AIR EMISSION PERMIT NO. 16300003-016
Major Amendment

IS ISSUED TO

MARATHON PETROLEUM COMPANY, LLC
30 St. Paul Park Road
St. Paul Park, Washington County, MN 55071

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are described in the Permit Applications Table.

This permit amendment supersedes Air Emission Permit No. 16300003-015 and authorizes the Permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Any additions or changes to conditions incorporated into Minnesota's State Implementation Plan (SIP) under 40 CFR § 52.1220, designated "Title I: SIP for SO_2" must go through the federal SIP approval process before becoming effective. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the SIP under 40 CFR § 52.1220 and as such as are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: Federal; Part 70/Major for New Source Review; Title I SIP Conditions SO_2

Operating Permit Issue Date: October 26, 1999

Authorization to Construct and Operate (40 CFR § 52.21) Issuance Date: September 2, 2009

Major Amendment Issue Date: September 11, 2009

Expiration Date: 10/26/2004* – Title I Conditions do not expire.
Each new or revised condition designated "Title I Condition: SIP for SO_2" is not effective or enforceable until approved by EPA as a SIP revision under Title I of the Clean Air Act.

*The Permittee may continue to operate this facility after the expiration date of the permit, as provided by Minn. R. 7007.0450, subp. 3. (Title V Reissuance Application was received April 27, 2004.)

Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for Paul Eger
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Action No.	Application Date(s)	Issuance Date
Total Facility Operating Permit	001	April 12, 1995	October 26, 1999
Major Amendment	002	April 27, 1999	October 10, 2000
Administrative Amendment	003	December 01, 1999	January 19, 2000
Major Amendment	004	July 18, 2000	January 25, 2001
Major Amendment	005	July 31, 2001	August 16, 2002
Major Amendment	006	January 12, 2002; March 27, 2002; May 9, 2002 (2)	November 5, 2002
Major Amendment	007	MPCA-Initiated	January 31, 2003
Major Amendment	008	MPCA-Initiated	October 2, 2003
Major Amendment	009	August 11, 2003	March 24, 2004
Major Amendment	010	August 26, 2002; February 2, 2004	August 16, 2004
Administrative Amendment Minor Amendment Administrative Amendment Major Amendment Minor Amendment Administrative Amendments	011	January 30, 2004 April 29, 2004 September 20, 2004 (July 3, 2003) December 13, 2004 December 30, 2004 March 9, 2005	November 30, 2005
Administrative Amendment Minor Amendment Major Amendment Minor Amendment Mandatory Reopening	012	November 18, 2005 May 27, 2005 August 16, 2005 November 28, 2005 MPCA-Initiated	July 10, 2006
Major Amendment Mandatory Reopening Major Amendment Administrative Amendment Administrative Amendment Administrative Amendment	013	December 30, 2005 MPCA-Initiated April 10, 2006 May 2, 2006 August 8, 2006 February 2007	September 18, 2007
Moderate Amendment	014	June 12, 2007	July 21, 2008
Administrative Amendment	015	February 26, 2008; March 14, 2008, and June 30, 2008	September 23, 2008
Major Amendment Major Amendment Administrative Amendment	016	January 30, 2009 April 16, 2009 September 14, 2007	See above

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Permit Action 012: None

Permit Action 013: None

Permit Action 014: None

Permit Action 015: None

Permit Action 016: Appendix B – Parameters Relied Upon in SO_2 Modeling for NAAQS May 2009

NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Northwest Refinery Company began operating a refinery at the site of the current Marathon Petroleum Company, LLC facility in the early 1940's. In 1970, Ashland Petroleum Company, a Division of Ashland, Inc., purchased the refinery from Northwest Refinery Company. On January 1, 1998, Ashland Petroleum Company, a Division of Ashland, Inc., transferred ownership to Marathon Ashland Petroleum, LLC. The LLC was a joint venture of Marathon Oil Company and Ashland, Inc. In 2005, the name was changed to Marathon Petroleum Company, LLC

Marathon Petroleum, LLC (MPC) operates its petroleum refinery in the cities of St. Paul Park and Newport, Washington County. The petroleum refinery processes foreign and domestic crude oil. The crude oil is processed in the various refinery units into customer products. The principal petroleum products produced in the refinery process are propane, gasoline, diesel fuel, distillate oils, kerosene, fuel oils, jet fuel, asphalt and industrial grade sulfur. These products leave the refinery through several methods such as tanker trucks, barges, railcars, and product pipelines.

The refinery processing units at the MPC facility include 27 process heaters, one Fluidized Catalytic Cracker (FCC) regenerator, and two Sulfur Recovery Units with a common Shell Claus Offgas Treatment tailgas unit. In addition to the main refinery processing units, there are also many types of units that support the processing units. These supporting units include three steam boilers, four stationary diesel engines, heavy oil truck racks, light oil truck racks, barge docks, heavy oil rail racks, FCC catalyst hopper, heater decoking operations, cooling towers and a wastewater treatment plant. The refinery also includes 110 storage tanks and 60 grouped fugitive emission sources.

The refinery operates 24 hours per day, 7 days per week, 365 days per year. Only during maintenance activities such as shutdowns and turnarounds are the units not operating. Curtailment of natural gas by Northern States Power does cause a variation in the operating scheme of the refinery.

PERMIT ACTION 002: On March 28, 2000, this permit was placed on a 30-day public notice. The permit was re-noticed to address removal of a permit term, which is the Best Available Technology (BACT) analysis. This permit action responds to an application for a Major Permit amendment. This permit action was for the operation of portable diesel engines, which are brought on site on a temporary basis for power failure, flooding, equipment breakdown, startup or shutdown, emergency response operation purposes only. These engines are rented from outside vendors and transported to the site.

The 1990 Clean Air Act Amendments (CAA) define the term "nonroad engine" and redefine the term "stationary source" so as to exclude "nonroad engines" from the definition of a stationary source. As a result of this change, U.S. Environmental Protection Agency (EPA) has clarified that the federal CAA does not allow States to directly regulate nonroad engines under programs designed to regulate stationary sources. However, States are still obligated to regulate nonroad engines under their State Implementation Plans (SIP) as may be necessary to meet other CAA requirements.

The operation of these engines would result in a significant emissions increase for Nitrogen Oxides (NO_X). Because these portable engines will meet the EPA's definition of "nonroad engines" as defined in 40 CFR § 89.2, BACT analysis is not required for NO_X emissions but it is still necessary to meet the National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) increments. MPC accepted federally enforceable permit limits for Particulate Matter (PM_{10}) and Sulfur Dioxide (SO_2). By limiting PM_{10} and SO_2, Carbon Monoxide (CO), lead, and Volatile Organic Compounds (VOC) were also limited.

The permit action also allowed MPC to install and operate a 1.7 million gallon tank for storage of three chemicals - light cycle oil, reformate (gasoline), or isomerate, and to operate a second tail gas compressor for the No. 2 Crude Unit which meets the Minor Amendment requirements under Minn. R. 7007.1450. The application for the tank was originally submitted as a major amendment. After MPCA's review and instruction, MPC revised the application and resubmitted it as a minor amendment. The minor amendments were incorporated into the permit.

PERMIT ACTION 003: Administrative Amendment, incorporated the following: Add the SIP language to the cover page to reflect the SIP conditions; Add QA/QC requirements to the permit; Remove the regularly maintenance schedule requirements for EU 010, EU 011, EU 012, and EU 017, and add the Alkylation Unit Safeguards and Emergency Diesel powered pump project permit requirements which was issued June 21, 1999.

PERMIT ACTION 004: The amendment revised the requirements and eliminated unnecessary (redundant) limits/requirements for EU026, EU027, EU028, and EU029 from the existing permit.

PERMIT ACTION 005: The major amendment to the Total Facility Permit authorizes the construction and operation of a thermal oxidizer that will treat the emissions from portions of the facility's existing wastewater treatment plant. The effluent from the Wastewater Treatment Plant (WWTP) process contains Hydrogen Sulfide (H_2S). Therefore, the oxidation of the vapors from portions of the WWTP will create SO_2.

