, maintained, and operated in a satisfactory manner. **(R 336.1910)**
6. The permittee shall not operate the Coker wet gas compressor (70C1) unless the compressor seal vent is routed to EU-COKERFLARE-S1. **(R 336.1205, R 336.2802, 40 CFR 52.21)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 180 days after commencement of trial operation of EU70-COKER-S1, and annually thereafter, the permittee shall determine VOC, PM, and H₂S emission rates from the coke drum steam vent by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Determination of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. At any time after completing five tests acceptable to the AQD District Supervisor, the permittee may request that the testing frequency be reduced. If the testing frequency is reduced, testing shall be conducted no less often than once every five years. Test results shall be used to calculate emissions as required by SC VI.7, and to determine compliance with the requirements for FGDHOUPANNUAL-S1. **(R 336.1205, R 336.1224, R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2802, 40 CFR 52.21)**
2. For tests required by SC V.1, the following applies for valid, regularly scheduled tests, conducted during normal operations:³ **(R 336.1201(3))**
 - a) If a test indicates non-compliance with a permitted emission rate, and the test is required to be conducted on either a three or five year cycle, the frequency of such tests shall be annual for two consecutive years. Following two consecutive years of compliance, the frequency of testing shall return to the original three or five year cycle.

See Appendix 5-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep, in a satisfactory manner, a record of the coke drum pressure at which the active drum is vented to the atmosphere. **(R 336.1205, R 336.1702, 40 CFR Part 60, Subparts A and Ja)**
2. The permittee shall verify the absence of visible emissions by taking six-minute visible emission readings for the equipment listed in SC I.1 a minimum of once per calendar day. The reader shall take each visible emission reading during routine operating conditions. For purposes of this condition, the opacity reading is not required to use Method 9. If the permittee observes any visible emissions, the permittee shall immediately initiate corrective actions. **(R 336.1301)**
3. The permittee shall monitor, in a satisfactory manner, the moisture of the coke on the coke storage pad and other non-enclosed areas three times per week, as provided in the approved fugitive dust control program for EU70-COKER-S1. **(R 336.1205, Act 451 324.5524)**
4. The permittee shall keep, in a satisfactory manner, a daily record of the amount of coke loaded onto trucks for shipping. **(R 336.1205)**
5. The permittee shall keep, in a satisfactory manner, records of coke moisture, as required by SC VI.3. **(R 336.1205, Act 451 324.5524)**

6. The permittee shall keep, in a satisfactory manner, records of all visible emission readings required by SC VI.2. At a minimum, records shall include the date, time, name of observer/reader, and status of visible emissions. **(R 336.1301)**
7. The permittee shall calculate the VOC, PM, and H₂S emission rates from the coke drum steam vent monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. As soon as test results acceptable to the AQD District Supervisor are available from the testing required by SC V.1, the permittee shall use emission factors derived from testing to calculate emission rates. **(R 336.1205, R 336.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
8. The permittee shall keep, in a satisfactory manner, records of the number of times the coke drums are cycled for each month and for each 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, R 336.2802, 40 CFR 52.21)**

VII. REPORTING

NA

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. Coke Drum Vent (unobstructed vertical discharge not required)	not restricted	222	R 336.1225, R 336.1226(d)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³This condition is included at the request of the permittee.

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGDPPANNUAL-S1	<p>The emission limits in this group are voluntary caps for the emission units affected by the 2024 Detroit Permitting Project. Emissions associated with compressors and the group of all equipment within a process unit, as defined in 40 CFR 60.591, are not affected by the 2024 Detroit Permitting Project and are tracked under FGPROCUNITS-S1. Permit: TBD</p>	<p>EU04-VACHTR-S1, EU04-VAC2HTR-S1, EU05-CRUDEHTR-S1, EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU09-ALKYDIBREBHTR-S1, EU11-FCCU-S1, EU11-FCCUCHARHTR-S1, EU16-NHTSTRIPREBOIL-S1, EU16-NHT2STRIPREBOIL-S1, EU16-NHTCHARHTR-S1, EU16-NHT2CHARHTR-S1, EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU19-KHTCHARHTR-S1, EU21-S2OFFGAS-S1, EU27-ZURNBOILER-S1, EU27-B&WBOILER1-S1, EU-TEMP_BOILER-S1, EU42-43SULRECOV-S1, EU70-COKER-S1, EU70-COKERHTR-S1, EU72-SULRBLOCK2-S1, EU77-DHTHTR-S1, EUTANK16-S1, EUTANK17-S1, EUTANK18-S1, EUTANK19-S1, EUTANK23-S1, EUTANK24-S1, EUTANK27-S1, EUTANK28-S1, EUTANK30-S1, EUTANK31-S1, EUTANK32-S1, EUTANK33-S1, EU29TANK40-S1, EU29TANK41-S1, EUTANK40-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK50-S1, EUTANK51-S1, EUTANK52-S1, EUTANK53-S1, EUTANK54-S1, EUTANK55-S1, EUTANK56-S1, EUTANK57-S1, EUTANK58-S1, EUTANK59-S1, EUTANK60-S1, EUTANK61-S1, EUTANK62-S1, EUTANK63-S1, EUTANK64-S1, EUTANK70-S1, EUTANK71-S1, EUTANK72-S1, EUTANK100-S1, EUTANK101-S1, EUTANK102-S1, EUTANK103-S1, EUTANK104-S1, EUTANK105-S1, EUTANK106-S1, EUTANK107-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK116-S1, EUTANK120-S1, EUTANK125-S1, EUTANK126-S1, EUTANK127-S1, EUTANK128-S1, EUTANK129-S1, EUTANK130-S1, EUTANK133-S1, EUTANK134-S1, EUTANK216-S1, EUTANK314-S1, EUTANK315-S1, EUTANK316-S1, EUTANK317-S1, EUTANK318-S1, EUTANK319-S1, EUTANK320-S1, EUTANK324-S1, EUTANK507-S1, EUTANK508-S1, EUTANK601</p>

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGHEATERS-S1	All refinery heaters and boilers that burn refinery fuel gas (NSPS, 40 CFR Part 60, Subpart J and where applicable Subpart Ja) Permit: 63-08E, TBD	EU04-VACHTR-S1, EU04-VAC2HTR-S1, EU05-CRUDEHTR-S1, EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU09-ALKYDIBREBHTR-S1, EU11-FCCUCHARHTR-S1, EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU16-NHTSTRIPREBOIL-S1, EU16-NHT2STRIPREBOIL-S1, EU16-NHTCHARHTR-S1, EU16-NHT2CHARHTR-S1, EU19-KHTCHARHTR-S1, EU22-FUELOILHTR-S1, EU70-COKERHTR-S1, EU77-DHTHTR-S1
FGGROUP2-S1	40 CFR Part 63, Subpart CC Group 2 Storage Tanks. Permit: 63-08E, TBD	EUTANK11-S1, EUTANK16-S1, EUTANK17-S1, EUTANK18-S1, EUTANK24-S1, EUTANK27-S1, EUTANK28-S1, EUTANK30-S1, EUTANK31-S1, EUTANK50-S1, EUTANK52-S1, EUTANK54-S1, EUTANK56-S1, EUTANK59-S1, EUTANK60-S1, EUTANK62-S1, EUTANK63-S1, EUTANK64-S1, EUTANK70-S1, EUTANK71-S1, EUTANK100-S1, EUTANK102-S1, EUTANK103-S1, EUTANK104-S1, EUTANK105-S1, EUTANK106-S1, EUTANK107-S1, EUTANK120-S1, EUTANK125-S1, EUTANK126-S1, EUTANK127-S1, EUTANK128-S1, EUTANK314-S1, EUTANK315-S1, EUTANK316-S1, EUTANK317-S1, EUTANK318-S1, EUTANK319-S1, EUTANK320-S1, EUTANK324-S1
FGIFRTANKS-S1	Internal floating roof tanks (IFR) that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR 60, Subpart Kb. These tanks also may be subject to Michigan Air Pollution Control Rule 604 (R336.1604). This represents a consolidated requirement for internal floating roof tanks. Permit: 63-08E, TBD	EUTANK19-S1, EUTANK23-S1, EUTANK40-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK51-S1, EUTANK52-S1, EUTANK53-S1, EUTANK55-S1, EUTANK57-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, EUTANK101-S1, EUTANK104-S1, EUTANK116-S1, EUTANK120-S1, EUETHTANK-S1, EUTANK507-S1, EUTANK508-S1, EUTANK216-S1, EUTANK29T79-S1, EUTANK22T118-S1, EUTANK110-S1

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGEFRTANKS-S1	<p>External floating roof tanks (EFR) that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks may also be subject to Michigan Air Pollution Control Rule 623 (R 336.1623) and/or NSPS Subpart QQQ. This consolidated requirement basically adopts NSPS Kb for these EFR tanks. Permit: 63-08E, TBD</p>	<p>EUTANK32-S1, EUTANK33-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK128-S1, EUTANK129-S1, EUTANK130-S1, EUTANK601-S1, EU29TANK40-S1, EU29TANK41-S1, EUTANK127-S1</p>
FGCRUDETANKS-S1	<p>External floating roof (EFR) tanks that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks may also be subject to Michigan Air Pollution Control Rule 623 (R 336.1623) and/or NSPS Subpart QQQ. This consolidated requirement basically adopts NSPS Kb for these EFR tanks. Permit: 63-08E, TBD</p>	<p>EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK129-S1, EUTANK130-S1</p>

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGNAPHTHATANKS-S1	Internal and external floating roof tanks that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks may also be subject to Michigan Air Pollution Control Rule 623 (R 336.1623) and/or NSPS Subpart QQQ. This consolidated requirement basically adopts NSPS Kb for these tanks. Permit: 63-08E, TBD	EUTANK19-S1, EUTANK40-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK53-S1, EUTANK55-S1, EUTANK57-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, EUTANK101-S1, EUTANK104-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK116-S1, EUTANK120-S1, EUTANK127-S1, EUTANK128-S1, EUTANK29T79-S1, EUETHANK-S1, EUTANK22T118-S1,

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGDHOU PANNUAL-S1	<p>These emission units and flexible groups used the Actual-to-Potential test for PSD applicability for the Detroit Heavy Oil Upgrade Project. The previous emission limits in this group served to limit the Potential to Emit of covered equipment. The requirement to meet the previous emission limits and keep records of emissions expired on November 5, 2022, so the emission limits and associated recordkeeping and reporting have been removed. Permit: 63-08E, TBD</p>	<p>EU04-VACUUM-S1, EU04-VACHRT-S1, EU04-VAC2HTR-S1, EU05-CRUDE-S1, EU05-CRUDEHTR-S1, EU07-DHT-S1, EU08-GOHT-S1, EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU09-ALKYDIBREBHTR-S1, EU09-ALKYLATION-S1, EU11-FCCU-S1, EU12-GASCON-S1, EU16-NAPHHYTREAT-S1, EU16-NHTSTRIPREBOIL-S1, EU16-NHTCHARHTR-S1, EU13-PROPYLENE-S1, EU14-CRRPLATFORMER-S1, EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU14-CCRPLCATREG-S1, EU19-KEROHYTREAT-S1, EU19-KHTCHARHTR-S1, EU21-CPTREATER-S1, EU21-S2OFFGAS-S1, EU22-FUELOILHTR-S1, EU22-LPGRAILRACK-S1, EU22-TANKFARMS-S1, EU22-ASPHLOAD-S1, EU22-PENTLOAD-S1, EU27-ZURNBOILER-S1, EU27-B&WBOILER1-S1, EU29-WASTEWATER-S1, EU29-IGF1-S1, EU29-IGF2-S1, EU38-ROUGETERMNL-S1, EU41-SOURWATER-S1, EU42-43SULRECOV-S1, EU70-COKER-S1, EU70-COKERHTR-S1, EU-COKERFLARE-S1, EU72-SULRBLOCK2-S1, EU73-SOURWATER-S1, EU76-UTILITIES-S1, EU77-DHTHYTREAT-S1, EU77-DHTHTR-S1, EU78-FUELGASRECOVERY-S1, EU99-LPGLOADRACK-S1, EU COOLTOWERA-S1, EU COOLTOWERC-S1, EU COOLTOWERD-S1, EU COOLTOWERE-S1, EU COOLTOWERF-S1, EU COOLTOWERG-S1, EU COOLTOWERH-S1, EU COOLTOWERNEW-S1, EUTANK16-S1, EUTANK17-S1, EUTANK19-S1, EUTANK23-S1, EUTANK24-S1, EUTANK27-S1, EUTANK28-S1, EU29TANK40-S1, EU29TANK41-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK50-S1, EUTANK53-S1, EUTANK54-S1, EUTANK55-S1, EUTANK56-S1, EUTANK57-S1, EUTANK58-S1, EUTANK59-S1, EUTANK60-S1, EUTANK61-S1, EUTANK62-S1, EUTANK63-S1, EUTANK64-S1, EUTANK70-S1, EUTANK71-S1, EUTANK72-S1, EUTANK100-S1, EUTANK101-S1, EUTANK102-S1, EUTANK103-S1, EUTANK104-S1, EUTANK105-S1, EUTANK106-S1, EUTANK107-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK116-S1, EUTANK120-S1, EUTANK125-S1, EUTANK126-S1, EUTANK127-S1, EUTANK128-S1, EUTANK129-S1, EUTANK130-S1, EUTANK216-S1, EUTANK507-S1, EUTANK508-S1, EUTANK601-S1</p>

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGFLARES-S1	Refinery Flares (NSPS, 40 CFR Part 60, Subpart J and where applicable Subpart Ja) Permit: 63-08E, 57-20, TBD	EUCRUDEFLARE-S1, EUUNIFFLARE-S1, EUALKYFLARE-S1, EU-COKERFLARE-S1

**FGHEATERS-S1
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

All refinery heaters that burn refinery fuel gas (NSPS, 40 CFR 60, Subpart J and where applicable Ja).
 Permit: 63-08E, 118-15, TBD