The potential SO_2 increase is above 2.28 lb/hour. The source is required to perform SO_2 dispersion modeling as part of Minnesota's SIP, if it modifies such that SO_2 emissions will increase more than 2.28 lb/hour. Marathon Ashland has submitted the required dispersion modeling that predicts that ambient standards will not be exceeded as a result of the facility's operation.

A limit on H2S content of the vapors combusted by the thermal oxidizer is set such that potential emissions from the new thermal oxidizer for SO_2 are less than 39 tons per year. Therefore, the modification was not subject to federal new source review.

PERMIT ACTION 006: MPC submitted four permit applications between January 22, 2002, and May 9, 2002. The changes to the permit associated with each permit application are summarized below.

New Temporary Thermal Oxidizer, Activation of Two New Loading Bays (January 22, 2002 Application) - This permit amendment allows for the operation of a portable thermal oxidizer (CE 018) to control emissions from the truck loading rack (EU 063) when the vapor recovery system (CE 014) is shut down for maintenance or repair. This permit amendment also allows for activation of the remaining two bays at the truck loading rack. Emissions from the truck loading rack are restricted to avoid classification as a major modification under 40 CFR § 52.21 (Prevention of Significant Deterioration Rules).

No. 3 Sulfur Recovery Unit (SRU)/No. 3 SCOT Tail Gas Unit (March 27, 2002 Application) - The permit amendment allows for the installation of the No. 3 SRU/No. 3 SCOT tail gas unit (EU 083). The permit requires operation of a Continuous Emission Monitor (CEM) to continuously monitor SO_2 emissions and a monitor to continuously monitor the hydrogen sulfide concentration of fuel gases burned in the unit. This permit amendment also allows for physical changes to heater 34-B-2 (EU 016) which will only change the dispersion characteristics of emissions and will not increase emissions from the heater. This permit application also requests correction of several permit terms. These terms are summarized below:

- The reference to the No. 4 and No. 6 boilers is removed from the formula used to calculate emissions from the stack for the existing sulfur recovery units (EU 019). The configuration has been changed so that the No. 4 and No. 6 boilers exhaust through a separate stack (SV 016), so this reference is no longer accurate.
- The reference to the existing SRUs and the No. 6 boiler is removed from the formula for calculating SO_2 emissions from the No. 4 boiler (EU 020). The configuration has been changed so that the No. 4 boiler exhausts from a separate stack and has a separate SO_2 emission limit.
- The reference to the existing SRUs and the No. 4 boiler is removed from the formula for calculating SO_2 emissions from the No. 6 boiler (EU 021). The configuration has been changed so that the No. 6 boiler exhausts from a separate stack and has a separate SO_2 emission limit.
- Several stack parameters were corrected in Appendices B and E of the permit.

Changes to No. 2 Crude Charge Heater (May 9, 2002 Application) - This application was submitted for changes to a No. 2 Crude Charge Heater (No. 5-2-B-3, EU 006). The changes include: 1) replacing existing burners with low- NO_x burners, 2) removing the capability to burn refinery fuel oil, 3) replacing convection sections of the heater to extend the life of the heater and 4) replacing the existing stack with a stack of similar dimensions. A 12-month rolling average NOx limit of 0.05 lb/MM Btu is requested in addition to the current 3-hour average NO_x limit of 0.14 lb/MM Btu. A NO_x CEM will also be installed to monitor NO_x emissions from the heater. The purpose of these new requirements is to satisfy certain requirements of the Consent Decree (Cir. No. 01-40119) lodged May 11, 2001, in the U.S. District Court for the Eastern District of Michigan. The changes are expected to significantly reduce emissions of NO_x from the unit.

This permit amendment removes refinery fuel oil as a fuel which can be burned in the No. 2 Crude Charge Heater (EU 006), establishes a 12-month rolling average NO_x limit of 0.05 lb/MM Btu and requires installation and operation of a Continuous Emission Monitor (CEM) to continuously measure NO_x emissions.

Catalyst Hoppers (Second May 9, 2002 Application) - A second May 9, 2002 minor amendment application was submitted for installation of hoppers for NO_x and SO_2 reduction catalysts. Addition of the catalysts to the Fluidizer Catalytic Cracking Unit (FCCU) to reduce NO_x and SO_2 emissions is required by the Consent Decree (Cir. No. 01-40119) lodged May 11, 2001, in the U.S. District Court for the Eastern District of Michigan. This permit amendment allows for installation of the hoppers at the facility. Each hopper will be controlled by a separate fabric filter.

Other Changes to the Permit -In addition to the above, performance testing frequencies and operational limits (based on the results of performance testing) have been established for the following emission units: EU 002/003 (GP 007), EU 004, EU 005, EU 007, EU 008, EU 009, EU 010, EU 011, EU 012, EU 013, EU 014, EU 015, EU 016, EU 017, EU 018, EU 019, EU 020, EU 021, EU 022, EU 023, EU 024, EU 025, EU 026 and EU 027.

PERMIT ACTION 007: Permit action 007 is a MPCA initiated major amendment under Minn. R. 7007.1600, subp. 1(D) – mandatory reopening that is needed in order to assure compliance with applicable requirements.

The amendment incorporates new limits into the permit. The limits have been imposed through performance testing under Minn. R. 7017.2025, subp. 3 and are already in affect for Emission Unit (EU) 022, EU 013, EU 006 and Control Equipment (CE) 005. The permit must be reopened in order to reflect the revised limits. See attached MPCA letters sent on August 16, 2001, to MPC, which set new limits in MPC's Part 70 permit based on performance testing under Minn. R. ch. 7017.

PERMIT ACTION 008: Permit action 008 is a MPCA initiated major amendment under Minn. R. 7007.1600, subp. 1(D) – mandatory reopening that is needed in order to assure compliance with applicable requirements. The amendment incorporates new limits into the permit. The limits are imposed through performance testing under Minn. R. 7017.2025, subp. 3, for Emission Unit (EU) 022, EU025 and EU026**.** The permit must be reopened in order to reflect the revised limits. See attached MPCA letters sent on November 19, 2002, and June 17, 2003, to MPC, that set new limits in MPC's Part 70 permit based on performance testing under Minn. R. ch. 7017.

The permit action also removes a permit term that is a material mistake under Minn. R. 7007.1600, subp. 1(C). The requirement to conduct performance testing for NO_x by March 31, 2003, was removed as the testing has already been conducted.

PERMIT ACTION 009: MPC submitted a permit application on August 11, 2003. In addition, a Notice of Compliance was issued by the MPCA on January 16, 2004. The changes to the permit associated with the permit application and the Notice of Compliance are summarized below.

Reconstruction of a Storage Tank and Increasing Certain Sulfur Dioxide Limits (August 11, 2003 Application) - The August 11, 2003 permit application for a major permit amendment is for reconstruction of an existing asphalt storage tank (TK 028) and for an increase in the 1-hour sulfur dioxide (SO_2) emission limits for the No. 1 and 2 sulfur recovery units (EU 019, SV 062) and the No. 3 sulfur recovery unit (EU 083, SV 071). The permit application does not request a change in the 3-hour SO_2 emission limits for EU 019 or EU 083.

Reconstruction of the storage tank causes the tank to be subject to the requirements of 40 CFR Part 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, and 40 CFR Part 60, Subpart UU, Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture. This permit action adds the storage tank (TK 028) to the permit as an emission unit which is subject to the requirements of Subparts Kb and UU.

The increase in the 1-hour SO_2 emission limit for the sulfur recovery units (EU 019 and EU 083) requires modeling to demonstrate compliance with the ambient air quality standards for SO_2. Marathon Ashland has submitted the required dispersion modeling analysis which predicts that the ambient standards for SO_2 will not be exceeded if the 1-hour SO_2 emission limits for EU 019 and EU 083 are increased. This permit action allows for the requested increase in the 1-hour SO_2 emission limits for EU 019 and EU 083 from 15.0 lb/hr to 45.0 lb/hr of SO_2.

January 16, 2004 Notice of Compliance - On January 16, 2004, a Notice of Compliance was issued by the MPCA as a result of a performance test conducted on Heaters 38B-1 and 38B-1 (EU 028 and EU 029). Based upon the test results, a heater duty load limit of 88.3 million Btu/hr for the heaters is added to the permit.

PERMIT ACTION 010: The Permittee submitted permit applications on August 26, 2002, and February 2, 2004. The applications are described below.

August 26, 2002 Permit Application - The August 26, 2002, permit application is for installation of a temporary natural gas-fired boiler with a maximum heat input capacity of 88.4 million Btu/hr. This permit action allows for the installation and operation of one temporary boiler at the facility.

February 2, 2004 Permit Application - The February 2, 2004, permit application requests changes to conditions in the existing Part 70 permit. The Part 70 permit conditions are based on permit conditions contained in May 23, 1986, and June 1, 1992, permits. This permit action changes certain conditions established in the referenced permits.

PERMIT ACTION 011: The Clean Fuels Project permit application was submitted to MPCA on December 13, 2004, as a major permit amendment (involving a NSPS modification). This project involves making physical changes to Distillate Desulfurizer (DDS – FS 026) and Heavy Distillate Hydrotreater (HDH – FS 022) process units, causing an increase in VOC fugitive emissions from this project. SO2 emissions from startup and shutdown of new reactors are vented to Flare (CE 005). In addition, other emission units at the facility go through increased utilization (debottlenecking) due to this modification; Emission units **EU 017, 019, 020, 028, 029** capacities does not change, but the projected actual emissions increase for PM, PM_{10}, NO_X, SO_2, CO, and VOC. The projected future emissions were based on Refinery Gas firing, and not Fuel Oil.

This project also involves other emission units go through increased utilization (debottlenecking); Emission units EU **001, 021**, **026**, **027**, **083** capacities does not change and there is no actual emissions increase projected from these units.

In addition, the following permit conditions related to 40 CFR § 52.21(r) were added to the permit under TF part: DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW. A Construction Authorization letter for the modification of NSPS affected facility was sent to the Permittee on February 16, 2005.

In addition, MPC also submitted a Minor Amendment application on December 30, 2004, to incorporate emission limitations (based on NSPS Subpart J, specific to EU 004) as required by the New Source Review Consent Decree, United States of America et al. V. Marathon Ashland Petroleum LLC (now known as MPC) (Civil No. 01-40119), lodged May 11, 2001 and entered August 28, 2001. This permit action incorporates the NSPS Subpart J limits for PM, SO_2, and CO. The date of compliance for each pollutant limit varies, and is dependent on the timetable agreed between EPA and MPC in Appendix I of the Consent Decree. NSPS Subpart J requirements, NSPS general provisions, and CEMS requirements are enclosed as part of Additional Appendix Material; attached to the permit.

Previously submitted Permit amendment applications (1 and 2 listed below are from *the New Source Review Consent Decree, United States of America et al. v. Marathon Ashland Petroleum LLC (MPC) (Civil No. 01-40119), lodged May 11, 2001 and entered August 28, 2001,* and 3 and 4 listed below are to comply with a judgment issued to MPC to upgrade its oily wastewater sewer system to meet the standards of New Source Performance Standards (NSPS) addressed in this permit action:

1. In a permit application dated April 29, 2004, MPC applied for incorporation of SO2 limit in the permit for GP 006 sources.
2. On January 30, 2003, MPC sent in a permit application for modification of Title V permit too implement the CO limit (of 500 ppmdv; based on NSPS Subpart J) from May 2001 Consent Decree. MPC is also required to install a CO Continuous Emission Monitoring System (CEMS). This permit incorporates the CO limit under EU 004 (FCCU); and CO CEMS requirements.

3. On July 3, 2003, MPC sent in an administrative amendment application and a notification of installation of air pollution control equipment to comply with NSPS Subpart QQQ.
4. On September 20, 2004, MPC sent in an administrative amendment application to amend the Title V permit application as MPC upgrades its oily wastewater sewer system to meet the NSPS Subpart QQQ requirements. This permit amendment incorporates NSPS QQQ requirements for all affected sources.

Administrative Amendments: MPC submitted several administrative amendment applications for extension of stack test dates for some emission units. This permit amendment revises the dates in the permit for those emission units. Details are noted in the TSD. In addition, in August 2005, Marathon requested the facility name to be change to "Marathon Petroleum Company LLC" (MPC).

PERMIT ACTION 012

This major amendment has the following changes:

i) incorporates previously permitted gas-fired heater EU 087 (maximum rating of 67.1 MM Btu/hr);

ii) revises permit conditions related to use of a process vapor burner system (back-up pollution control equipment - CE 018) temperature monitoring on the light oil truck rack – gasoline emissions unit (EU 063) and for adding new permit conditions;

iii) extends a performance test deadline in the permit for EU 021 by 120 days;

iv) revises the GP 006 (fuel combustion devices using refinery oil) annual sulfur dioxide emissions cap to 281 tons per year. In addition, Sulfur Content of Fuel limit and Barrels Per year of Refinery Oil limit were removed from the permit as the First Amendment to the NSR Consent Decree for Sulfur Dioxide (tons per year) emissions limit was finalized on November 17, 2005;

v) and allows for the addition of new Vacuum Enhanced Product Recovery (VEPR) system in the North Refinery area as part of the North Plume Remediation Project. Emissions from this change qualifies as an "Insignificant Modification". Permit conditions for this activity are listed under CE 021, CE 022, CE 023, and CE 024.

PERMIT ACTION - 013

Major Amendment Application – Many changes to the permit proposed; changes addressed in this permit includes H_2S limit spelling correction from micrograms to milligrams. Marathon applied for a permit amendment to remove H_2S CEMS (MR 047 and MR 048) from the permit as EPA approved an Alternative Monitoring Plan (a copy is attached to the TSD) for seven refinery fuel gas streams. Upon consultation with the SIP staff and the facility contacts, these two monitors were eliminated from the permit. A memo regarding the SIP applicability is enclosed to TSD. A number of Fugitive Sources (primarily VOC and HAP emissions; FS 095-121) were added in Delta system under GP 022. Mandatory Reopening – Set a duty limit for Heaters: Performance test based Process Limits and recordkeeping requirements were added for EU 001, EU 014 and EU 025.

Major Amendment – NSPS Modification (affected facility – **FS 008**) that authorizes FCC Revamp; under the Minnesota State Rules this change is a Major Amendment. EU004 will undergo physical changes and there will be no emissions increase; these physical changes do not constitute a modification as defined under the NSPS.

Other Emission Sources physically modified: FS 002, FS 009, FS 011, FS 017, FS 022, FS 063, FS 081, and FS 082;

Emission Sources undergoing increased utilization: EU 001, EU 002, EU 003, EU 005, EU 006, EU 007, EU 008, EU 009, EU 010, EU 012, EU 013, EU 014, EU 015, EU 016, EU 017, EU 018, EU 019, EU 020, EU 021, EU 022, EU 023, EU 024, EU 025, EU 026, EU 027, EU 028, EU 029, EU 083, TK 029, TK 031, TK 034, TK 037, TK 040, TK 042, TK 062, TK 063, TK 064, TK 065, TK 073, TK 074, TK 080, TK 084, and TK 122.

Administrative Amendment Applications – EU 008 is retired and the associated requirements were deleted from the permit. A second performance test date is extended by 120-days to be completed by December 13, 2006, for EU 017.

In February 2007, MPC applied for an Administrative Amendment to incorporate Benzene Waste NESHAP Subpart FF into the current permit; Per First Revised Consent Decree this incorporation must be done by September 30, 2007. In addition, Per First Revised Consent Decree, MPC will be installing a Third Stage Separator to capture PM emissions from FCCU Catalyst.

PERMIT ACTION - 014

The Project permit application was submitted to MPCA on June 12, 2007, as a moderate permit amendment. Revised forms for this amendment were sent to the MPCA on August 13, 2007.

Loading rack Vapor Combustion Unit (VCU) operates as a back-up to the existing Vapor Recovery Unit (VRU) when there is scheduled maintenance or if the VRU needs to be fixed. However, in some instances, where all of the loading racks are operating, VRU and VCU could operate simultaneously. VCU combusts the organic vapors using propane as fuel.