Emission Units: EU04-VACHTR-S1, EU04-VAC2HTR-S1, EU05-CRUDEHTR-S1, EU08-GOHTCHARHTR-S1,
 EU08-GOHTCHARHTR2-S1, EU09-ALKYDIBREBTR-S1, EU11-FCCUCHARHTR-S1,
 EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU16-NHTSTRIPREBOIL-S1,
 EU16-NHT2STRIPREBOIL-S1, EU16-NHTCHARHTR-S1, EU16-NHT2CHARHTR-S1,
 EU19-KHTCHARHTR-S1, EU22-FUELOILHTR-S1, EU70-COKERHTR-S1, EU77-DHTHTR-S1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NOx	0.05 lb/MMBTU	Based upon a 12 month rolling time period as determined at the end of each calendar month.	EU04-VACHTR-S1	SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d), Consent Order No. 01-40119
2. NOx	0.060 lb/MMBTU or 60 ppmv, dry basis corrected to 0%O ₂	30 day rolling average basis	EU04-VACHTR-S1	SC VI.7	40 CFR Part 60, Subpart Ja
3. NOx	0.05 lb/MMBTU	Based upon a 12 month rolling time period as determined at the end of each calendar month	EU05-CRUDEHTR-S1	SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d), Consent Order No. 01-40119.
4. NOx	0.060 lb/MMBTU or 60 ppmv dry basis corrected to 0%O ₂	30 day rolling average basis	EU05-CRUDEHTR-S1	SC VI.7	40 CFR Part 60, Subpart Ja
5. NOx	0.05 lb/MMBTU	Based upon a 12 month rolling time period as determined at the end of each calendar month	EU08-GOHTCHARHTR-S1	SC VI.5	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
6. NOx	0.05 lb/MMBTU	Three hour average	EU11-FCCUCHARHTR-S1	SC V.8	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
7. NOx	0.05 lb/MMBTU	Based upon a 12 month rolling time period as determined at the end of each calendar month	EU14-CCRPLCHARHTR-S1	SC V.8, VI.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
8. NOx	0.05 lb/MMBTU	Based upon a 12 month rolling time period as determined at the end of each calendar month	EU14-CCRPLINTHTR-S1	SC V.8, SC VI.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
9. NOx	0.20 lb/MMBTU	Three hour average	EU16-NHTCHARHTR-S1	SC V.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
10. NOx	0.040 lb/MMBTU or 40 ppmv dry basis corrected to 0% O ₂	30 day rolling average	EU16-NHT2CHARHTR-S1	SC VI.14	R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Ja
11. NOx	0.20 lb/MMBTU	Three hour average	EU16-NHTSTRIPREBOIL-S1	SC V.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
12. NOx	0.040 lb/MMBTU or 40 ppmv dry basis corrected to 0% O ₂	30 day rolling average	EU16-NHT2STRIPREBOIL-S1	SC VI.14	R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Ja
13. NOx	0.20 lb/MMBTU	Three hour average	EU19-KHTCHARHTR-S1	SC V.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
14. NOx	0.10 lb/MMBTU	Three hour average	EU22-FUELOILHTR-S1	SC V.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
15. NOx	0.040 lb/MMBTU or 40 ppmv dry basis corrected to 0% O ₂	30 day rolling average basis	EU04-VAC2HTR-S1	SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Ja
16. NOx	0.05 lb/MMBTU	Based upon a 12 month rolling time period as determined at the end of each calendar month	EU70-COKERHTR-S1	SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
17. NOx	0.060 lb/MMBTU or 60 ppmv dry basis corrected to 0% O ₂	30 day rolling average basis	EU70-COKERHTR-S1	SC VI.7	40 CFR Part 60, Subpart Ja
18. NOx	0.040 lb/MMBTU or 40 ppmv dry basis corrected to 0% O ₂	30 day rolling average basis	EU77-DHTHTR-S1	SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d), 40 CFR Part 60, Subpart Ja

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
19. NOx	0.040 lb/MMBTU or 40 ppmv dry basis corrected to 0% O ₂	30 day rolling average basis	EU09-ALKYDIBREBHTR-S1	SC VI.7	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Ja
20. NOx	82 tpy	Based upon a 12 month rolling time period as determined at the end of each calendar month.	EU04-VACHTR-S1 and EU05-CRUDEHTR-S1 combined.	SC VI.7	R 336.1205, R 336.1201(3) Consent Order No. 01-40119, Act 451, Part 55
21. PM	0.0019 lb/MMBTU	Three hour average	Each emission unit in FGHEATERS-S1 except for EU08-GOHTCHARHTR2-S1, EU16-NHT2CHARHTR-S1, and EU16-NHT2STRIPREBOIL-S1. For EU11-FCCUCHARHTR-S1, this limit applies only to the primary fuel to the heater (refinery fuel gas).	SC V.1, SC V.3, SC V.4, SC V.5, SC V.6, SC V.8, SC V.9, SC V.10, SC V.11 SC V.12	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
22. PM10	0.0076 lb/MMBTU	Three hour average	Each emission unit in FGHEATERS-S1 except for EU08-GOHTCHARHTR2-S1, EU16-NHT2CHARHTR-S1, and EU16-NHT2STRIPREBOIL-S1. For EU11-FCCUCHARHTR-S1, this limit applies only to the primary fuel to the heater (refinery fuel gas).	SC V.1, SC V.3, SC V.4, SC V.5, SC V.6, SC V.8, SC V.10	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
23. PM2.5	0.0076 lb/MMBTU	Three hour average	EU09-ALKYDIBREBHTR-S1	SC V.5	R 336.1205, R 336.2903, 40 CFR Part 51 Appendix S
24. CO	0.01 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU05-CRUDEHTR-S1	SC VI.8	R 336.1201(3)
25. CO	0.01 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU70-COKERHTR-S1	SC VI.8	R 336.1201(3)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
26. CO	0.02 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU11-FCCUCHARHTR-S1	SC VI.8	R 336.1201(3)
27. CO	0.013 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU14-CCRPLCHARHTR-S1	SC VI.8	R 336.1201(3)
28. CO	0.01 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU04-VACHTR-S1	SC VI.8	R 336.1201(3)
29. CO	0.02 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU08-GOHTCHARHTR-S1	SC VI.8	R 336.1201(3)
30. CO	0.013 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU14-CCRPLINTHTR-S1	SC VI.8	R 336.1201(3)
31. CO	0.02 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU04-VAC2HTR-S1	SC VI.8	R 336.1201(3)
32. CO	0.02 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU77-DHTHTR-S1	SC VI.8	R 336.1201(3)
33. CO	0.02 lb/MMBTU	Three hour average	EU16-NHTCHARHTR-S1, EU16-NHTSTRIPREBOIL-S1, EU19-KHTCARHTR, EU22-FUELOILHTR-S1, EU09-ALKYDIBREBHTR-S1	SC V.5, SC V.6	R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d)
34. VOC	0.0055 lb/MMBTU	Three hour average	Each emission unit in FGHEATERS-S1	SC V.1, SC V.2, SC V.3, SC V.4, SC V.5, SC V.9, SC V.11, SC V.12, SC V.15, SC V.16, SC V.17	R 336.1702
35. NOx	0.040 lb/MMBTU or 40 ppmv, dry basis corrected to 0%O ₂	30 day rolling average basis	EU08-GOHTCHARHTR2-S1	SC VI.7	R 336.1205 40 CFR 52.21 (c) and (d) 40 CFR Part 60 Subpart Ja

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
36. PM2.5	0.0076 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1, EU16-NHT2CHARHTR-S1, EU16-NHT2STRIPREBOIL-S1	SC V.15, SC V.16, SC V.17	R 336.1205 40 CFR 52.21 (c) and (d)
37. CO	0.01 lb/MMBTU ³	Based on an annual rolling average, as determined at the end of each calendar month	EU08-GOHTCHARHTR2-S1	SC VI.8	R 336.1201(3)
38. PM	0.0019 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1	GC 13	R 336.1205
39. PM	0.0019 lb/MMBTU	Three hour average	EU16-NHT2CHARHTR-S1, EU16-NHT2STRIPREBOIL-S1	SC V.16, SC V.17	R 336.1205, 40 CFR 52.21(c) & (d)
40. PM10	0.0076 lb/MMBTU	Three hour average	EU08-GOHTCHARHTR2-S1, EU16-NHT2CHARHTR-S1, EU16-NHT2STRIPREBOIL-S1	SC V.15, SC V.16, SC V.17	R 336.1205 40 CFR 52.21 (c) and (d)
41. CO	0.02 lb/MMBTU	Three hour average	NHT2CHARHTR-S1, EU16-NHT2STRIPREBOIL-S1	SC V.16, SC V.17	R 336.1205, 40 CFR 52.21(c) & (d)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Hydrogen sulfide content of the refinery fuel gas burned in any combustion device in FGHEATERS-S1	0.10 grain per dry standard cubic foot (230 milligrams per dry standard cubic meter or 160 ppm _{dv})*	Based upon a three hour average	FGHEATERS-S1	SC VI.1	R 336.1226(d), 40 CFR 60.104(a)(1), 40 CFR 60.102a(g)(1)(ii), 40 CFR Part 60, Subparts A and J/Ja
2. Hydrogen sulfide content of the refinery fuel gas burned in any combustion device in FGHEATERS-S1	60 ppm _{dv} ³	Annual rolling average, as determined at the end of each calendar month	FGHEATERS-S1	SC VI.1	R 336.1201(3) 40 CFR 60.102a(g)(1)(ii)
3. TRS content of the refinery fuel gas	45 ppm _v ³	Daily on a 365 successive calendar day rolling average basis	EU08-GOHTCHARHTR2-S1	SC VI.2	R 336.1201(3)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
*Compliance with this limit shall be considered compliance with the limits of R 336.1406(1) which have been subsumed under this streamlined requirement.					

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The heat input to EU04-VACHTR-S1 shall not exceed 177 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
2. The heat input to EU05-CRUDEHTR-S1 shall not exceed 240 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
3. The heat input to EU08-GOHTHTR-S1 shall not exceed 115 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
4. The heat input to EU09-ALKYDIBREBHTR-S1 shall not exceed 88 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
5. The heat input to EU09-ALKYDIBREBHTR-S1 shall not exceed 84 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month. **(R 336.1201(3))**
6. The heat input to EU11-FCCUCHARHTR-S1 shall not exceed 130 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
7. The heat input to EU14-CCRPLCHARHTR-S1 shall not exceed 138 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
8. The heat input to EU14-CCRPLINTHTR-S1 shall not exceed 138 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
9. The heat input to EU16-NHTCHARHTR-S1 shall not exceed 64 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
10. The heat input to EU16-NHT2CHARHTR-S1 shall not exceed 64 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, 40 CFR 52.21(c) & (d))**
11. The heat input to EU16-NHTSTRIPREBOIL-S1 shall not exceed 46 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
12. The heat input to EU16-NHT2STRIPREBOIL-S1 shall not exceed 46 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, 40 CFR 52.21(c) & (d))**
13. The heat input to EU19-KHTCHARHTR-S1 shall not exceed 18 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
14. The heat input to EU22-FUELOILHTR-S1 shall not exceed 7.5 MMBTU/hr on a daily average. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
15. The heat input to EU04-VAC2HTR-S1 shall not exceed 96 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
16. The heat input to EU04-VAC2HTR-S1 shall not exceed 71 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month. **(R 336.1201(3))**
17. The heat input to EU70-COKERHTR-S1 shall not exceed 285 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**

18. The heat input to EU70-COKERHTR-S1 shall not exceed 250 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month. **(R 336.1201(3))**
19. The heat input to EU77-DHTHTR-S1 shall not exceed 91 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
20. The permittee shall not operate EU04-VACHTR-S1, EU05-CRUDEHTR-S1, EU08-GOHTHTR-S1, EU11-FCCUCHARHTR-S1, EU14-CCRPLCHARHTR-S1, or EU14-CCRPLINTHTR-S1 unless the unit's low NO_x burners are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1910, R 336.2802, 40 CFR 52.21(c) & (d))**
21. The permittee shall not operate EU04-VAC2HTR-S1, EU09-ALKYDIBREBHTR-S1, EU70-COKERHTR-S1, or EU77-DHTHTR-S1 unless the unit's ultra-low-NO_x burners are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1910, R 336.2802, 40 CFR 52.21(c) & (d))**
22. The permittee shall only fire refinery fuel gas and/or sweet natural gas in FGHEATERS-S1.2 **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
23. The heat input to EU08-GOHTCHARHTR2-S1 shall not exceed 115 MMBTU/hr on a daily average. **(R 336.1205, R 336.1225, 40 CFR 52.21 (c) and (d))**
24. The heat input to EU08-GOHTCHARHTR2-S1 shall not exceed 85 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month. **(R 336.1205, 40 CFR 52.21 (c) and (d))**
25. The permittee shall not operate EU08-GOHTCHARHTR2-S1 unless the unit's low-NO_x burners are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1910, 40 CFR 52.21 (c) and (d))**
26. The combined heat input to EU08-GOHTCHARHTR-S1 and EU08-GOHTCHARHTR2-S1 shall not exceed 100 MMBTU/hr on an annual rolling average, as determined at the end of each calendar month.³ **(R 336.1201(3))**
27. The permittee shall not operate EU16-NHT2CHARHTR-S1 or EU16-NHT2STRIPREBOIL-S1 unless the unit's ultra-low-NO_x burners are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1910, 40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU04-VAC2HTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**
 - PM10 **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**
 - PM **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**
 - VOC **(R 336.1702)**
2. Once during the five year term of this permit and every five years thereafter for sulfuric acid mist, and every three years thereafter for VOC, the permittee shall verify emission rates from EU04-VAC2HTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must

approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.³ **(R 336.2001, R 336.2003, R 336.2004)**

VOC³ **(R 336.1201(3))**

Sulfuric acid mist³ **(R 336.1201(3))**

3. Once during the five year term of this permit and annually thereafter for PM₁₀, PM and VOC and every five years thereafter for sulfuric acid mist, the permittee shall verify emission rates from EU70-COKERHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

PM₁₀ **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

PM **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

VOC **(R 336.1702)**

Sulfuric acid mist³ **(R 336.1201(3))**

4. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU77-DHTHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

PM₁₀ **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

PM **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

VOC **(R 336.1702)**

Sulfuric acid mist³ **(R 336.1201(3))**

5. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU09-ALKYDIBREBHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