The Permittee requested MPCA to grant approval to begin construction of the proposed project; such approval letter copy dated September 20, 2007 is enclosed. This was an authorization to construct the VCU; MPC needs this permit amendment to start operation of the unit. MPC will have to conduct performance test to show that the New Source Performance Standards subparts J and XX and National Emissions Standards for Hazardous Air Pollutants subparts CC and R limits are met after the unit starts operation.

PERMIT ACTION - 015

MPC requested an extension of required performance test and associated CEMS Certification date for EU 081 (Wastewater Treatment Plant Thermal Oxidizer). In addition, MPC requested removing the following conditions from the current permit: a duty limit for EU 025; EU 004 performance test for particulate matter and EU 081 H_2S limits and associated monitoring requirements (MR 056). This action was issued as an administrative amendment.

PERMIT ACTION – 016

This is a major amendment for three unrelated changes at the facility.

The first change is the installation of two refinery fuel gas and natural gas-fired boilers and the addition of associated equipment in Volatile Organic Compounds (VOC) service.

The second change is the conversion of TK 085 from an external floating roof distillate oil storage tank to an internal floating roof slop oil storage tank and modification of FS 066 by the addition of pumps and valves so that FS 066 becomes an affected facility under 40 CFR pt. 60, subp. GGGa.

The third change is the revision and removal of certain Heavy Distillate Hydrotreater (HDH) charge heater (EU 017) requirements due to the 2007 burner change and fuel switch from refinery oil to refinery gas.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: **Total Facility**

What to do	Why to do it
Modeling: Any increase in SO2 emissions beyond modeled conditions associated with the emission units in the SIP shall be modeled at the new predicted SO2 emission rates to determine the impact on the NAAQS.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CHANGES NOT REQUIRING A MODIFICATION FOR THE SIP: The Owner or Operator shall make changes to the facility without obtaining a modification as long as the change does not do or result in any of the following: A. an exceedance of the limitations associated with the emission units in the SIP; or B. a physical change of the equipment that affects the stack parameters described in Appendix B, unless the physical change is being made to an emission unit allowed to burn refinery fuel oil before the physical change, and the emission unit will not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately); or C. an increase of a maximum potential sulfur dioxide emission rate of 2.28 pounds per hour at any new emission unit.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CHANGES REQUIRING A MODIFICATION FOR THE SIP: A. any modification to the design of the equipment that decreases the stack gas volumetric flow rate below that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel oil before the modification, and the unit shall not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately); B. any modification to the design of the equipment that decreases the stack gas exit temperature below that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel oil before the modification, and the unit shall not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately;	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
C. any modification to the design of the equipment that reduces the stack height below that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel oil before the modification, and the unit shall not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately); D. any modification to the design of the equipment that increases the stack exit diameter above that contained in Appendix B, unless the modification is being made to an emission unit allowed to burn refinery fuel before the modification, and the unit shall not burn any type of fuel oil after the physical change (the fuel oil supply line shall be disconnected immediately); E. any construction or modification of structures that increase the effective structural dimensions as they are used in the building wake effects algorithm in the ISC Air Dispersion Model, or its successor.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
General Operating and Maintenance Requirements for the SIP: The Owner or operator shall operate and maintain the process equipment described in Appendix B according to the parameters set forth in Appendix B. The parameters were used in the computer modeling performed to demonstrate that the SO2 maintenance area will attain compliance with the SO2 NAAQS.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Steam-Air Decoking Restrictions: The owner or operator shall not steam-air decoke more than one of the emission units listed at any one time EU002, EU003,EU005, EU006 , EU007, EU008, EU009, EU010, EU011, EU012, EU013, EU014, EU015, EU016, EU017, EU018, EU022, EU023, EU024, EU025, EU026, EU027, EU028 and EU029 at the same time.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Record keeping for Steam-Air Decoking Operations: Record the dates and time periods of each steam-air decoke event for each Emission Unit decoked.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Retain all records at the stationary source for a period of five (5) years from the date of the required monitoring, sample, measurement, or report that corresponds with a State Implementation Plan Title I Condition.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Continuous Fence Around the Boundaries of the Main Refinery Complex Property: The owner or operator shall have enclosed the boundaries of the main refinery complex property with a continuous fence, excluding access points, and shall have installed gates at each access point. The owner or operator shall thereafter keep the gates closed unless access is being controlled or authorized persons are entering or leaving the property through an access point.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Inspection, Maintenance, and Repair of the Fencing: The owner or operator shall inspect the fencing and gates once each quarter and identify any necessary maintenance. If the owner or operator determines the need for repair or maintenance of the fencing and gates, then all repairs and maintenance shall be completed as soon as reasonably possible, but no later than 30 days after the date of discovery. If the MPCA notifies the owner or operator of the need for repair or maintenance, then the owner or operator shall complete such repair or maintenance as soon as reasonably possible, but no later than 30 days after the owner or operator receives such notification.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Record of Inspection and Maintenance of the Fencing and the Gates: The owner or operator shall retain records of each inspection and of each maintenance and repair to the fencing and the gates.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 004 H2S CEMS assoc. w/ all process heaters**

Associated Items: EU 001 Boiler No. 5 5-16-B-5

EU 002 FCC Charge Heater 5-8-B-1

EU 003 Alky Isostripper Htr 5-28-B-1

EU 005 No. 2 Crude Vacuum Heater 5-5-B-1

EU 006 No. 2 Crude Charge Heater 5-2-B-3

EU 007 No. 1 Crude Vacuum Tower Heater 5-1-B-5

EU 009 No. 1 Crude Charge Htr 5-1-B-7

EU 010 Distillate Unifiner Heater 5-29-B-1&2

EU 011 Naphtha Unifiner Heater 5-3-B-1,2&3

EU 012 Platformer Reactor Charge Heater 5-3-B-4

EU 013 Platformer Interheater No. 1 5-3-B-7

EU 014 Platformer Interheater No. 2 5-3-B-8

EU 015 Isom Desulf Charge Heater 5-34-B-1

EU 016 Hot Oil Heater 5-34-B-2

EU 017 HDH Charge heater 5-32-B-1

EU 018 SGP Dehexanizer Reboiler 5-10-B-1

EU 020 No. 4 Boiler 5-16-B-4

EU 021 No. 6 Boiler 5-16-B-6

EU 022 Guard Case Reactor Heater 5-36-B-1

EU 023 Reformer Charge & No. 1 Interheaters 5-36-B-2,3,4

EU 024 No. 3 Interheater 5-36-B-6E

EU 025 No. 2 Interheater 5-36-B-6W

EU 026 DDS Reactor Charge Heater 5-37-B-1

EU 027 DDS Product Stripper Reboiler 5-37-B-2

EU 028 Hydrogen Plant Heaters 5-38-B-1

EU 029 Hydrogen Plant Heaters 5-38-B-2

EU 083 No. 3 Sulfur Recovery Unit

EU 092 Boiler 92

EU 093 Boiler 93

What to do	Why to do it
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1090, subp. 1; 40 CFR Section 60.13(e)

Facility Name: Marathon Petroleum Co LLC

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Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	CONTINUED Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1090, subp. 2; 40 CFR Section 60.13(e)
CEMS Emissions Monitoring: The owner or operator shall monitor SO2 emissions using a H2S CEMS in conjunction with fuel flow monitors.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J or subp. Ja; Minn. R. 7017.1006
Hydrogen Sulfide Content in the Refinery Gas: calibrate, operate and maintain a CEMS to determine the hydrogen sulfide content of the refinery gas to the emission units. The CEMS shall provide a continuous record of hydrogen sulfide content in ppm.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7017.1006

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 005 Hydrogen Plant Heaters**

Associated Items: CE 002 Ammonia Injection

CE 003 Catalytic Reduction

EU 028 Hydrogen Plant Heaters 5-38-B-1

EU 029 Hydrogen Plant Heaters 5-38-B-2

MR 001 H2S Monitor

MR 045 Fuel Flow Meter (gas)

MR 046 Fuel Flow Meter (gas)