PM₁₀ **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

PM **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

PM_{2.5} **(R 336.1205, R 336.2903, 40 CFR Part 51, Appendix S)**

CO **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

Sulfuric acid mist³ **(R 336.1201(3))**

VOC³ **(R 336.1201(3))**

6. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU16-NHTCHARHTR-S1, EU16-NHTSTRIPREBOIL-S1, EU19-KHTCHARHTR-S1, and EU22-FUELOILHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

NO_x **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

PM₁₀ **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

PM **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

CO **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**

Sulfuric acid mist³ (R 336.1201(3))

7. Within every three years of the most current stack test, and every three years thereafter, the permittee shall verify emission rates from EU16-NHTCHARHTR-S1 and EU16-NHTSTRIPREBOIL-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.³ (R 336.2001, R 336.2003, R 336.2004)

NO_x (R 336.1201(3))

8. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU11-FCCUCHARHTR-S1, EU14-CCRPLCHARHTR-S1, and EU14-CCRPLINTHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. (R 336.2001, R 336.2003, R 336.2004)

NO_x This requirement does not apply for an emission unit listed in this condition if a NO_x CEMS is installed, calibrated, maintained and operated in a satisfactory manner on that emission unit. (R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))

PM₁₀ (R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))

PM (R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))

Sulfuric acid mist³ (R 336.1201(3))

9. Within every three years of the most current stack test, and every three years thereafter, the permittee shall verify emission rates from EU11-FCCUCHARHTR-S1, EU14-CCRPLCHARHTR-S1, and EU14-CCRPLINTHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.³ (R 336.2001, R 336.2003, R 336.2004)

PM (R 336.1201(3))

VOC (R 336.1201(3))

10. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU04-VACHTR-S1, EU05-CRUDEHTR-S1, and EU08-GOHTCHARHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions. (R 336.2001, R 336.2003, R 336.2004)

PM₁₀ (R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))

PM (R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))

Sulfuric acid mist³ (R 336.1201(3))

11. Once during the five year term of this permit and annually thereafter, the permittee shall verify emission rates from EU04-VACHTR-S1 and EU05-CRUDEHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation

of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.³ **(R 336.2001, R 336.2003, R 336.2004)**

PM **(R 336.1201(3))**

VOC **(R 336.1201(3))**

12. Once during the five year term of this permit and every five years thereafter for VOC, and every three years thereafter for PM, the permittee shall verify emission rates from EU08-GOHTCHARHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.³ **(R 336.2001, R 336.2003, R 336.2004)**

PM **(R 336.1201(3))**

VOC **(R 336.1201(3))**

13. For tests required by SC V.1 through SC V.12, the following applies for valid, regularly scheduled tests, conducted during normal operations:³ **(R 336.1201(3))**

a) If a test indicates non-compliance with a permitted emission rate, and the test is required to be conducted on either a three or five year cycle, the frequency of such tests shall be annual for two consecutive years. Following two consecutive years of compliance, the frequency of testing shall return to the original three or five year cycle.

14. For any emission unit required to conduct an emission test in SC V.1 through V.12 for a specific pollutant every three years and every five years, the requirement to conduct an emission test every five years for that pollutant does not apply; emission testing for that pollutant is required every three years. **(R 336.1201(3))**

15. Within 180 days after commencement of trial operation of EU08-GOHTCHARHTR2-S1 and every five years thereafter, the permittee shall verify emission rates from EU08-GOHTCHARHTR2-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM10 and PM2.5 emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

PM10 **(R 336.1205, 40 CFR 52.21 (c) and (d))**

PM2.5 **(R 336.1205, 40 CFR 52.21 (c) and (d))**

VOC³ **(R 336.1201(3))**

Sulfuric acid mist³ **(R 336.1201(3))**

16. Within 180 days after commencement of trial operation of EU16-NHT2CHARHTR-S1, and every five years thereafter, the permittee shall verify emission rates from EU16-NHT2CHARHTR-S1, of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM10 and PM2.5 emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**

PM10 **(R 336.1205, 40 CFR 52.21 (c) and (d))**

PM2.5 **(R 336.1205, 40 CFR 52.21 (c) and (d))**

PM **(R 336.1205, 40 CFR 52.21(c) & (d))**

VOC³ **(R 336.1201(3))**

CO **(R 336.1205, 40 CFR 52.21(c) & (d))**

Sulfuric acid mist³ **(R 336.1201(3))**

17. Within 180 days after commencement of trial operation of EU16-NHT2STRIPREBOIL-S1 and every five years thereafter, the permittee shall verify emission rates from EU16-NHT2STRIPREBOIL-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM10 and PM2.5 emissions, testing shall include both the filterable and condensable fractions. **(R 336.2001, R 336.2003, R 336.2004)**
- PM10 **(R 336.1205, 40 CFR 52.21 (c) and (d))**
 - PM2.5 **(R 336.1205, 40 CFR 52.21 (c) and (d))**
 - PM **(R 336.1205, 40 CFR 52.21(c) & (d))**
 - VOC³ **(R 336.1201(3))**
 - CO **(R 336.1205, 40 CFR 52.21(c) & (d))**
 - Sulfuric acid mist³ **(R 336.1201(3))**

See Appendix 5-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and keep records of the concentration of hydrogen sulfide (H₂S) in the refinery fuel gas burned in each heater in accordance with the Federal Standards of Performance as specified in 40 CFR Part 60, Subpart J and Ja, in a manner and with instrumentation acceptable to the Air Quality Division. **(R 336.1205, R 336.1226(d), R 336.2802, 40 CFR 60.105(a)(4), 40 CFR 60.107a(a)(2))**
2. The permittee shall monitor and keep records of the concentration of total reduced sulfur (TRS) in the refinery fuel gas burned in each heater/boiler, in a manner and with instrumentation acceptable to the Air Quality Division. The TRS monitor may be used as an alternative to the H₂S monitoring required by SC VI.1.³ **(R 336.1201(3))**
3. Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S or TRS in the fuel gas being burned. **(40 CFR 60.105(a)(4)(ii))**
4. The permittee shall keep records of emissions and operating information to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A, J, and where applicable Ja. **(40 CFR Part 60 Subparts A and J/Ja)**
5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the NO_x and oxygen emissions from EU08-GOHTCHARHTR-S1. The permittee shall install and operate the Continuous Emission Monitoring System (CEMS) to meet the timelines, requirements and reporting detailed in Appendix 3-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c and shall use the CEMS data for determining compliance with the appropriate emission limits in SC I.7 and SC I.8. **(R 336.1205(3))**
6. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the NO_x and oxygen emissions from EU14-CCRPLCHARHTR-S1 and EU14-CCRPLINTHTR-S1. The permittee shall install and operate the CEMS to meet the timelines, requirements and reporting detailed in Appendix 3-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c and shall use the CEMS data for determining compliance with the appropriate emission limits in SC I.7 and I.8.³ **(R 336.1201(3))**
7. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the NO_x and oxygen emissions from EU04-VAC2HTR-S1, EU09-ALKYDIBREBTR-S1, EU77-DHTHTR-S1, EU70-COKERHTR-S1, EU04-VACHTR-S1, EU05-CRUDEHTR-S1, and EU08-GOHTCHARHTR2-S1. The permittee shall install and operate the CEMS to meet the timelines, requirements and reporting detailed in Appendix 3-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c. **(40 CFR Part 60, Subpart Ja, Consent Order No. 01-40119)**

8. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the CO and oxygen emissions from EU70-COKERHTR-S1, EU08-GOHTCHARHTR-S1, EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU11-FCCUCHARHTR-S1, EU04-VAC2HTR-S1, EU77-DHTHTR-S1, and EU08-GOHTCHARHTR2-S1, and, in their shared stack, EU04-VACHTR-S1 and EU05-CRUDEHTR-S1. The permittee shall install and operate the CEMS in accordance with the requirements of 40 CFR 60.11, 40 CFR 60.13, and 40 CFR Part 60, Appendix A, the applicable performance specification test of 40 CFR Part 60, Appendices B and F. With respect to 40 CFR Part 60, Appendix F, in lieu of the requirements of 40 CFR Part 60 Appendix F (5.1.1, 5.1.3, and 5.1.4), the permittee shall conduct either a Relative Accuracy Audit (RAA) or a Relative Accuracy Test Audit (RATA) once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit is conducted each calendar quarter. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report. **(R 336.1205, R 336.2802, 40 CFR 52.21(c) & (d))**
9. The permittee shall monitor, in a satisfactory manner, the heat input for each heater in FG-HEATERS-S1, in MMBTU/hr, on a daily, monthly, and rolling 12 month time period basis. **(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
10. The permittee shall keep daily records of the type and amount of fuel used in each heater/boiler in FGHEATERS-S1. **(R 336.1901, 45 FR 29270)**
11. The permittee shall keep, in a satisfactory manner, records of NO_x emissions on a monthly and a 12 month rolling basis for EU04-VACHTR-S1 and EU05-CRUDEHTR-S1 combined. **(R 336.2802, 40 CFR 52.21(c) & (d), Consent Order No. 01-40119)**
12. The permittee shall keep, in a satisfactory manner, daily, monthly, and rolling 12 month time period records of the heat input for each heater in FG-HEATERS-S1, in MMBTU/hr. **(R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21(c) & (d))**
13. The permittee shall keep, in a satisfactory manner, daily, monthly, and rolling 12-month time period records of the combined heat input for EU08-GOHTCHARHTR-S1 and EU08-GOHTCHARHTR2-S1, in MMBTU/hr.³ **(R 336.1201(3))**
14. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record on a continuous basis the NO_x and oxygen emissions from EU16-NHT2CHARHTR-S1 and EU16-NHT2STRIPREBOIL-S1. The permittee shall install and operate the CEMS to meet the timelines, requirements and reporting detailed in Appendix 3-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c. **(R 336.1205, 40 CFR 52.21(c) & (d), 40 CFR Part 60, Subpart Ja)**

See Appendix 3-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VII. REPORTING

1. The permittee shall submit the data on the concentration of hydrogen sulfide or total reduced sulfur in the refinery fuel gas burned in FGHEATERS-S1 to the Air Quality Division (AQD) District Supervisor in acceptable format within 30 days following the end of the quarter in which the data were collected. **(40 CFR 60.7)**
2. The permittee shall submit the data on the concentration of hydrogen sulfide in the refinery fuel gas burned in EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected. **(40 CFR 60.7)**
3. The permittee shall submit the data on the concentration of total reduced sulfur in the refinery fuel gas burned in EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected.³ **(R 336.1201(3))**

4. The permittee shall submit the data on the concentration of NOx in the exhaust gas from EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected. **(40 CFR 60.7)**
5. The permittee shall submit the data on the concentration of CO in the exhaust gas from EU08-GOHTCHARHTR2-S1 to the Air Quality Division (AQD) District Supervisor in an acceptable format within 30 days following the end of the quarter in which the data were collected.³ **(R 336.1201(3))**
6. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than completion of installation of the EU16-NHT2CHARHTR-S1 and EU16-NHT2STRIPREBOIL-S1. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/ Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV04-H1-05-H1 (EU04-VACHTR-S1 and EU05-CRUDEHTR-S1)	118	199	R 336.1225 50 CFR 52.21 (c) & (d)
2. SV08-H1 (EU08-GOHTCHARHTR-S1)	63	160	R 336.1225 50 CFR 52.21 (c) & (d)
3. SV09-H7 (EU09-ALKYDIBREBHTR-S1)	76	150	R 336.1225 50 CFR 52.21 (c) & (d)
4. SV11-H1 (EU11-FCCUCHARHTR-S1)	90	150	R 336.1225 50 CFR 52.21 (c) & (d)
5. SV14-H4A (EU14-CCRPLINTHTR-S1)	66	195	R 336.1225 50 CFR 52.21 (c) & (d)
6. SV14-H6 (EU14-CCRPLCHARHTR-S1)	84	195	R 336.1225 50 CFR 52.21 (c) & (d)
7. SV16-H3 (EU16-NHTSTRIPREBOIL-S1)	45	96.8	R 336.1225 50 CFR 52.21 (c) & (d)
8. SV16-H3 (EU16-NHT2STRIPREBOIL-S1)	45	96.8	R 336.1225 50 CFR 52.21 (c) & (d)
9. SV16-H4 (EU16-NHTCHARHTR-S1)	56	91.7	R 336.1225 50 CFR 52.21 (c) & (d)
10. SV16-H4 (EU16-NHT2CHARHTR-S1)	56	91.7	R 336.1225 50 CFR 52.21 (c) & (d)
11. SV19-H2 (EU19-KHTCHARHTR-S1)	56	91.7	R 336.1225 50 CFR 52.21 (c) & (d)
12. SV22-1-H1 (EU22-FUELOILHTR-S1) (unobstructed vertical discharge not required)	NA	29.8	R 336.1225 50 CFR 52.21 (c) & (d)
13. SV04-H2 (EU04-VAC2HTR-S1)	96	125	R 336.1225 50 CFR 52.21 (c) & (d)
14. SV70-H1 (EU70-COKERHTR-S1)	112	150	R 336.1225 50 CFR 52.21 (c) & (d)
15. SV77-H1 (EU77-DHTHTR-S1)	60	125	R 336.1225 50 CFR 52.21 (c) & (d)
16. SV08-H2 (EU08-GOHTCHARHTR2-S1)	58.5	170	R 336.1225 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provision of the federal Standards of Performance of New Stationary Sources as specified in 40 CFR Part 60, Subparts A, J, and where applicable Ja, as they apply to FGHEATERS-S1. **(40 CFR Part 60, Subparts A and J/Ja)**
2. The permittee shall not operate any emission unit in FG-HEATERS-S1 unless an approved Start-up, Shutdown and Malfunction Plan (SSMP), or an alternate plan approved by the AQD District Supervisor is implemented, maintained and followed. The plan shall describe how emissions will be minimized during all startups, shutdowns, and malfunctions. The plan shall incorporate procedures recommended by the equipment manufacturer as well as standard industry practices. **(R 336.1205, R 336.1911, R 336.1912, R 336.2802, 40 CFR 52.21(c) & (d))**
3. Within 180 days of startup of EU16-NHT2STRIPREBOIL-S1 and EU16-NHT2CHARHTR-S1, the permittee shall permanently cease operation of EU16-NHTSTRIPREBOIL-S1 and EU16-NHTCHARHTR-S1. During the interim 180-day period when the new and existing NHT heaters may operate, the combined actual heat input of EU16-NHT2STRIPREBOIL-S1 and EU16-NHTSTRIPREBOIL-S1 shall not exceed 46 MMBtu/hr on a daily average, and the combined actual heat input of EU16-NHT2CHARHTR-S1 and EU16- NHTCHARHTR-S1 shall not exceed 64 MMBtu/hr on a daily average. **(R 336.1205(1), R 336.1225, 40 CFR 52.21 (c) & (d))**
4. The permittee shall comply with all provisions of the federal National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters as specified in 40 CFR Part 63 Subparts A and DDDDD, as they apply to EU08-GOHTCHARHTR2-S1, EU16-NHT2STRIPREBOIL-S,1 and EU16-NHT2CHARHTR-S1. **(40 CFR 63 Subparts A & DDDDD)**
5. On and after December 31, 2025, the permittee shall permanently cease operation of EU16-NHTSTRIPREBOIL-S1 and EU16-NHTCHARHTR-S1.³ **(R335.1201(3))**

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³This condition is included at the request of the permittee.

FGGROUP2-S1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

40 CFR 63 Subpart CC Group 2 Storage Tanks. Permit: 63-08E, TBD

Emission Units: EUTANK11-S1, EUTANK16-S1, EUTANK17-S1, EUTANK18-S1, EUTANK24-S1, EUTANK27-S1, EUTANK28-S1, EUTANK30-S1, EUTANK31-S1, EUTANK50-S1, EUTANK52-S1, EUTANK54-S1, EUTANK56-S1, EUTANK59-S1, EUTANK60-S1, EUTANK62-S1, EUTANK63-S1, EUTANK64-S1, EUTANK70-S1, EUTANK71-S1, EUTANK100-S1, EUTANK102-S1, EUTANK103-S1, EUTANK104-S1, EUTANK105-S1, EUTANK106-S1, EUTANK107-S1, EUTANK120-S1, EUTANK125-S1, EUTANK126-S1, EUTANK127-S1, EUTANK128-S1, EUTANK314-S1, EUTANK315-S1, EUTANK316-S1, EUTANK317-S1, EUTANK318-S1, EUTANK319-S1, EUTANK320-S1, EUTANK324-S1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee for each Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. **(40 CFR 63.123(a), 40 CFR 63.655(i))**
2. For each material stored in FGGROUP2-S1, the permittee shall keep monthly throughput records for FGGROUP2-S1. **(R 336.1702(a), 40 CFR 52.21(b)(3))**
3. The permittee shall keep records as described in paragraph 40 CFR 63.655(i). **(40 CFR 63.655(e))**
4. The permittee shall keep the records specified in 40 CFR 63.123 except as specified in paragraphs 40 CFR 63.655(i)(1)(i thru iv). **(40 CFR 63.655(i))**

5. The permittee shall keep a record that each inspection required by 40 CFR 63.120(a) was performed. **(40 CFR 63.123(c), 40 CFR 63.655(i))**
6. The permittee who elects to utilize an extension in emptying a storage vessel in accordance with 40 CFR 63.120(a)(4), 40 CFR 63.120(b)(7)(ii), or 40 CFR 63.120(b)(8) shall keep in a readily accessible location, the documentation specified in 40 CFR 63.120(a)(4), 40 CFR 63.120(b)(7)(ii), or 40 CFR 63.120(b)(8), as applicable. **(40 CFR 63.123(g), 40 CFR 63.655(i))**
1. The permittee who uses the by-pass provisions of 40 CFR 63.119(f)(3) shall keep in a readily accessible location the records specified in paragraphs 40 CFR 63.123(h)(1 thru 3) of this section. **(40 CFR 63.123(h))**
 - a) The reason it was necessary to by-pass the process equipment or fuel gas system; **(40 CFR 63.123(h)(1))**
 - b) The duration of the period when the process equipment or fuel gas system was by passed; **(40 CFR 63.123(h)(2))**
 - c) Documentation or certification of compliance with the applicable provisions of 40 CFR 63.119(f)(3)(i thru iii). **(40 CFR 63.123(h)(3))**
2. The permittee shall retain records of any data, assumptions, and procedures used to make the determination that a storage vessel is determined to be Group 2 because the weight percent total organic HAP of the stored liquid is less than or equal to 4% for existing sources or 2% for new sources. **(40 CFR 63.655(i)(1)(iv))**
3. The permittee, if required to report the results of performance tests under paragraphs 40 CFR 63.655(f) and 40 CFR 63.655(g)(7) shall retain a record of all reported results as well as a complete test report, as described in paragraph 40 CFR 63.655(f)(2)(ii) for each emission point tested. **(40 CFR 63.655(i)(2))**
4. The permittee shall retain all other information required to be reported under paragraphs 40 CFR 63.655(a thru h) for 5 years. **(40 CFR 63.655(i)(4))**
5. The permittee shall keep records describing the results of each seal gap measurement made in accordance with 40 CFR 63.120(b). The record shall include the date of the measurement, the raw data obtained in the measurement and the calculations described in 40 CFR 63.120(b)(3 and 4). **(40 CFR 63.123(d), 40 CFR 63.655(i))**
6. The permittee shall record the temperature of the stored product on a daily basis (alternative to true vapor pressure). **(40 CFR 60.113)**

See Appendices 4-S1 and 7-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VII. REPORTING

NA

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and Subpart CC, as they apply to FGGROUP2-S1. **(40 CFR Part 63, Subparts A and CC)**
2. The permittee shall identify each storage tank subject to 40 CFR Part 63, Subpart CC requirements. **(40 CFR 63.655(f)(1)(i)(A), 40 CFR 63.640)**
3. The permittee shall comply with all applicable requirements of 40 CFR 63.640(l) for Group 2 tanks that are converted to Group 1 tanks. **(40 CFR 63.640(l))**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FGIFRTANKS-S1
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Internal floating roof tanks (IFR) that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks also may be subject to Michigan Air Pollution Control Rule 604 (R336.1604). This represents a consolidated requirement for internal floating roof tanks. Permit: 63-08E, TBD

Emission Units: EUTANK19-S1, EUTANK23-S1, EUTANK40-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK51-S1, EUTANK52-S1, EUTANK53-S1, EUTANK55-S1, EUTANK57-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, , EUTANK101-S1, EUTANK104-S1, EUTANK116-S1, , EUTANK120-S1, EUETHANK-S1, EUTANK507-S1, EUTANK508-S1, EUTANK216-S1, EUTANK29T79-S1, EUTANK22T118-S1, EUTANK110-S1

POLLUTION CONTROL EQUIPMENT

Internal Floating Roof

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	Maximum True Vapor Pressure of 11.0 psia ²	Based upon Monthly average	FGIFRTANKS-S1	SC VI.1, SC VI.2	R 336.1225, R 336.1702

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

Requirements SC III.1 thru SC III.3 apply to EUTANK19-S1, EUTANK23-S1, EUTANK40-S1, EUTANK49-S1, EUTANK51-S1, EUTANK53-S1, EUTANK57-S1, EUTANK29T79-S1, EUTANK101-S1, EUTANK104-S1, EUTANK116-S1, EUTANK22T118-S1, EUTANK120-S1, EUETHANK-S1, EUTANK508-S1, and EUTANK216-S1. **(R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.112(b)(a)(1), 40 CFR 60.113(b)(a), 40 CFR Part 60, Subparts A and Kb)**

Requirements SC III.1 thru SC III.3 apply to EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK55-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, and EUTANK507-S1. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)**

Requirements SC III.1 thru SC III.3 apply to EUTANK110-S1 on and after installation of a geodesic dome on the tank. **(R 336.1205, R 336.1225, R 336.1702(b), 40 CFR 60.112(b)(a)(1), 40 CFR 60.113(b)(a), 40 CFR Part 60, Subparts A and Kb)**

- Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.
- Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

3. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall comply with the applicable requirements of 40 CFR 60.113b (Testing and Procedures), except as provided for in Refinery MACT 1 for EUTANK19-S1, EUTANK23-S1, EUTANK40-S1, EUTANK49-S1, EUTANK51-S1, EUTANK53-S1, EUTANK57-S1, EUTANK29T79-S1, EUTANK101-S1, EUTANK104-S1, EUTANK116-S1, EUTANK22T118-S1, EUTANK120-S1, EUETHANK-S1, EUTANK508-S1, and EUTANK216-S1. **(R 336.1205, R 336.1225, R 336.1702(b)), R 336.2802, 40 CFR 52.21, 40 CFR 60.113b, 40 CFR Part 63, Subpart CC)**
2. The permittee shall comply with the requirements of 40 CFR 60.113b (Testing and Procedures) that apply to tanks with internal floating roofs, except as provided for in Refinery MACT 1, for EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK55-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, and EUTANK507-S1. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)**
3. The permittee shall comply with the applicable requirements of 40 CFR 60.113b (Testing and Procedures), except as provided for in Refinery MACT 1 for EUTANK110-S1 on and after installation of a geodesic dome on the tank. **(R 336.1205, R 336.1225, R 336.1702(b)), 40 CFR 60.113b, 40 CFR Part 63, Subpart CC)**

See Appendix 5-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

The following requirements apply to all tanks in FGIFRTANKS-S1, including EUTANK110-S1 on and after installation of a geodesic dome on EUTANK110-S1.

1. The permittee shall keep records as described in paragraph 40 CFR 63.655(i). **(40 CFR 63.655(e))**
2. The permittee shall keep the records specified in 40 CFR 63.123 except as specified in paragraphs 40 CFR 63.655(i)(1)(i thru iv).
3. The permittee for each Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. **(40 CFR 63.123(a), 40 CFR 63.655(i))**
4. The permittee shall keep a record that each inspection required by 40 CFR 63.120(a) was performed. **(40 CFR 63.123(c), 40 CFR 63.655(i))**
5. The permittee who elects to utilize an extension in emptying a storage vessel in accordance with 40 CFR 63.120(a)(4), 40 CFR 63.120(b)(7)(ii), or 40 CFR 63.120(b)(8) shall keep in a readily accessible location, the documentation specified in 40 CFR 63.120(a)(4), 40 CFR 63.120(b)(7)(ii), or 40 CFR 63.120(b)(8), as applicable. **(40 CFR 63.123(g), 40 CFR 63.655(i))**
6. The permittee who uses the by-pass provisions of 40 CFR 63.119(f)(3) shall keep in a readily accessible location the records specified in paragraphs 40 CFR 63.123(h)(1 thru 3) of this section. **(40 CFR 63.123(h))**

- a) The reason it was necessary to by-pass the process equipment or fuel gas system. **(40 CFR 63.123(h)(1))**
 - b) The duration of the period when the process equipment or fuel gas system was bypassed; **(40 CFR 63.123(h)(2))**
 - c) Documentation or certification of compliance with the applicable provisions of 40 CFR 63.119(f)(3)(i thru iii). **(40 CFR 63.123(h)(3))**
7. The permittee shall retain records of any data, assumptions, and procedures used to make the determination that a storage vessel is determined to be Group 2 because the weight percent total organic HAP of the stored liquid is less than or equal to 4% for existing sources or 2% for new sources. **(40 CFR 63.655(i)(1)(iv))**
8. The permittee, if required to report the results of performance tests under paragraphs 40 CFR 63.655(f) and 40 CFR 63.655(g)(7) shall retain a record of all reported results as well as a complete test report, as described in paragraph 40 CFR 63.655(f)(2)(ii) for each emission point tested. **(40 CFR 63.655(i)(2))**
9. The permittee shall retain all other information required to be reported under paragraphs 40 CFR 63.655(a thru h) for 5 years. **(40 CFR 63.655(i)(4))**
10. The permittee shall keep records describing the results of each seal gap measurement made in accordance with 40 CFR 63.120(b). The record shall include the date of the measurement, the raw data obtained in the measurement and the calculations described in 40 CFR 63.120(b)(3 and 4). **(40 CFR 63.123(d), 40 CFR 63.655(i))**
11. The permittee of each storage vessel as specified in 40 CFR 60.112b(a) shall keep records as required by paragraphs 40 CFR 60.115b(a, b or c) depending upon the control equipment installed to meet the requirements of 40 CFR 60.112b. **(40 CFR 60.115b)**
12. The permittee shall keep copies of all reports and records required by 40 CFR 60.115b, except for the record required by 40 CFR 60.115b(c)(1), for at least 5 years. The record required by 40 CFR 60.115b(c)(1) will be kept for the life of the control equipment. **(R 336.1201(3), 40 CFR 60.115b)**
13. After installing control equipment in accordance with 40 CFR 60.112b(a)(1) (fixed roof and internal floating roof), the permittee shall meet the following requirements: (40 CFR 60.115b(a))
- a) Keep a record of each inspection performed as required by 40 CFR 60.113b(a)(1 thru 4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). **(40 CFR 60.115b(a)(2))**
14. The permittee for each storage vessel as specified in 40 CFR 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. **(40 CFR 60.116b(b))**
15. Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below: **(40 CFR 60.116b(e))**
- a) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. **(40 CFR 60.116b(e)(1))**
 - b) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: **(40 CFR 60.116b(e)(1)(2))**
 - i. Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference-see 40 CFR 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). **(40 CFR 60.116b(e)(2)(i))**