SV 023

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 3.48 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50; Minn. R. 7009.0080 (most stringent, meets limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50; Minn. R. 7009.0080 (most stringent, meets limits set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR Section 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate and the H2S CEMS to measure sulfur dioxide emissions from SV 023.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

Facility Name: Marathon Petroleum Co LLC

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CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
CMS Quality Assurance/Quality Control (QA/QC): The owner or operator shall develop and follow a written QA/QC plan which cover the CMS. The plan shall be on-site, available for inspection within 30 days after permit issuance and updated as necessary. At a minimum the CMS shall be calibrated annually.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7007.0800, subp. 2

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 006 Fuel combustion devices using refinery oil**

Associated Items: EU 002 FCC Charge Heater 5-8-B-1

EU 003 Alky Isostripper Htr 5-28-B-1

EU 005 No. 2 Crude Vacuum Heater 5-5-B-1

EU 009 No. 1 Crude Charge Htr 5-1-B-7

EU 015 Isom Desulf Charge Heater 5-34-B-1

EU 016 Hot Oil Heater 5-34-B-2

EU 018 SGP Dehexanizer Reboiler 5-10-B-1

EU 020 No. 4 Boiler 5-16-B-4

EU 021 No. 6 Boiler 5-16-B-6

What to do	Why to do it
Fuel Sulfur Content and Heating Value: The Company shall demonstrate compliance with the sulfur dioxide emission limitations for the fuel burning units by obtaining the sulfur content and heating value of the refinery oil used in the emission units at the facility by sampling and analyzing the fuel.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Oil Sampling and Analysis: The Company shall collect one sample of fuel at tank side tank within 24 hours after receiving a transfer of fuel into the fuel supply tank. The sampling method shall be in accordance with a method approved by ASTM.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Oil Sampling and Analysis: The Company shall analyze the fuel oil sample to determine the sulfur content of the fuel oil. The analysis shall conform to the most current version of a method approved by ASTM.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Oil Sampling and Analysis: The Company shall analyze quarterly the fuel oil sample to determine the heating value of the fuel oil. The analysis shall conform to a method approved by ASTM.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 007 FCC Charge and Alky Isostripper Htrs**

Associated Items: EU 002 FCC Charge Heater 5-8-B-1

EU 003 Alky Isostripper Htr 5-28-B-1

MR 001 H2S Monitor

MR 009 Fuel Flow Meter(gas)

MR 011 Fuel Flow Meter (gas)

SV 002

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 64.08 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (most stringent, meets the limits set by: Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y] where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) _____ (10^6 lb-mole rg)*(520 R)*(0.7302 ft^3-atm/lb-mole R)	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) (CONTINUED)

ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where; Q = volumetric flow rate of refinery gas (ft^3/min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED
where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP) CONTINUED
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate and the H2S CEMS to measure sulfur dioxide emissions from SV 002.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
D. PERFORMANCE TESTING REQUIREMENTS	hdr
E. MONITORING	hdr

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 017 Storage Tank Heaters (applies to each)**

Associated Items: EU 031 5-999-B-62, A, B & C

EU 032 Asphalt Strg Tank Heater 5-999-B-75, A & B

EU 033 Asphalt Strg Tank Heater 5-999-B-76, A & B

EU 034 Reduced Crude Strg Tank Htr 5-999-B-82

EU 035 Asphalt Strg Tank Heater 5-999-B-83

EU 036 Distillate Strg Tank Heater 5-999-B-116

EU 037 Slurry Strg Tank Heater 5-999-B-118

EU 038 Asphalt Strg Tank Heater 5-999-B-120, A, B & C

EU 039 Asphalt Strg Tank Heater 5-999-B-127, A, B, & C

EU 040 Asphalt Strg Tank Heater #1 5-999-B-129a

EU 041 Asphalt Strg Tank Heater #2 5-999-B-129b

EU 042 Fuel Oil Strg Tank Heater 5-999-B-131

EU 043 Asphalt Strg Tank Heater 5-999-B-132, A, B, & C

EU 044 Asphalt Strg Tank Heater 5-999-B-133 A, B, & C

EU 045 Asphalt Strg Tank Heater 5-999-B-143 A, B, & C

EU 046 Asphalt Strg Tank Heater 5-999-B-147

EU 047 Asphalt Strg Tank Heater #1 5-999-B-148a

EU 048 Asphalt Strg Tank Heater #1 5-999-B-148b

EU 049 Asphalt Strg Tank Heater 5-999-B-149

EU 050 Asphalt Strg Tank Heater 5-999-B-150

EU 051 Asphalt Strg Tank Heater 5-999-B-152

EU 052 Asphalt Strg tank Heater 5-999-B-156

EU 053 Hot Oil Tracing "B" 5-999-B-Econotherm

EU 054 Hot Oil Tracing "D" 5-999-B-Hyway

EU 055 Hot Oil Tracing "C" 5-999-B-Econotherm

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn propane and or/ natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 023 Portable Diesel Engines covered include portable diesel-driven pump, compressors, generators, etc.**

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
B. OTHER LIMITS AND REQUIREMENTS	hdr

Power output of the engines: Less than or equal to 5600 hp for any single engine's power rated capacity.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
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Sulfur Content of Fuel: less than or equal to 0.05 percent by weight of diesel fuel.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)
Diesel Fuel Certification: The owner or operator shall retain written documentation of each shipment of diesel fuel oil received for the diesel engines. The written documentation shall include the following: The date the shipment was received, the sulfur content of the diesel fuel and the method used to determine the sulfur content.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation (SIP)

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **GP 032 Boilers 92 & 93**

Associated Items: EU 092 Boiler 92

EU 093 Boiler 93

MR 001 H2S Monitor

MR 057 NOx CEMS blr 92

MR 058 CO CEMS blr 92

MR 059 O2 Monitor blr 92

MR 060 NOx CEMS blr 93

MR 061 CO CEMS blr 93

MR 062 O2 Monitor blr 93

SV 081 Boiler 92

SV 082 Boiler 93

What to do	Why to do it
TITLE I SO2 SIP REQUIREMENTS	hdr
GP 032 Boilers Operating Requirement: The Permittee shall not operate EU 092 and EU 093 prior to U.S. EPA approval of the SIP revision for these boilers.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide: less than or equal to 0.025 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets requirements of Minn. R. 7011.1410, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million by volume (dry basis, corrected to 0 percent excess air) on an hourly-determined 3-hour rolling average basis. This H2S limit applies to the fuel gas combusted in GP 032 boilers.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that records the fuel flow rate at each fuel combustion device (EU 092 and EU 093).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to individually measure sulfur dioxide emissions from SV 081 and SV 082	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Recordkeeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr) for SV 081 and SV 082.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. (continued)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Permitted Fuels: Limited to refinery fuel gas (also referred to as 'fuel gas') and pipeline natural gas only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Title I Condition: to avoid major modification threshold under 40 CFR Section 52.21(b); Minn. R. 7007.3000

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

MINNESOTA STANDARDS OF PERFORMANCE	hdr
The Permittee shall monitor fuel gas H2S content with a CMS.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7011.1420, subp. 2(B)

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 001 Boiler No. 5 5-16-B-5**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 008 Fuel Flow Meter (gas)

SV 001

What to do	Why to do it
Shutdown: due 180 days after Initial Startup of both GP 032 boilers (EU 092 or EU 093), or 60 days after both GP 032 boilers achieve maximum operating rate, whichever comes first. This shutdown requirement applies to EU 001. Startup as defined at Section 60.2 means the setting in operation of an affected facility for any purpose, which for the purposes of EU 092 and EU 093 means the initial combustion of fuel for any purpose.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.08 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that records the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 001.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. (continued)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
D. PERFORMANCE TESTING REQUIREMENTS	hdr

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 004 FCC Regenerator 5-8-F-5**

Associated Items: CE 001 Centrifugal Collector - Medium Efficiency

MR 002 Opacity COMS

MR 052 SO2 CEMS

MR 053 O2 Monitor

MR 054 NOx CEMS

MR 055 CO CEMS

SV 003

What to do	Why to do it
A. POLLUTANT LIMITS - NSPS Subpart J based limits for PM, SO2, and CO have different dates of compliance or extensions to dates of Compliance, as allowed by EPA.	hdr
Sulfur Dioxide: less than or equal to 793.65 lbs/hour using 3-hour Rolling Average The Company shall use CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)