- ii. The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.
(40 CFR 60.116b(e)(2)(ii))
 - c) For other liquids, the vapor pressure: **(40 CFR 60.116b(e)(3))**
 - i. May be obtained from standard reference texts, or
 - ii. Determined by ASTM Method D2879-83 (incorporated by reference see 40 CFR 60.17); or
 - iii. Measured by an appropriate method approved by the Administrator; or
 - iv. Calculated by an appropriate method approved by the Administrator. **(40 CFR 60.116b(e)(3)(i-iv))**
16. The permittee for each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements. **(40 CFR 60.116b(f))**
 - a) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph 40 CFR 60.116b(e). **(40 CFR 60.116b(f)(1))**
 - b) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in 40 CFR 60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods: **(40 CFR 60.116b(f)(2)(i-iii))**
 - i. ASTM Method D2879-83 (incorporated by reference see 40 CFR 60.17); or
 - ii. ASTM Method D323-82 (incorporated by reference see 40 CFR 60.17); or
 - iii. As measured by an appropriate method as approved by the Administrator.
17. The permittee shall comply with the applicable requirements of 40 CFR 60.116b (Monitoring of Operations) for EUTANK19-S1, EUTANK23-S1, EUTANK40-S1, EUTANK49-S1, EUTANK51-S1, EUTANK53-S1, EUTANK57-S1, EUTANK29T79-S1, EUTANK101-S1, EUTANK104-S1, EUTANK116-S1, EUTANK22T118-S1, EUTANK120-S1, EUETHANK-S1, EUTANK508-S1, and EUTANK216-S1. **(R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.116b)**
18. The permittee shall comply with the applicable requirements of 40 CFR 60.116b (Monitoring of Operations) for EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK55-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, and EUTANK507-S1. For purposes of this requirement, the term “applicable requirements of 40 CFR 60.116b (Monitoring of Operations)” refers to those requirements that would apply to these tanks if the tanks were actually subject to 40 CFR Part 60, Subpart Kb. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)**
19. The permittee shall comply with the applicable requirements of 40 CFR 60.116b (Monitoring of Operations) for EUTANK110-S1 on and after installation of a geodesic dome on the tank. **(R 336.1205, R 336.1225, R 336.1702(b)), 40 CFR 60.113b, 40 CFR Part 63, Subpart CC)**

See Appendices 4-S1 and 7-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VII. REPORTING

1. Except as provided in paragraph 40 CFR 60.116b(g) the permittee for each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. **(40 CFR 60.116b(d))**

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

Requirements SC IX.1 thru SC IX.13 apply to EUTANK19-S1, EUTANK23-S1, EUTANK40-S1, EUTANK49-S1, EUTANK51-S1, EUTANK53-S1, EUTANK57-S1, EUTANK29T79-S1, EUTANK101-S1, EUTANK104-S1, EUTANK116-S1, EUTANK22T118-S1, EUTANK120-S1, EUETHANK-S1, EUTANK508-S1, and EUTANK216-S1.² **(R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.112b)**

Requirements SC IX.1 thru SC IX.13 apply to EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK55-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1 and EUTANK507-S1. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)**

Requirements SC IX.1 thru SC IX.13 apply to EUTANK110-S1 on and after installation of a geodesic dome on the tank. **(R 336.1205, R 336.1225, R 336.1702(b), 40 CFR 60.112b)**

1. Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:
 - a) A foam or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.
 - b) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.
 - c) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.
2. Each opening in a non-contact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
3. Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.
4. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90% of the opening.
5. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
6. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.
7. Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.
8. For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill.
9. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, two 30 day extensions may be requested from the Administrator in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company

will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

10. For vessels equipped with a double-seal system, the permittee must visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed, or at least every 5 years; or visually inspect the IFR and the primary and secondary seal through the manhole and roof hatches at least once every 12 months after initial fill.
11. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 % open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs 40 CFR 60.113b(a)(2) and 40 CFR 60.113b(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in paragraph 40 CFR 60.113b(a)(3)(i).
12. Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs 40 CFR 60.113b(a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present.
13. If the inspection required by paragraph 40 CFR 60.113b(a)(4) is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

Requirements SC IX.14 thru SC IX.16 apply to all tanks in FGIFRTANKS-S1, including EUTANK110-S1 on and after installation of a geodesic dome on the tank.

14. The permittee shall comply with all applicable provisions of Rule 604, as they apply to FGIFRTANKS-S1. **(R 336.1604)**
15. The permittee may utilize the provisions of 40 CFR 63.640(n) for storage vessels included in FGIFRTANKS-S1 (Overlap of subpart CC with other regulations for storage vessels). **(40 CFR 63.640(n))**
16. The permittee shall comply with all provision of the federal Standards of Performance of New Stationary Sources as specified in 40 CFR Part 60, Subparts A and Kb, as they apply to FGIFRTANKS-S1. **(40 CFR Part 60, Subparts A and Kb)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGEFRTANKS-S1 FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group represents a consolidated requirement for external floating roof (EFR) tanks that are subject to 40 CFR Part 63, Subpart CC as Group 1 vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks may also be subject to Michigan Air Pollution Control Rule 623 (R 336.1623) and/or NSPS Subpart QQQ. This consolidated requirement basically adopts NSPS Kb for these EFR tanks. Permit: 63-08E, TBD

Emission Unit: EUTANK32-S1, EUTANK33-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK127-S1, EUTANK128-S1, EUTANK129-S1, EUTANK130-S1, EUTANK601-S1, EU29TANK40-S1, EU29TANK41-S1

POLLUTION CONTROL EQUIPMENT

External Floating Roof

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

Requirements SC III.1 thru SC III.3 apply to EUTANK-129-S1, EUTANK601-S1, EU29TANK40-S1, and EU29TANK41-S1. (R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.112b(a)(2))

Requirements SC III.1 thru SC III.3 apply to EUTANK32-S1, EUTANK33-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1 (prior to installation of a geodesic dome on the tank), EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK127-S1, EUTANK128-S1, and EUTANK130-S1. (R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)

1. Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.
2. The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in 40 CFR 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall. The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113(b)(4) [45-day repair requirement + two 30-day extensions].
3. Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasket cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90% of the area of the opening.

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall comply with the applicable requirements of 40 CFR 60.113b (Testing and Procedures), except as provided for in Refinery MACT 1, for EUTANK129-S1, EUTANK601-S1, EU29TANK40-S1, and EU29TANK41-S1. **(R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.113b, 40 CFR Part 63, Subpart CC)**
2. The permittee shall comply with the applicable requirements of 40 CFR 60, Subpart Kb, section 60.113b (Testing and Procedures), except as provided for in Refinery MACT 1, for EUTANK32-S1, EUTANK33-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1 (prior to installation of a geodesic dome on the tank), EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK127-S1, EUTANK128-S1, and EUTANK130-S1. For purposes of this requirement, the term “applicable requirements of 40 CFR 60, Subpart Kb, section 60.113b (Testing and Procedures), except as provided for in Refinery MACT 1” refers to those requirements that would apply to these tanks if the tanks were actually subject to 40 CFR Part 60, Subpart Kb. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)**

See Appendix 5-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

The following requirements do not apply to EUTANK110-S1 on and after a geodesic dome is installed on the tank.

1. The permittee shall keep records as described in paragraph 40 CFR 63.655(i). **(40 CFR 63.655(e))**
2. The permittee shall keep the records specified in 40 CFR 63.123 except as specified in paragraphs 40 CFR 63.655(i)(1)(i-iv). **(40 CFR 63.655(i))**
3. The permittee for each Group 1 or Group 2 storage vessel shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation. **(40 CFR 63.123(a), 40 CFR 63.655(i))**
4. The permittee shall keep a record that each inspection required by 40 CFR 63.120(a) was performed. **(40 CFR 63.123(c), 40 CFR 63.655(i))**
5. The permittee who elects to utilize an extension in emptying a storage vessel in accordance with 40 CFR 63.120 (a)(4), (b)(7)(ii), or (b)(8) shall keep in a readily accessible location, the documentation specified in 40 CFR 63.120 (a)(4), (b)(7)(ii), or (b)(8), as applicable. **(40 CFR 63.123(g), 40 CFR 63.655(i))**
6. The permittee who uses the by-pass provisions of 40 CFR 63.119(f)(3) shall keep in a readily accessible location the records specified in paragraphs 40 CFR 63.123(h)(1) through (h)(3) of this section. **(40 CFR 63.123(h))**
 - a) The duration of the period when the process equipment or fuel gas system was bypassed; **(40 CFR 63.123(h)(2))**
 - b) The duration of the period when the process equipment or fuel gas system was bypassed; **(40 CFR 63.123(h)(2))**
 - c) Documentation or certification of compliance with the applicable provisions of 40 CFR 63.119(f)(3)(i-iii). **(40 CFR 63.123(h)(3))**
7. The permittee shall retain records of any data, assumptions, and procedures used to make the determination that a storage vessel is determined to be Group 2 because the weight percent total organic HAP of the stored liquid is less than or equal to 4% for existing sources or 2% for new sources. **(40 CFR 63.655(i)(1)(iv))**

8. The permittee, if required to report the results of performance tests under paragraphs 40 CFR 63.655(f) and 40 CFR 63.655(g)(7) shall retain a record of all reported results as well as a complete test report, as described in paragraph 40 CFR 63.655(f)(2)(ii) for each emission point tested. **(40 CFR 63.655(i)(2))**
9. The permittee shall retain all other information required to be reported under paragraphs 40 CFR 63.655(a-h) for 5 years. **(40 CFR 63.655(i)(4))**
10. The permittee shall keep records describing the results of each seal gap measurement made in accordance with 40 CFR 63.120(b). The record shall include the date of the measurement, the raw data obtained in the measurement and the calculations described in 40 CFR 63.120(b)(3 and 4). **(40 CFR 63.123(d), 40 CFR 63.655(i))**
11. The permittee of each storage vessel as specified in 40 CFR 60.112b(a) shall keep records as required by paragraphs 40 CFR 60.115b(a, b, or c) .depending upon the control equipment installed to meet the requirements of 40 CFR 60.112b. **(40 CFR 60.115b)**
12. The permittee shall keep copies of all reports and records required by 40 CFR 60.115b, except for the record required by 40 CFR 60.115b(c)(1), for at least 5 years. The record required by 40 CFR 60.115b(c)(1) will be kept for the life of the control equipment. **(R336.1201(3), 40 CFR 60.115b)**
13. After installing control equipment in accordance with 40 CFR 60.112b(a)(1) (fixed roof and internal floating roof), the permittee shall meet the following requirements: (40 CFR 60.115b(a))
 - a) Keep a record of each inspection performed as required by 40 CFR 60.113b(a)(1-4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). **(40 CFR 60.115b(a)(2))**
14. The permittee for each storage vessel as specified in 40 CFR 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. **(40 CFR 60.116b(b))**
15. Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below: **(40 CFR 60.116b(e))**
 - a) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. **(40 CFR 60.116b(e)(1))**
 - b) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: **(40 CFR 60.116b(e)(1)(2))**
 - i. Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference--see 40 CFR 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). **(40 CFR 60.116b(e)(2)(i))**
 - ii. The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. **(40 CFR 60.116b(e)(2)(ii))**
 - c) For other liquids, the vapor pressure: **(40 CFR 60.116b(e)(3))**
 - i. May be obtained from standard reference texts, or
 - ii. Determined by ASTM Method D2879-83 (incorporated by reference see 40 CFR 60.17); or
 - iii. Measured by an appropriate method approved by the Administrator; or
 - iv. Calculated by an appropriate method approved by the Administrator. **(40 CFR 60.116b(e)(3)(i-iv))**

16. The permittee for each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements. **(40 CFR 60.116b(f))**
 - a) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph 40 CFR 60.116b(e). **(40 CFR 60.116b(f)(1))**
 - b) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in 40 CFR 60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:
 - i. ASTM Method D2879-83 (incorporated by reference--see 40 CFR 60.17); or
 - ii. ASTM Method D323-82 (incorporated by reference--see 40 CFR 60.17); or
 - iii. As measured by an appropriate method as approved by the Administrator. **(40 CFR 60.116b(f)(2)(i-iii))**
17. The permittee shall comply with the applicable requirements of 40 CFR 60, Subpart Kb, section 60.116b (Monitoring of Operations) for EUTANK129-S1, EUTANK601-S1, EU29TANK40-S1, and EU29TANK41-S1. **(R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.116b)**
18. The permittee shall comply with the requirements of 40 CFR 60.116b (Monitoring of Operations) that apply to tanks with external floating roofs, for EUTANK32-S1, EUTANK33-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1 (prior to installation of a geodesic dome on the tank), EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK127-S1, EUTANK128-S1, and EUTANK130-S1. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21)**

See Appendices 4-S1 and 7-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VII. REPORTING

1. Except as provided in paragraph 40 CFR 60.116b(g) the permittee for each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. **(40 CFR 60.116b(d))**

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

Requirements SC IX.1 thru SC IX.8 apply to EUTANK129-S1, EUTANK601-S1, EU29TANK40-S1, and EU29TANK41-S1. **(R 336.1205, R 336.1225, R 336.1702(b), R 336.2802, 40 CFR 52.21, 40 CFR 60.113b(b), 40 CFR Part 60, Subparts A and Kb)**

Requirements SC IX.1 thru SC IX.8 apply to EUTANK32-S1, EUTANK33-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1 (prior to installation of a geodesic dome on the tank), EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK127-S1, EUTANK128-S1, and EUTANK130-S1. **(R 336.1205, R 336.1225, R 336.1702(a), R 336.2802, 40 CFR 52.21, 40 CFR 60.113b(b))**

1. The permittee shall determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.
 - a) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

- b) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.
 - c) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs 40 CFR 60.113b(b)(1)(i and ii).
2. The permittee shall determine gap widths and areas in the primary and secondary seals individually by the following procedures:
 - a) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.
 - b) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of storage vessel and measure the circumferential distance of each such location.
 - c) The total surface area of each gap described in paragraph 40 CFR 60.113b(b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.
3. The permittee shall add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph 40 CFR 60.113b(b)(4).
4. The permittee shall make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the following requirements
 - a) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. (A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface. (B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
 - b) The secondary seal is to meet the following requirements: (A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph 40 CFR 60.113b(b)(2)(iii). (B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. (C) There are to be no holes, tears, or other openings in the secondary seal or seal fabric.
 - c) If a failure that is detected during inspections required in paragraph 40 CFR 60.113b(b)(1) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, two 30-day extensions may be requested from the Administrator in the inspection report required in 40 CFR 60.115(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
5. The permittee shall notify the Administrator 30 days in advance of any gap measurements required by paragraph 40 CFR 60.113b(b)(1) to afford the Administrator the opportunity to have an observer present.
6. The permittee shall visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.
7. If the external floating roof has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.
8. For all the inspections required by paragraph 40 CFR 60.113b(b)(6), the permittee shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph 40 CFR 60.113b(b)(6) is not planned and the permittee could not have known about the inspection 30 days in advance of refilling the tank, the permittee shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the

written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

Requirements SC IX.9 thru SC IX.12 apply to all tanks in FGEFRTANKS-S1, except for EUTANK110-S1 on and after a geodesic dome is installed on the tank. **(R 336.1623, 40 CFR 63.640(n))**