Facility Name: Marathon Petroleum Co LLC

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B. OTHER LIMITS AND REQUIREMENTS	hdr
C. CEMS REQUIREMENTS	hdr
Sulfur Dioxide Emissions Monitoring: calibrate, operate and maintain SO2 Continuous Emissions Monitoring Systems (CEMS);	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1006
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
For Sulfur Dioxide CEMS - Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 005 No. 2 Crude Vacuum Heater 5-5-B-1**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 013 Fuel Flow Meter (gas)

MR 014 Fuel Flow Meter(oil)

SV 004

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 48.60 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limit set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y] where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) _____ (10^6 lb-mole rg)*(520 R)*(0.7302 ft^3-atm/lb-mole R)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where; Q = volumetric flow rate of refinery gas (ft^3/min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 004.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 006 No. 2 Crude Charge Heater 5-2-B-3**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 015 Fuel Flow Meter (gas)

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 34.0 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.2834 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas and natural gas only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Consent Decree (Cir. No. 01-40119) lodged May 11, 2001 in the U.S. District Court for the Eastern District of Michigan
Fuel Restrictions: the refinery gas burned must: (1) have a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) comply with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > 1.88 * (a) where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/MM Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) $\frac{}{\text{(10^6 lb-mole rg)*(520 R)*(0.7302 ft^3-atm/lb-mole R)}}$ ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (MM Btu/ft^3 @ 60 degrees F)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 005..	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 007 No. 1 Crude Vacuum Tower Heater 5-1-B-5**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 017 Fuel Flow Meter (gas)

MR 018 Reserved(no longer use oil)

SV 006

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.2 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIRMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, and/or natural gas only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 006.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 009 No. 1 Crude Charge Htr 5-1-B-7**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 021 Fuel Flow Meter (gas)

MR 022 Fuel Flow Meter (oil)

SV 007

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 52.20 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
.	
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y] where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) _____ (10^6 lb-mole rg)*(520 R)*(0.7302 ft^3-atm/lb-mole R)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where; Q = volumetric flow rate of refinery gas (ft^3/min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 007.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 010 Distillate Unifiner Heater 5-29-B-1&2**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 023 Fuel Flow Meter (gas)

SV 008

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.41 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7100.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

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Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 008.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 011 Naphtha Unifiner Heater 5-3-B-1,2&3**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 024 Fuel Flow Meter (gas)

SV 009

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.95 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 009.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1)
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance shedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 012 Platformer Reactor Charge Heater 5-3-B-4**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 025 Fuel Flow Meter (gas)

SV 010

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.95 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 010.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 013 Platformer Interheater No. 1 5-3-B-7**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 026 Fuel Flow Meter (gas)

SV 011

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.68 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 011.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 014 Platformer Interheater No. 2 5-3-B-8**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 027 Fuel Flow Meter (gas)

SV 012

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.08 lbs/hour using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average .	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: annually calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 012.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 015 Isom Desulf Charge Heater 5-34-B-1**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 028 Fuel Flow Meter (gas)

MR 029 Fuel Flow Meter (oil)

SV 013

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 19.35 lbs/hour using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y] where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) $\frac{}{(10^6 \text{ lb-mole rg})*(520 \text{ R})*(0.7302 \text{ ft}^3\text{-atm/lb-mole R})}$	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where; Q = volumetric flow rate of refinery gas (ft^3/min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED

where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTIINUED
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions for SV 013.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 016 Hot Oil Heater 5-34-B-2**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 030 Fuel Flow Meter (gas)

MR 031 Fuel Flow Meter (oil)

SV 013

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 76.50 lbs/hour using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y] where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) $\frac{}{(10^6 \text{ lb-mole rg})*(520 \text{ R})*(0.7302 \text{ ft}^3\text{-atm/lb-mole R})}$	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where; Q = volumetric flow rate of refinery gas (ft^3/min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED

where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 013.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 017 HDH Charge heater 5-32-B-1**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 032 Fuel Flow Meter (gas)

MR 063 NOx CEMS

MR 064 O2 CEMS

SV 014

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 2.97 lbs/hour using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide: less than or equal to 0.025 lbs/million Btu heat input	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets limit set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn only refinery gas and/or natural gas.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 014.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Recordkeeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
D. CEMS REQUIREMENTS	hdr
Emissions Monitoring: The Permittee shall use a CEMS to measure EU 017 NOx emissions. (August 31, 2005 First Revised Consent Decree US District Court Eastern District of Michigan).	Title I Condition: CAAA of 1990; Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1006

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 018 SGP Dehexanizer Reboiler 5-10-B-1**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 033 Fuel Flow Meter (gas)

MR 034 Fuel Flow Meter (oil)

SV 015

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 36.0 lbs/hour using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.9 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Fuel Restrictions: authorized to burn refinery gas and refinery oil as long as the combination (1) has a sulfur content and heating value less than or equal to that corresponding to SO2 emissions of 0.90 lb/MMBtu and (2) complies with the lbs SO2/hr limit. The company shall determine the sulfur dioxide emissions using the following calculation: W > [1.88*(a)*(x) + 2.00*(b)*(y)] / [x+y] where; w = the emission limit (0.9 lbs SO2/MMBtu) 1.88 = MW(SO2)/MW(H2S) = 64.06/34.08 a = fraction of H2S in refinery gas (lbs/Btu) = (0.0898)*(ppmv)/(HHV-rg) where; 0.0898 = (1lb-mole H2S)*(34.08 lb H2S/lb-mole H2S)*(1 atm) $\frac{}{\text{(10^6 lb-mole rg)*(520 R)*(0.7302 ft^3-atm/lb-mole R)}}$	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
ppmv = parts per million by volume of H2S in refinery gas HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) x = flow rate of refinery gas (MMBtu) = (Q)*(HHV-rg)*(60) where; Q = volumetric flow rate of refinery gas (ft^3/min @ 60 degrees F) HHV-rg = high heating value for refinery gas (Btu/ft^3 @ 60 degrees F) 60 = minutes/hour 2.00 = MW (SO2)/MW(S) = 64.06/32.06 b = fraction of S in refinery oil (bs/Btu) = (ppmv)*(density)/HHV-ro)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED

Facility Name: Marathon Petroleum Co LLC

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where; ppmw = parts per million by weight of S in refinery oil (lb/lb) density = density of refinery oil (Btu/gal @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) y = flow rate of refinery oil (MMBtuh) = (q)*(HHV-ro)*(60) where; q = volumetric flow rate of refinery oil (gal/min @ 60 degrees F) HHV-ro = high heating value for refinery oil (Btu/gal @ 60 degrees F) 60 = 60 minutes/hour	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y CONTINUED
Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 015.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 019 Sulfur Recovery Unit (SRU 2)**

Associated Items: CE 004 SCOT Incinerator

GP 026 No. 2 SRU, Hydrogen Plant Heaters and Distillate Desulfurization Heaters

MR 004 SO2 CEMS

MR 005 Oxygen monitor

SV 062

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 15.0 lbs/hour using 3-hour Rolling Average . The company shall use the CEMS monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by 40 CFR pt 50.4; Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction. The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
B. OTHER LIMITS AND REQUIREMENTS	hdr
Sulfur Dioxide: The company shall use the following equation to calculate sulfur dioxide emissions: M(SO2) = (3.545 x 10^ -6 x [1.098 x A + 9.989 x C] x X)/ (21 - E) where M(SO2) = mass flow of SO2 from the stack (lbs/hr) A = volumetric flow rate of SCOT tail gas (scf/hr) C = volumetric flow rate of fuel gas to the SCOT incinerator (scf/hr) E = excess oxygen in the stack gas (percent) X = concentration of SO2 in the stack gas (ppm, wet basis)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
SRU 1, SRU 2 and SRU 3 (EU 083) shall not be bypassed at the same time except in the case of an emergency where the plant and personnel safety are at risk. If this occurs, the Company shall follow Minn. R. 7019.1000.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CEMS REQUIREMENTS	hdr
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