9. The permittee shall comply with all applicable provisions of Rule 623, as they apply to FGEFRTANKS-S1. **(R 336.1623)**
10. The permittee may utilize the provisions of 40 CFR 63.640(n) for storage vessels included in FG-EFRTANKS (Overlap of subpart CC with other regulations for storage vessels). **(40 CFR 63.640(n))**
11. The permittee shall comply with all provision of the federal Standards of Performance of New Stationary Sources as specified in 40 CFR Part 60, Subparts A and Kb, as they apply to FGEFRTANKS-S1. **(40 CFR Part 60, Subparts A and Kb)**
12. The permittee shall document its current storage tank inspection and maintenance protocol. The protocol shall include provisions to increase inspection frequency on the storage tanks during winter months and to winterize the storage tank roof drains seasonally. **(R 336.1201(3))**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGCRUDETANKS-S1 FLEXIBLE GROUP CONDITIONS

DESCRIPTION

External floating roof (EFR) tanks that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks may also be subject to Michigan Air Pollution Control Rule 623 (R 336.1623) and/or NSPS Subpart QQQ. This consolidated requirement basically adopts NSPS Kb for these EFR tanks. Permit: 63-08E, TBD

Emission Unit: EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK129-S1, EUTANK130-S1

POLLUTION CONTROL EQUIPMENT

External Floating Roof

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall maintain each storage tank in FGCRUDETANKS-S1 with the following equipment, or a deck and seal configuration that results in the same or lower VOC emissions from the tanks:
(40 CFR 52.21(a and b))
 - a) floating roof.
 - b) welded deck.
 - c) mechanical shoe primary seal.
 - d) rim-mounted secondary seal.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall perform inspections and monitor operating information for FGCRUDETANKS-S1 in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and Kb. **(40 CFR Part 60, Subparts A and Kb)**
2. The permittee shall keep records of inspections and operating information for FGCRUDETANKS-S1 in accordance with the federal Standards of Performance for New Stationary Sources as specified in

40 CFR Part 60, Subparts A and Kb. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR Part 60, Subparts A and Kb)**

3. The permittee shall keep annual VOC emission calculations and monthly throughput records for FGCRUDETANKS-S1. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, 40 CFR 52.21(a and b))**

VII. REPORTING

NA

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and Kb as they apply to FGCRUDETANKS-S1. **(40 CFR Part 60, Subparts A and Kb)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FGNAPHTHATANKS-S1
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

This flexible group represents a consolidated requirement for internal and external floating roof tanks that are subject to 40 CFR Part 63, Subpart CC as Group 1 Vessels or subject to 40 CFR Part 60, Subpart Kb. These tanks may also be subject to Michigan Air Pollution Control Rule 623 (Rn336.1623) and/or NSPS Subpart QQQ. This consolidated requirement basically adopts NSPS Kb for these tanks. Permit: 63-08E,TBD

Emission Unit: EUTANK19-S1, EUTANK40-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK53-S1, EUTANK55-S1, EUTANK57-S1, EUTANK58-S1, EUTANK61-S1, EUTANK72-S1, EUTANK101-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK116-S1, EUTANK22T118-S1, EUTANK127-S1, EUTANK128-S1, EUTANK104-S1, EUTANK120-S1, EUTANK29T79-S1, EUETHANK-S1

POLLUTION CONTROL EQUIPMENT

Internal Floating Roofs, External Floating Roofs

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain EUTANK108-S1, EUTANK109-S1, EUTANK110-S1 (prior to installation of a geodesic dome on the tank), and EUTANK128-S1 with slotted guidepole controls. **(R 336.1225, R 336.1702)**
2. The permittee shall maintain each storage tank in FGNAPHTHATANKS-S1 with the following deck and seal configuration, or a deck and seal configuration that results in the same or lower VOC emissions from the tanks: **(R 336.1225, R 336.1702)**

Equipment	Type	Deck	Primary Seal	Secondary Seal
EUTANK19-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK40-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK45-S1	Internal floating roof	Bolted	Vapor Mounted	Rim - Mounted
EUTANK46-S1	Internal floating roof	Bolted	Vapor Mounted	Rim - Mounted
EUTANK47-S1	Internal floating roof	Bolted	Vapor Mounted	Rim - Mounted
EUTANK48-S1	Internal floating roof	Bolted	Vapor Mounted	Rim - Mounted

Equipment	Type	Deck	Primary Seal	Secondary Seal
EUTANK49-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK53-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK55-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK57-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK58-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK61-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK72-S1	Internal floating roof	Bolted	Vapor Mounted	Rim - Mounted
EUTANK101-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK108-S1	External floating roof	Welded	Mechanical Shoe	Rim - Mounted
EUTANK109-S1	External floating roof	Welded	Mechanical Shoe	Rim - Mounted
EUTANK110-S1	External floating roof ^a	Welded	Mechanical Shoe	Rim - Mounted
EUTANK110-S1	Internal floating roof ^b	Welded	Mechanical Shoe	Rim - Mounted
EUTANK116-S1	Internal floating roof	Welded	Liquid Mounted	None
EUTANK22T118-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK127-S1	External floating roof	Welded	Mechanical Shoe	Rim - Mounted
EUTANK128-S1	External floating roof	Welded	Mechanical Shoe	Rim - Mounted
EUTANK29T79-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK104-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUTANK120-S1	Internal floating roof	Welded	Mechanical Shoe	None
EUETHTANK	Internal floating roof	Welded	Mechanical Shoe	None
a. This requirement applies prior to installation of a geodesic dome.				
b. This requirement applies on and after installation of a geodesic dome.				

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall perform inspections and monitor operating information for FGNAPHTHATANKS-S1 in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Kb. **(40 CFR Part 60, Subparts A and Kb)**

2. The permittee shall keep records of inspections and operating information for FGNAPHTHATANKS-S1 in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Kb. The permittee shall keep all records on file at the facility and shall make them available to the Department upon request. **(40 CFR Part 60, Subparts A and Kb)**
3. The permittee shall keep annual VOC emission calculations and monthly throughput records for FGNAPHTHATANKS-S1. The permittee shall keep all records on file at the facility and shall make them available to the Department upon request. **(R336.1225, R336.1702)**

VII. REPORTING

NA

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and Kb, as they apply to FGNAPHTHATANKS-S1. **(40 CFR Part 60 Subparts A and Kb)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FGDPPANNUAL-S1
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

The emission limits in this group are voluntary caps for the emission units affected by the 2024 Detroit Permitting Project. Emissions associated with compressors and the group of all equipment within a process unit, as defined in 40 CFR 60.591, are not affected by the 2024 Detroit Permitting Project and are tracked under FGPROCUNITS-S1. Permit: TBD

Emission Unit: EU04-VACHTR-S1, EU04-VAC2HTR-S1, EU05-CRUDEHTR-S1, EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU09-ALKYDIBREBHTR-S1, EU11-FCCU-S1, EU11-FCCUCHARHTR-S1, EU16-NHTSTRIPREBOIL-S1, EU16-NHT2STRIPREBOIL-S1, EU16-NHTCHARHTR-S1, EU16-NHT2CHARHTR-S1, EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU19-KHTCHARHTR-S1, EU21-S2OFFGAS-S1, EU27-ZURNBOILER-S1, EU27-B&WBOILER1-S1, EU-TEMP_BOILER-S1, EU42-43SULRECOV-S1, EU70-COKER-S1, EU70-COKERHTR-S1, EU72-SULRBLOCK2-S1, EU77-DHTHTR-S1, EUTANK16-S1, EUTANK17-S1, EUTANK18-S1, EUTANK19-S1, EUTANK23-S1, EUTANK24-S1, EUTANK27-S1, EUTANK28-S1, EUTANK30-S1, EUTANK31-S1, EUTANK32-S1, EUTANK33-S1, EU29TANK40-S1, EU29TANK41-S1, EUTANK40-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK50-S1, EUTANK51-S1, EUTANK52-S1, EUTANK53-S1, EUTANK54-S1, EUTANK55-S1, EUTANK56-S1, EUTANK57-S1, EUTANK58-S1, EUTANK59-S1, EUTANK60-S1, EUTANK61-S1, EUTANK62-S1, EUTANK63-S1, EUTANK64-S1, EUTANK70-S1, EUTANK71-S1, EUTANK72-S1, EUTANK100-S1, EUTANK101-S1, EUTANK102-S1, EUTANK103-S1, EUTANK104-S1, EUTANK105-S1, EUTANK106-S1, EUTANK107-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK116-S1, EUTANK120-S1, EUTANK125-S1, EUTANK126-S1, EUTANK127-S1, EUTANK128-S1, EUTANK129-S1, EUTANK130-S1, EUTANK133-S1, EUTANK134-S1, EUTANK216-S1, EUTANK314-S1, EUTANK315-S1, EUTANK316-S1, EUTANK317-S1, EUTANK318-S1, EUTANK319-S1, EUTANK320-S1, EUTANK324-S1, EUTANK507-S1, EUTANK508-S1, EUTANK601

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM10	111.1 tpy ^A	12 month rolling time period as determined at the end of each calendar month	FGDPPANNUAL-S1	SC VI.1	R336.1205, 40 CFR 52.21(c) & (d)
2. PM2.5	111.1 tpy ^A	12 month rolling time period as determined at the end of each calendar month	FGDPPANNUAL-S1	SC VI.1	R336.1205, 40 CFR 52.21(c) & (d)
3. NOx	424.4 tpy ^A	12 month rolling time period as determined at the end of each calendar month	FGDPPANNUAL-S1	SC VI.1	R336.1205, 40 CFR 52.21(c) & (d)
4. SO ₂	187.6 tpy ^A	12 month rolling time period as determined at the end of each calendar month	FGDPPANNUAL-S1	SC VI.1	R336.1205, 40 CFR 52.21(c) & (d)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
5. CO	168.4 tpy ^A	12 month rolling time period as determined at the end of each calendar month	FGDPPANNUAL-S1	SC VI.1	R336.1205, 40 CFR 52.21(d)
6. VOC	153.0 tpy ^A	12 month rolling time period as determined at the end of each calendar month	FGDPPANNUAL-S1	SC VI.1	R336.1205

^A This limit is the summation of the emissions from the equipment FGDPPANNUAL-S1 and FGDPPANNUAL-S3.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall calculate and keep records of the PM10, PM2.5, NO_x, SO₂, CO, and VOC emission rates from FGDDPANNUAL-S1 in tons per 12-month rolling time period as determined at the end of each calendar month, using a method acceptable to the AQD District Supervisor, considering the following. **(R 336.1205, 40 CFR 52.21(c) & (d))**
 - a) For storage tanks, the permittee may maintain VOC emission calculations and monthly throughput records in lieu of performing monthly VOC calculations.
 - b) CO emissions during periods of startup, shutdown, and malfunction for each emission unit in FG-HEATERS-S1 without a CO CEMS shall be calculated at 400 ppmv at 3% excess oxygen. For each emission unit in FGHEATERS-S1 without a CO CEMS, for which the permittee has collected CO emissions data during startup, shutdown and malfunction periods from representative process heaters, the permittee may, after submitting a demonstration to the AQD District Supervisor that the emission data is representative, use the representative process heater data for calculating the CO emission rate from that emission unit.
 - c) The data obtained from the sulfur content sampling program for various sulfur laden products and process streams.
2. The permittee shall calculate and keep records of the annual emissions of SO₂ from FGDPPANNUAL-S1 described in Appendix A, in tons per calendar year. Calculations and recordkeeping shall begin following the resumption of regular operations after the change and shall continue for ten (10) years. Resumption of regular operations is the issuance date of this PTI. **(R 336.2902(6)(c))**
3. The permittee shall calculate and keep records of the annual emissions of NO_x from FGDPPANNUAL-S1 described in Appendix B, in tons per calendar year. Calculations and recordkeeping shall begin following the

resumption of regular operations after the change and shall continue for ten (10) years. Resumption of regular operations is the issuance date of this PTI. **(R 336.2818(3)(c))**

4. On and after December 31, 2025, the permittee shall implement an enhanced LDAR program that includes monitoring of at least 3,000 additional flanges and/or connectors that are not required to be monitored as of the date of this PTI. The permittee shall submit the enhanced LDAR program to the AQD District Supervisor before December 31, 2025.³ **(R 335.1205)**

VII. REPORTING

1. The permittee shall submit records of the annual emissions of SO₂ from FGDPPANNUAL-S1 described in Appendix A, in tons per calendar year, to the AQD District Supervisor and Permit Section Manager within 60 days following the end of each reporting year if both the following occur:
 - a) The calendar year actual emission of SO₂ exceed the baseline actual emissions (BAE) for that pollutant by a significant amount, and
 - b) The calendar year actual emissions differ from the pre-construction projection. (The pre-construction projection is the sum of the projected actual emissions from each existing emission unit included in the Actual to Projected Actual Applicability Test used for FGDPPANNUAL-S1.)

The report shall contain the name, address, and telephone number of the facility; the annual emissions as calculated pursuant to SC VI.2, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.2902(6)(e))**

2. The permittee shall submit records of the annual emissions of NO_x from FGDPPANNUAL-S1 described in Appendix B, in tons per calendar year, to the AQD District Supervisor and Permit Section Manager within 60 days following the end of each reporting year if both the following occur:
 - a) The calendar year actual emission of NO_x exceed the baseline actual emissions (BAE) for that pollutant by a significant amount, and
 - b) The calendar year actual emissions differ from the pre-construction projection. (The pre-construction projection is the sum of the projected actual emissions from each existing emission unit included in the Actual to Projected Actual Applicability Test used for FGDPPANNUAL-S1.)

The report shall contain the name, address, and telephone number of the facility; the annual emissions as calculated pursuant to SC VI.3, and any other information the owner or operator wishes to include (i.e., an explanation why emissions differ from the pre-construction projection). **(R 336.2818(3)(e))**

3. Within 30 days after completion of the installation of a geodesic dome on EUTANK110-S1, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. **(R 336.1201(7)(a))**
4. Within 30 days after implementing the enhanced leak detection and repair (LDAR) program specified in SC VI.4, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. **(R 336.1201(7)(a))**

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. On and after December 31, 2025, the permittee shall not operate EUTANK110-S1 unless a geodesic dome has been installed on the tank.³ **(R 335.1205)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³ This condition is included at the request of the permittee.

FGDHOUPANNUAL-S1 FLEXIBLE GROUP CONDITIONS

DESCRIPTION

These emission units and flexible groups used the Actual-to-Potential test for PSD applicability for the Detroit Heavy Oil Upgrade Project. The previous emission limits in this group served to limit the Potential to Emit of covered equipment. The requirement to meet the previous emission limits and keep records of emissions expired on November 5, 2022, so the emission limits and associated recordkeeping and reporting have been removed. Permit: 63-08E, TBD

Emission Units: EU04-VACUUM-S1, EU04-VACHTR-S1, EU04-VAC2HTR-S1, EU05-CRUDE-S1, EU05-CRUDEHTR-S1, EU07-DHT-S1, EU-COKERFLARE-S1, EU08-GOHT-S1, EU08-GOHTCHARHTR-S1, EU08-GOHTCHARHTR2-S1, EU09-ALKYDIBREBHTR-S1, EU09-ALKYLATION-S1, EU11-FCCU-S1, EU12-GASCON-S1, EU16-NAPHHYTREAT-S1, EU16-NHTSTRIPREBOIL-S1, EU16-NHTCHARHTR-S1, EU13-PROPYLENE-S1, EU14-CCRPLATFOMER-S1, EU14-CCRPLCHARHTR-S1, EU14-CCRPLINTHTR-S1, EU14-CCRPLCATREG-S1, EU19-KEROHYTREAT-S1, EU19-KHTCHARHTR-S1, EU21-CPTREATER-S1, EU21-S2OFFGAS-S1, EU22-FUELOILHTR-S1, EU22-LPGRAILRACK-S1, EU22-TANKFARMS-S1, EU22-ASPHLOAD-S1, EU22-PENTLOAD-S1, EU27-ZURNBOILER-S1, EU27-B&WBOILER1-S1, EU29-WASTEWATER-S1, EU29-IGF1-S1, EU29-IGF2-S1, EU38-ROUGETERMNL-S1, EU41-SOURWATER-S1, EU42-43SULRECOV-S1, EU70-COKER-S1, EU70-COKERHTR-S1, EU72-SULRBLOCK2-S1, EU73-SOURWATER2-S1, EU76-UTILITIES-S1, EU77-DHTHYTREAT-S1, EU77-DHTHTR-S1, EU78-FUELGASRECOVERY-S1, EU99-LPGLOADRACK-S1, EU00-COOLTOWERA-S1, EU00-COOLTOWERC-S1, EU00-COOLTOWERD-S1, EU00-COOLTOWERE-S1, EU00-COOLTOWERF-S1, EU00-COOLTOWERG-S1, EU00-COOLTOWERH-S1, EU00-COOLTOWERNEW-S1, EUTANK16-S1, EUTANK17-S1, EUTANK19-S1, EUTANK23-S1, EUTANK24-S1, EUTANK27-S1, EUTANK28-S1, EU29TANK40-S1, EU29TANK41-S1, EUTANK45-S1, EUTANK46-S1, EUTANK47-S1, EUTANK48-S1, EUTANK49-S1, EUTANK50-S1, EUTANK53-S1, EUTANK54-S1, EUTANK55-S1, EUTANK56-S1, EUTANK57-S1, EUTANK58-S1, EUTANK59-S1, EUTANK60-S1, EUTANK61-S1, EUTANK62-S1, EUTANK63-S1, EUTANK64-S1, EUTANK70-S1, EUTANK71-S1, EUTANK72-S1, EUTANK100-S1, EUTANK101-S1, EUTANK102-S1, EUTANK103-S1, EUTANK104-S1, EUTANK105-S1, EUTANK106-S1, EUTANK107-S1, EUTANK108-S1, EUTANK109-S1, EUTANK110-S1, EUTANK112-S1, EUTANK113-S1, EUTANK114-S1, EUTANK115-S1, EUTANK116-S1, EUTANK120-S1, EUTANK125-S1, EUTANK126-S1, EUTANK127-S1, EUTANK128-S1, EUTANK129-S1, EUTANK130-S1, EUTANK216-S1, EUTANK507-S1, EUTANK508-S1, EUTANK601-S1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FGFLARES-S1
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

All refinery flares. Three flares are subject to the NSR Consent Decree (USEPA Consent Order 01-40119) and subsequent revisions: EU-CRUDEFLARE-S1, EU-UNIFFLARE-S1, and EU-ALKYFLARE-S1. Permit: 63-08E, 57-20, TBD

Emission Units: EUCRUDEFLARE-S1, EUUNIFFLARE-S1, EUALKYFLARE-S1, EU-COKERFLARE-S1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

- There shall be no visible emissions from any flare in FGFLARES-S1 except for periods not to exceed a total of five minutes during any two consecutive hours. This requirement is based on the federal Standards of Performance for New Stationary Sources, 40 CFR 60.18(c)(1). **(40 CFR Part 60, Subparts A and J)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. H ₂ S in refinery fuel gas burned ^{a,b}	160 ppmv on a 3 hour rolling average basis	Three hour rolling average	Each flare in FGFLARES-S1	SC VI.1	40 CFR60.103a(h)
^a The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this requirement. For flares equipped with flare gas recovery, the determination that a relief valve leakage or other emergency malfunction is exempt from this requirement will be based on the root cause analysis conducted in accordance with SC III.3, SC III.4, SC III.7, SC III.11, and SC III.12 ^b The permittee shall comply with this material limit and other applicable requirements of 40 CFR Part 60, Subparts A and Ja by the dates specified by USEPA Consent Decree 12-11544, as amended.					

- By the dates specified by U.S. EPA Consent Decree 12-11544, as amended, waste gas flow to all flares in FGFLARES is limited to 550,000 scf per day on a 365-day rolling average. Each exceedance of the 365-day rolling average limit shall constitute one day of violation. An exceedance of the limits shall not prohibit ongoing refinery operations.² **(U.S. EPA Consent Decree 12-11544, 39)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

- The permittee shall conduct an event-specific investigation into each flaring incident that results in sulfur dioxide emissions greater than 500 pounds from FGFLARES-S1 in any 24-hour period. The investigation shall be performed in accordance with the requirements outlined in SC III.9. The permittee may rely on prior investigation reports for events that have the same or similar root causes. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
- The permittee shall conduct an event-specific investigation into each flaring incident that results in sulfur dioxide or volatile organic compound emissions greater than 500 pounds from FGFLARES-S1 in any 24-hour period. The investigation shall be performed in accordance with the requirements outlined in SC III.10. The permittee may rely on prior investigation reports for events that have the same or similar root causes.³ **(R336.1201(3))**

3. The permittee shall maintain FGFLARES-S1 in good working order and in a manner consistent with good pollution control practices for minimizing emissions including during periods of startup, shutdown, and malfunction. Good air pollution control practice for FGFLARES-S1 shall include, at a minimum, development, implementation, and operation in accordance with an approved Sulfur Shedding Plan to minimize or prevent excess sulfur dioxide emissions from the Sulfur Recovery Units, Tail Gas Treating Units ("TGTUs"), and associated amine system. The Sulfur Shedding Plan shall have as a goal the elimination of flaring incidents in excess of 500 pounds of sulfur dioxide in any 24-hour period through the following. **(R 336.1205, 40 CFR 60.11(d), Consent Order 01-40119)**
 - a) Define maintenance and operation practices for the new Sulfur Recovery Plants, the Tail Gas Treating Units ("TGTUs"), and amine system, and associated equipment in conjunction with this project. The plan should also evaluate and address any upstream process unit that has a direct impact on the operation and maintenance of the new Sulfur Recovery Plants, TGTUs, and Amine Systems.
 - b) Define good air pollution control practices to minimize the duration and amount of excess sulfur dioxide emissions from flaring events associated with the Sulfur Recovery Plants, TGTUs, and Amine Systems. The good pollution control practices shall include but not be limited to procedures to reduce excess sulfur dioxide emissions from a flaring incident through rate reduction or even shutdown of applicable process units associated with the flaring event. These practices should also entail operating measures and procedures to divert material being flared to other Sulfur Recovery Plants at the refinery.
 - c) Define measures to ensure continuous operation of the Sulfur Recovery Plants and Amine Systems between scheduled maintenance turnarounds. The measures shall include, but not be limited to, sulfur shedding procedures, adequate equipment redundancy, new startup and shutdown procedures, emergency procedures and schedules to coordinate maintenance turnarounds of the Sulfur Recovery Plants, TGTUs, and any supplemental control device to coincide with scheduled turnarounds of major upstream process units.
4. The permittee shall review and revise the Sulfur Shedding Plan on at least an annual basis to ensure it remains accurate. **(40 CFR 60.11(d), U.S. EPA Consent Order 01-40119)**
5. The permittee shall conduct an event-specific investigation into each event that resulted in flaring more than 500,000 standard cubic feet of material in FGFLARES-S1 in any 24-hour period. The permitted pilot and sweep gas routed to the flares shall be excluded from the 500,000 standard cubic feet threshold. The investigation shall be performed in accordance with the requirements outlined in Special Condition III.9. The permittee may rely on prior investigation reports for events that have the same or similar root causes. **(R 336.1205, R 336.2802, 40 CFR 52.21)**
6. The permittee shall establish a tracking system for flaring incidents that result in emissions greater than 100 pounds but fewer than 500 pounds of VOC from FGFLARES-S1 in any 24-hour period. The permittee will take action to minimize the likelihood of recurrence of such incidents. After 28 instances of flaring events between 100 and 499 pounds of VOC within a consecutive twelve month period, permittee shall conduct an event-specific investigation into all such instances for the next six month period, at which point a new 12-month period for purposes of counting instances shall begin.³ **(R 336.1201(3))**
7. The permittee shall prepare and follow a Flare Waste Gas Minimization Plan for FGFLARES-S1. The plan shall be designed and implemented to reduce or eliminate flaring events and shall include, at a minimum, the following elements. **(R 336.1205, R 336.2802, 40 CFR 52.21)**
 - a) A description and technical information for each flare that includes:
 - i. Detailed process flow diagram accurately depicting all pipelines, process units, flare gas recovery systems, surge drums and knock-out pots, compressors, and other equipment that vent to each flare. At a minimum, this shall include full and accurate as built dimensions and design capacities of the flare gas recovery systems, compressors, surge drums and knock-out pots.
 - ii. Description of equipment, processes and procedures installed or implemented within the last five years to reduce flaring. The description shall specify the year of installation.
 - iii. Description of any equipment, processes, or procedures the owner or operator plans to install or implement to eliminate or reduce flaring. The description shall specify the scheduled year of installation or implementation.
 - iv. Description and evaluation of prevention measures to address the following:

1. Flaring that has occurred or reasonably may be expected to occur during planned major maintenance activities, including startup and shutdown. The evaluation shall include a review of flaring that has occurred during these activities in the past five years and shall consider the feasibility of performing these activities without flaring.
 2. Flaring that may reasonably be expected to occur due to issues of gas quantity and quality. The evaluation shall include an audit of the storage capacity available for excess vent gases, the scrubbing capacity available for vent gases including any limitations associated with scrubbing the vent gases for use as a fuel, and shall consider the feasibility of reducing flaring through the recovery, treatment, and use of the gas or other means.
 3. Flaring caused by the recent failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. The evaluation shall consider the adequacy of existing maintenance schedules and protocols for such equipment. For purposes of this section, a failure is recurrent if it occurs more than twice in any five year period as a result of the same causes as identified in the event-specific investigations.
- b) A program of corrective action for malfunctioning process, air pollution control, and monitoring equipment related to the performance of FGFLARES-S1.
 - c) Procedures for conducting event-specific investigations as required by SC III.1 and SC III.5.
 - d) A determination of the appropriate steam to hydrocarbon ratio for each material for each flare, the basis for the ratios, and methods for estimating emissions from each flare, including when the steam to hydrocarbon ratios are not maintained at the appropriate level.
8. The permittee shall review and revise the Flare Waste Gas Minimization Plan on at least an annual basis to ensure it remains current and complies with the provisions outlined in SC III.7 **(R 336.1205, R 336.2802, 40 CFR 52.21)**
9. At a minimum, the permittee shall include all of the following specific information in the event-specific investigations for the reportable flaring events (i.e. greater than 500 pounds SO₂ or 500,000 scf of gas). **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
- a) The date and time that the flaring event started and ended.
 - b) The total quantity of gas flared during each event.
 - c) An estimate of the quantity of sulfur dioxide and VOC that was emitted and the calculations used to determine the quantities.
 - d) The steps taken to limit the duration of the flaring event or the quantity of emissions associated with the event.
 - e) A detailed analysis that sets forth the root cause and all significant contributing causes of the flaring event to the extent determinable.
 - f) An analysis of the measures, if any, available to reduce the likelihood of a recurrence of a flaring event resulting from the same root cause or significant contributing causes in the future.
 - g) A demonstration that the actions taken during the flaring event are consistent with the procedures specified in the Flare Waste Gas Minimization and Sulfur Shedding plans, as appropriate. If the actions taken during the flaring event are not consistent with the procedures specified in the appropriate plan, then the permittee must record the actions taken for that event and identify the reasons why the plan was not followed.
 - h) For any flaring event that lasts longer than 24 hours, each calendar day shall constitute a separate event.
10. At a minimum, the permittee shall include all of the following specific information in the event-specific investigations for the reportable flaring events (i.e. greater than 500 pounds SO₂ or VOC, or more than 500,000 scf of gas)³ **(R 336.1201(3))**
- a) The date and time that the flaring event started and ended.
 - b) The total quantity of gas flared during each event.
 - c) An estimate of the quantity of sulfur dioxide and VOC that was emitted and the calculations used to determine the quantities.
 - d) The steps taken to limit the duration of the flaring event or the quantity of emissions associated with the event.
 - e) A detailed analysis that sets forth the root cause and all significant contributing causes of the flaring event to the extent determinable.
 - f) An analysis of the measures, if any, available to reduce the likelihood of a recurrence of a flaring event resulting from the same root cause or significant contributing causes in the future.