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Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Monitoring: calibrate, operate and maintain Continuous Emissions Monitoring Systems (CEMS) which measures sulfur dioxide emissions and an oxygen CEMS to correct the data for excess air.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR Section 60.15(a); 40 CFR Section 60.105 (a)(5); Minn. R. 7017.1006

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 020 No. 4 Boiler 5-16-B-4**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 035 Fuel Flow Meter (gas)

MR 036 Fuel Flow Meter (oil)

SV 016

What to do	Why to do it
Shutdown: due 180 days after Initial Startup of both GP 032 boilers (EU 092 or EU 093), or 60 days after both GP 032 boilers achieve maximum operating rate, whichever comes first. This shutdown requirement applies to EU 020. Startup as defined at Section 60.2 means the setting in operation of an affected facility for any purpose, which for the purposes of EU 092 and EU 093 means the initial combustion of fuel for any purpose.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 36.36 lbs/hour using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide: The company shall use the following equation to calculate sulfur dioxide emissions: M(SO2) = (3.545 x 10^ -6 x [67197 x B + 9.989 x C] x X)/ (21 - E) where M(SO2) = mass flow of SO2 from the stack (lbs/hr) B = volumetric flow rate of refinery fuel oil consumed by the No.4 boiler (barrels/hr) C = volumetric flow rate of fuel gas to No. 4 boiler (scf/hr) E = excess oxygen in the stack gas (percent) X = concentration of SO2 in the stack gas (ppm, wet basis)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
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C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 016.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 021 No. 6 Boiler 5-16-B-6**

Associated Items: GP 004 H2S CEMS assoc. w/ all process heaters

GP 006 Fuel combustion devices using refinery oil

MR 001 H2S Monitor

MR 037 Fuel Flow Meter (gas)

MR 038 Fuel Flow Meter (oil)

SV 016

What to do	Why to do it
Shutdown: due 180 days after Initial Startup of both GP 032 boilers (EU 092 or EU 093), or 60 days after both GP 032 boilers achieve maximum operating rate, whichever comes first. This shutdown requirement applies to EU 021. Startup as defined at Section 60.2 means the setting in operation of an affected facility for any purpose, which for the purposes of EU 092 and EU 093 means the initial combustion of fuel for any purpose.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 36.36 lbs/hour using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Sulfur Dioxide: less than or equal to 0.90 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y (most stringent, meets the limits set by Minn. R. 7011.1405, subp. 2)
Hydrogen Sulfide: less than or equal to 162 parts per million Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: authorized to burn refinery gas, natural gas and/or refinery oil only.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide: The company shall use the following equation to calculate sulfur dioxide emissions: M(SO2) = (3.545 x 10^ -6 x [67197 x B + 9.989 x C] x X)/ (21 - E) where M(SO2) = mass flow of SO2 from the stack (lbs/hr) B = volumetric flow rate of refinery fuel oil consumed by the No. 6 boiler (barrels/hr) C = volumetric flow rate of fuel gas to No. 6 boiler (scf/hr) E = excess oxygen in the stack gas (percent) X = concentration of SO2 in the stack gas (ppm, wet basis)	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Record keeping of fuel: The owner or operator shall record the time period when burning fuel oil.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 017.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y; Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: State Implementation Plan (SIP) for SO2 NAAQS, 40 CFR pt. 50; 40 CFR pt. 52, subp. Y

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 022 Guard Case Reactor Heater 5-36-B-1**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 039 Fuel Flow Meter (gas)

SV 017

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.70 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 017.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 023 Reformer Charge & No. 1 Interheaters 5-36-B-2,3,4**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 040 Fuel Flow Meter (gas)

SV 018

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 2.10 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by Minn. R. 7011.1410, subp. 3, Item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions form SV 018.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 024 No. 3 Interheater 5-36-B-6E**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 041 Fuel Flow Meter (gas)

SV 019

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 0.63 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas in the unit only.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 019.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 025 No. 2 Interheater 5-36-B-6W**

Associated Items: GP 002 Refinery Heaters 11-14 & 22-25

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 043 Fuel Flow Meter (gas)

SV 020

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 1.05 lbs/hour using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); (most stringent, meets the limits set by: Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 020.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 026 DDS Reactor Charge Heater 5-37-B-1**

Associated Items: CE 006 Flue Gas Recirculation

CE 007 Low Nox Burners

GP 004 H2S CEMS assoc. w/ all process heaters

GP 026 No. 2 SRU, Hydrogen Plant Heaters and Distillate Desulfurization Heaters

MR 001 H2S Monitor

MR 042 Fuel Flow Meter (gas)

SV 021

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than 1.38 lbs/hour using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP); 40 CFR Section 50.5; Minn. R. 7009.0080 (most stringent; meets the limits set by 40 CFR pt. 60, subp. J; Minn. R. 7011.1410, subp. 3 (A))
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP), 40 CFR Section 50.5; Minn. R. 7009.0080; (most stringent, meets the limits set by: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410, subp. 3 (A))
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMS)s that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 021.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 027 DDS Product Stripper Reboiler 5-37-B-2**

Associated Items: CE 008 Flue Gas Recirculation

CE 009 Low Nox Burners

GP 004 H2S CEMS assoc. w/ all process heaters

GP 026 No. 2 SRU, Hydrogen Plant Heaters and Distillate Desulfurization Heaters

MR 001 H2S Monitor

MR 044 Fuel Flow Meter (gas)

SV 022

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than 0.78 lbs/hour using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP); 40 CFR Section 50.5; 40 CFR pt. 60, subp. J; Minn. R. 7009.0080
Sulfur Dioxide: less than or equal to 0.03 lbs/million Btu heat input using 3-hour Rolling Average	Title I Condition: MN State Implementation Plan (SIP), 40 CFR Section 50.5; Minn. R. 7009.0080; (most stringent, meets the limits set by: 40 CFR pt. 60, subp. J; Minn. R. 7011.1410, subp. 3, item A)
Hydrogen Sulfide: less than or equal to 162 parts per million using 3-hour Average Fuel Restriction: The company shall not burn refinery gas with a hydrogen sulfide content in excess of 162 ppm as an average for any consecutive 3-hour period.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR pt. 60, subp. J
B. OTHER LIMITS AND REQUIREMENTS	hdr
Fuel Restriction: Burn refinery gas and/or natural gas only in the unit.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CMS REQUIREMENTS	hdr
Fuel Flowrate: calibrate, operate and maintain Continuous Monitoring Systems (CMSs) that record the fuel flow rate at each fuel combustion device.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Sulfur Dioxide Emissions: The owner or operator shall use the combination of the fuel flowrate CMS and the H2S CEMS to measure sulfur dioxide emissions from SV 022.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide Emissions Record keeping: The owner or operator shall maintain records of the calculated SO2 emissions in pounds per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 056 Fire Hall Diesel Engine**

Associated Items: SV 052

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
B. OTHER LIMITS AND REQUIREMENTS	hdr
Sulfur Content of Fuel: less than or equal to 0.05 percent by weight of diesel fuel.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50
Diesel Fuel Certification: The owner or operator shall retain written documentation of each shipment of diesel fuel oil received for the diesel engines. The written documentation shall include the following information: the sulfur content of the diesel fuel and the method used to determine the sulfur content.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50
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TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 057 Lagoon Diesel Engine**

Associated Items: SV 053

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
B. OTHER LIMITS AND REQUIREMENTS	hdr
Sulfur Content of Fuel: less than or equal to 0.05 percent by weight of diesel fuel.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50
Diesel Fuel Certification: The owner or operator shall retain written documentation of each shipment of diesel fuel oil received for the diesel engines. The written documentation shall include the following information: the sulfur content of the diesel fuel and the method used to determine the sulfur content.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 060 Boiler House Diesel**