- g) A demonstration that the actions taken during the flaring event are consistent with the procedures specified in the Flare Waste Gas Minimization and Sulfur Shedding plans, as appropriate. If the actions taken during the flaring event are not consistent with the procedures specified in the appropriate plan, then the permittee must record the actions taken for that event and identify the reasons why the plan was not followed.
 - h) For any flaring event that lasts longer than 24 hours, each calendar day shall constitute a separate event.
11. The permittee shall complete each event-specific investigation report within 45 calendar days after the reportable flaring incident. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
12. The permittee shall operate each flare in FGFLARES-S1 in a satisfactory manner at all times that emissions may be vented to it, including maintaining an adequate steam to hydrocarbon ratio in each flare and a minimum heat content of 300 BTU/scf in the vent gas to each flare. **(R 336.1910, 40 CFR 60.18)**
13. The permittee shall comply with the following requirements for corrective action procedures as they relate to reportable flaring events (events resulting in sulfur dioxide emissions greater than 500 pounds in any 24-hour period) 40 CFR 60.11d: **(R 336.1910, 40 CFR Part 60, Subpart A)**
- a) The permittee shall take reasonable steps to correct conditions that have caused or contributed to such events, and to minimize such incidents. The permittee shall evaluate whether reportable flaring events are due to malfunctions.
 - b) In response to any reportable flaring events, the permittee shall take, as expeditiously as practicable, such interim and/or long term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the root cause and all contributing causes of the reportable flaring event.
 - c) As it relates to hydrocarbon flaring incidents, the purpose of these requirements is to ensure the flare system is operated in a manner consistent with good air pollution control practices, as specified under 40 CFR 60.11(d), and to ensure that hydrocarbon flaring resulting from startup, shutdown, malfunction, or process upset is not subject to the emission limitations, monitoring, or other requirements for refinery fuel gas found in 40 CFR 60.100–60.109.³
14. MPC shall operate each Flare Gas Recovery Systems (FGRS) in a manner to minimize waste gas to the respective flare while ensuring safe refinery operations. MPC also shall operate each FGRS consistent with good engineering and maintenance practices and in accordance with its design and the manufacturer's specifications. Requirements related to compressors being available for operation and/or in operation. MPC shall comply with the following requirements when potentially recoverable gas is being generated: **(U.S. EPA Consent Decree 12-11544, 38D)**
- a) Two-Compressor Systems (EUUNIFFLARE-S1): MPC shall have one Compressor Available for Operation and/or in operation 98% of the time and two Compressors Available for Operation and/or in operation 96% of the time.
 - b) More than Two-Compressor Systems (EU-COKERFLARE-S1): MPC shall have three Compressors Available for Operation and/or in operation 96% of the time and two Compressors Available for Operation and/or in operation at all times.

IV. DESIGN/EQUIPMENT PARAMETER(S)

- 1. The permittee shall maintain the ignition sensor and/or pilot flame for FGFLARES-S1. **(40 CFR Part 60, Subpart A)**
- 2. The permittee shall equip and maintain each flare in FGFLARES-S1 with a pilot flame. **(R 336.1910, 40 CFR Part 60 Subpart A, 40 CFR 63.11(b)(5))**
- 3. Each flare in FGFLARES-S1 shall be designed and installed so that it complies with the requirements of 40 CFR Part 60, Subpart A. **(R 336.1910, 40 CFR 60.18(c))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and keep records of the concentration of hydrogen sulfide in the refinery fuel gas burned in FGFLARES-S1 in accordance with the Federal Standards of Performance as specified in 40 CFR Part 60, Subpart J and where applicable Ja, in a manner and with instrumentation acceptable to the Division. Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S in the fuel gas being burned. **(40 CFR 60.105(a)(4), 40 CFR 60.107a(a)(2))**
2. The permittee shall keep records of emissions and operating information for each flare in FGFLARES-S1 to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and J. **(40 CFR Part 60, Subparts A and J)**
3. The permittee shall monitor emissions and operating and maintenance information for each flare in FGFLARES-S1 in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and CC. **(40 CFR Part 63, Subparts A and CC)**
4. The permittee shall keep records of emission information and operating and maintenance information for each flare in FGFLARES-S1 to comply with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and CC. The permittee shall keep all source emissions and operating and maintenance information on file at the facility for a period of at least five years and make them available to the Department upon request. **(40 CFR Part 63, Subparts A and CC)**
5. The permittee shall track and ensure timely closure of the corrective actions, if any, identified to minimize the likelihood of a recurrence of the reportable flaring events. The permittee shall report every six months on the status of the yet-to-be-completed corrective actions related to the reportable flaring incidents. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
6. The permittee shall keep, in a satisfactory manner, a record of the current and prior versions of the Sulfur Shedding Plan and the Flare Waste Gas Minimization Plan for FGFLARES-S1, as required by SC III.6 and SC III.10. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
7. The permittee shall monitor all flares for visible emissions using color video monitors with date and time stamp. **(R 336.1205)**
8. The permittee shall install, maintain, and continuously operate, for EU-CRUDEFLARE, EU-UNIFFLARE, and EU-ALKYFLARE, continuous flow measuring devices to continuously monitor and record the flow of gas to each of these flares. The flow measuring devices shall be sensitive to rapid flow changes and have the capability of reporting both instantaneous velocity and totalized flow. Materials exposed to the flare gas shall be corrosion resistant. The flow measuring devices shall (i) feature automated daily calibrations at low and high ranges, and (ii) shall signal alarms if the calibration error or drift is exceeded, provided that the monitor is equipped with such capability. The volumetric flow measuring devices may consist of one or more flow meters, and, as combined, shall meet the following specifications. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
 - a) Velocity Range: 0.1-250 ft/sec.
 - b) Repeatability: $\pm 1\%$ of reading over the velocity range.
 - c) Accuracy: $\pm 20\%$ of reading over the velocity range of 0.1-1 ft/s and $\pm 5\%$ of reading over the velocity range of 1-250 ft/s.
 - d) Installation: Applicable AGA, ANSI, API, or equivalent standard.
 - e) Flow Rate Determination: Must be corrected to one atmosphere pressure and 68 °F and recorded as one-minute averages.
 - f) Data Records: Measured continuously and recorded over one-minute averages. The instrument shall be capable of storing or transferring all data for later retrieval.
 - g) QA/QC: An annual verification of accuracy is required and shall be specified by the manufacturer.

9. The permittee shall install, maintain, and continuously operate devices to continuously monitor and record the flow of steam to each flare in FGFLARES-S1, the VOC composition of the vent gas stream to each flare, and the steam to hydrocarbon ratio in each flare. The monitoring devices shall meet the following specifications. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
- Turndown Ratio: 25:1.
 - Repeatability: $\pm 1\%$ of reading over the range of the instrument.
 - Accuracy: $\pm 1\%$ from 100% to 15 % of span, $\pm 2\%$ from 15 % of span to 6 % of span, $\pm 3\%$ from 6 % of span to 4% of span.
 - Installation: Applicable AGA, ANSI, API, or equivalent standard.
 - Flow Rate Determination: Must be corrected to one atmosphere pressure and 68 °F and recorded as one-minute averages.
 - Data Records: Measured continuously and recorded over one-minute averages. The data acquisition system shall be capable of storing and transferring all data for later retrieval.
 - QA/QC: An annual verification of accuracy is required and shall be specified by the manufacturer.
10. All data as generated by the flare and steam flow measuring devices shall be continuously recorded. The recording system(s) must have the capability to generate one-minute average data from that which is continuously generated by the flow measuring devices. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
11. The permittee shall maintain the flare and steam flow measuring devices and steam to hydrocarbon control system in good operating condition at all times when the flare that it serves is operational, except when out of service due to:
- Breakdowns and unplanned system maintenance of each monitoring device shall not exceed 96 hours, cumulatively, per quarter for each reporting period.
 - Planned maintenance, which shall not exceed 14 days per 18 month period, provided that a written notification detailing the reason for maintenance and methods that will be used during the maintenance period to determine emissions associated with flare events is provided to the AQD District Supervisor prior to, or within 24 hours of, removal of the monitoring system from service. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
12. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the TRS concentration in the vent gas to each flare in FGFLARES-S1 on a continuous basis. **(R 336.1205, R 335.1224, R 336.1702, R 336.2802, 40 CFR 52.21)**
13. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a gas concentration measurement system to monitor and record the composition of the vent gas to each flare in FGFLARES-S1 on a continuous basis. **(R 336.1201(3), 40 CFR 63.670(j))**
- The gas concentration measurement system shall be maintained to be accurate within 5% of full scale.
 - The minimum sampling frequency shall be one sample every 15 minutes.
14. The permittee shall calculate and keep records of the annual emissions of PM, PM10, NO_x, VOC, CO, SO₂, sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), and Total Reduced Sulfur (TRS) from the Detroit heavy oil upgrade project (Detroit HOUP), in tons per year on a calendar year basis. Records shall be kept in the format described in Appendix 4F-S1, or an alternate format acceptable to the AQD Permit Section Supervisor. Calculations and record keeping shall begin the month in which the Detroit HOUP begins normal operations and shall continue for 10 years. **(R 336.2818, 40 CFR 52.21(r)(6)(iii), 40 CFR Part 51, Appendix S)**
15. The permittee shall calculate, keep records of, and annually report to the AQD, the annual emissions of PM, PM10, NO_x, VOC, CO, SO₂, sulfuric acid mist (H₂SO₄), hydrogen sulfide (H₂S), and Total Reduced Sulfur (TRS) from the Detroit heavy oil upgrade project (Detroit HOUP), in tons per year on a calendar year basis. Calculations shall be based on the best available and representative data. Supporting documentation shall be submitted with the emissions report and shall be generally consistent with the format and specificity of Exhibit 7 of the Sierra Club Agreement. Records shall be kept in the format described in Appendix 4F-S1, or an alternate format acceptable to the AQD Permit Section Supervisor. Calculations and record keeping shall begin the month in which the Detroit HOUP begins normal operations and shall continue for 10 years. **(R 336.1201(3))**

See Appendix 3-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VII. REPORTING

1. The permittee shall submit the data on the concentration of hydrogen sulfide in the refinery fuel gas burned in FGFLARES-S1 to the AQD District Supervisor in acceptable format within 30 days following the end of the quarter in which the data were collected. **(R 336.1201(3), 40 CFR 60.7)**
2. The permittee shall submit a semiannual summary of reportable flaring incidents to the AQD District Supervisor. Each report shall include, as a minimum, the number of reportable flaring incidents that occurred during the period, the amount of excess emissions during each reportable flaring incident, and the status of all yet-to-be-completed corrective actions from reportable flaring incidents. The permittee shall submit each report in an acceptable format within 30 days following the end of the semiannual period that the report covers. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
3. The permittee shall submit a copy of the Sulfur Shedding and Waste Gas Minimization Plans to the AQD District Supervisor for review at least 60 days before commencing operation of equipment associated with the heavy oil upgrade project. **(R 336.1205, R 336.2802, 40 CFR 52.21, Consent Order 01-40119)**
4. The permittee shall submit to the AQD District Supervisor an operation and maintenance (O&M) plan and a Waste Gas Minimization Plan for each flare in FGFLARES-S1 at least 120 days before commencing operation of EU70-COKER. At a minimum the O&M plan shall include an inspection schedule and description of inspection procedures for the flare components, including the flare tips and pilots. **(40 CFR Part 63, Subparts A and CC)**

See Appendix 8-S1 of Renewable Operating Permit No. MI-ROP-A9831-2012c

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and Subpart CC, as they apply to FGFLARES-S1. **(40 CFR Part 63, Subparts A and CC)**
2. The permittee shall comply with all provision of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A, J, and where applicable Ja, as they apply to FGFLARES-S1. **(40 CFR Part 60 Subparts A and J/Ja)**

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

³ This condition is included at the request of the permittee.

FG FACILITY CONDITIONS

DESCRIPTION

The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall conduct an enhanced air monitoring program at the facility to address citizen concerns. The permittee shall monitor concentrations of carbon monoxide, PM10, sulfur dioxide, volatile organic compounds (TO-15 canister method – subset to be determined and approved in the enhanced air monitoring program), and total reduced sulfur at no less than four sites in a manner and with instrumentation approved by the AQD Air Monitoring Unit. The permittee shall monitor all required pollutants, according to the approved monitoring plan. Monitoring shall continue for at least three years after issuance of Permit to Install No. TBD.¹ **(R 336.1901)**
2. The permittee shall keep records of all air monitoring data collected in the air monitoring program. The permittee shall submit all records to the AQD Air Monitoring Unit in an acceptable format within 45 days following the end of the quarter in which the data were collected.¹ **(R 336.1901)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**APPENDIX A. Recordkeeping Provisions
 Recordkeeping Provisions for Source Using
 Actual to Projected-Actual Applicability Test**

All information in this Appendix shall be maintained pursuant to R 336.2902(6) for ten years following the resumption of regular operations after the change. Resumption of regular operations is the issuance date of this PTI. The monitoring, recordkeeping, and reporting requirements for the pollutants listed below are listed in FGDPPANNUAL-S1, SC VI.2 and SC VII.1.

- A. Project Description:** Detroit Permitting Project
- B. Applicability Test Description:** Actual to Projected Actual Test
- C. Emission Limitations:**

Emission Unit/Flexible Group ID	Pollutant	Emissions (tpy)			Reason for Exclusion
		Baseline Actual	Projected Actual	Excluded	
FGDPPANNUAL-S1	SO ₂	172.1	187.6	10.8	Numerous emission units have operated for a minimum of one month with actual emission rates above baseline emission rates.

**APPENDIX B. Recordkeeping Provisions
 Recordkeeping Provisions for Source Using
 Actual to Projected-Actual Applicability Test**

All information in this Appendix shall be maintained pursuant to R 336.1818(3) for ten years following the resumption of regular operations after the change. Resumption of regular operations is the issuance date of this PTI. The monitoring, recordkeeping, and reporting requirements for the pollutants listed below are listed in FGDPANNUAL-S1, SC VI.3 and SC VII.2.

- A. Project Description:** Detroit Permitting Project
- B. Applicability Test Description:** Actual to Projected Actual Test
- C. Emission Limitations:**

Emission Unit/Flexible Group ID	Pollutant	Emissions (tpy)			Reason for Exclusion
		Baseline Actual	Projected Actual	Excluded	
FGDPANNUAL-S1	NOx	348.9	424.4	45.4	Numerous emission units have operated for a minimum of one month with actual emission rates above baseline emission rates.