Associated Items: SV 054

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
B. OTHER LIMITS AND REQUIREMENTS	hdr
Sulfur Content of Fuel: less than or equal to 0.05 percent by weight of diesel fuel.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)
Diesel Fuel Certification: The owner or operator shall retain written documentation of each shipment of diesel fuel oil received for the diesel engines. The written documentation shall include the following information: the sulfur content of the diesel fuel and the method used to determine the sulfur content.	Title I Condition: SIP for SO2 NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP)

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **EU 083 No. 3 Sulfur Recovery Unit**

Associated Items: CE 017 SCOT Incinerator

GP 004 H2S CEMS assoc. w/ all process heaters

MR 001 H2S Monitor

MR 050 SO2 CEMS

MR 051 O2 Monitor

SV 071 No. 3 SRU/No. 3 SCOT Tail Gas Unit

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Sulfur Dioxide: less than or equal to 15.0 lbs/hour using 3-hour Rolling Average . The company shall use the CEMS to monitor the sulfur dioxide emissions in order to calculate pounds of sulfur dioxide per hour (lb/hr).	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50; Title I Condition: Minn. R. 7009.0020 (to not cause or contribute to a violation of the State and Federal 3-hr & 24-hr SO2 ambient air quality standards)
B. OTHER LIMITS AND REQUIREMENTS	hdr
Sulfur Dioxide: The company shall calculate and record sulfur dioxide emissions using the following equation: M(SO2) = (3.545 x 10^ -6 x [1.098 x A + 9.989 x C] x X) / (21 - E) where: M(SO2) = mass flow rate of SO2 from stack (lb/hr) A = volumetric flow rate of No. 3 SCOT tail gas (scf/hr) C = volumetric flow rate of fuel gas to the No. 3 SCOT incinerator (scf/hr) X = concentration of SO2 in stack gas (ppm, wet basis) E = excess oxygen in the stack gas (percent)	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50 and MN State Implementation Plan (SIP)
C. CEMS REQUIREMENTS	hdr
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Acceptable monitor downtime includes reasonable periods due to the following causes: A. damages to the monitoring system including Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50 and MN Implementation Plan (SIP); Minn. R. 7017.1090, subp. 1 CONTINUED
Sulfur Dioxide and Oxygen Monitoring: calibrate, operate and maintain Continuous Emissions Monitoring Systems (CEMS) which measure sulfur dioxide emissions and an oxygen CEMS to correct the data for excess air. The span values for the monitors are 500 ppm sulfur dioxide and 10 percent oxygen.	Title I Condition: SIP for SO2 NAAQS, 40 CFR pt. 50 and MN State Implementation Plan (SIP); 40 CFR Section 60.15(a); 40 CFR Section 60.105(a)(5); Minn. R. 7017.1006

Facility Name: Marathon Petroleum Co LLC

Permit Number: 16300003 - 016

Subject Item: **MR 049 H2S Monitor**

Associated Items: EU 081 WWTP Thermal Oxidizer

EU 082 WWTP SBCs

What to do	Why to do it
CEMS Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Title I Condition: SIP for SO2NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. pt. 7007.0800, subp. 2; Minn. R. 7017.1090, subp. 6; 40 CFR Section 60.13 (e), subp. 6
Acceptable monitor downtime includes reasonable periods due to the following causes: A. damage to the monitoring system due to Acts of God such as lightning strikes, tornadoes, or floods which render the monitor inoperative; B. sudden and not reasonably preventable breakdowns; C. scheduled monitor maintenance based upon equipment manufacturer's recommended maintenance schedule which cannot reasonably be conducted when the emission unit is not operating; or D. unavoidable monitor downtime in order to conduct daily drift checks, calibration error audits, relative accuracy test audits, linearity checks, and cylinder gas audits required by a compliance document, applicable requirement, or by request of the Commissioner.	Title I Condition: SIP for SO2NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. pt. 7007.0800, subp. 2; Minn. R. 7017.1090, subp. 6; 40 CFR Section 60.13 (e), subp. 6 CONTINUED
Hydrogen Sulfide Content in the Refinery Gas: calibrate, operate and maintain a CEMS to determine the hydrogen sulfide content of the refinery gas to the emission units. The CEMS shall provide a continuous record of hydrogen sulfide content in ppm.	Title I Condition: SIP for SO2NAAQS 40 CFR pt. 50 and MN State Implementation Plan (SIP); Minn. R. 7017.1006

APPENDIX MATERIAL
Facility Name: Marathon Petroleum Co LLC
Permit Number: 16300003-016

Appendix B - Title I Condition: SIP for SO2 NAAQS

May 2009 SO2 NAAQS Modeling Parameters

				NAD 83 Easting (X)	NAD 83 Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Short Term	Annual
Stack ID	EU ID	Description	MAP ID	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)
SV001	EU001	No. 5 Boiler	5-16-B-5	499670	4966454	222.01	15.24	505.4	10.99	0.91	0.136	0.136
SV002	EU002	FCC Charge Heater	5-8-B-1	499740.91	4966562.5	225.41	30.49	790.9	8.11	1.83	8.074	8.074
	EU003	Alkylation Isostripper Reboiler (Heater)	5-28-B-1									
SV003	EU004	FCC Regenerator	5-8-F-5	499659.31	4966592.5	222.49	65	477.6	26.68	1.19	99.998	99.998
SV004	EU005	No. 2 Crude Unit Vacuum Heater	5-5-B-1	499518.69	4966401.5	217.36	48.78	633.2	13.13	1.07	6.123	6.123
SV005	EU006	No. 2 Crude Unit Charge Heater	5-2-B-3	499517.41	4966432.5	217.4	56.44	477.6	7.13	2.29	4.284	4.284
SV006	EU007	No. 1 Crude Vacuum Tower Heater	5-1-B-5	499587.91	4966420.5	220.15	30.49	810.9	17.1	1.01	0.151	0.151
SV007	EU009	No. 1 Crude Charge Heater	5-1-B-7	499592.5	4966369.5	219.79	65	449.8	3.41	2.29	6.577	6.577
SV008	EU010	Distillate Unifier Heater	5-29-B-1&2	499787.09	4966582	225.99	30.49	810.9	17.1	1.01	0.178	0.178
SV009	EU011	Naphtha Unifier Heater	5-3-B-1, 2 & 3	499765.31	4966584	225.8	30.49	616.5	5.36	1.92	0.246	0.246
SV010	EU012	Platform Reactor Charge Heater	5-3-B-4	499771.19	4966585.5	225.84	30.49	544.3	4.66	1.92	0.246	0.246
SV011	EU013	Platform Interheater No. 1	5-3-B-7	499781.59	4966585.5	226.04	30.49	549.8	4.05	1.92	0.212	0.212
SV012	EU014	Platform Interheater No. 2	5-3-B-8	499792.69	4966582.5	225.83	36.59	477.6	4.36	1.52	0.136	0.136
SV013	EU015	Isom Desulfurizer Charge Heater	5-34-B-1	499879.41	4966582.5	225.6	60.67	422	3.51	2.13	12.077	12.077
	EU016	Hot Oil Heater	5-34-B-2									
SV014	EU017	HDH Charge Heater	5-32-B-1	499843.5	4966584	225.5	45.73	477.6	5.43	1.68	0.374	0.374
SV015	EU018	SGP Dehexanizer Reboiler	5-10-B-1	499848.81	4966517.5	225.6	45.73	616.5	4.42	1.62	4.536	4.536
SV016	EU020	No. 4 Boiler	5-16-B-4	499671.59	4966439.5	222.01	65	672	12.32	1.43	9.163	9.163
	EU021	No. 6 Boiler	5-16-B-6									
SV017	EU022	Guard Case Reactor Heater	5-36-B-1	499886.69	4966491.5	225.6	22.56	560.9	8.39	1.4	0.214	0.214
SV018	EU023	Reformer Charge & No. 1 Interheaters	5-36-B-2, 3,4	499886.5	4966485	225.6	22.56	505.4	12.31	1.22	0.265	0.265
SV019	EU024	No. 3 Interheater	5-36-B-6E	499890.19	4966498.5	225.6	30.49	552.6	4.02	1.22	0.079	0.079
SV020	EU025	No. 2 Interheater	5-36-B-6W	499885	4966498.5	225.6	30.49	552.6	6.71	1.22	0.132	0.132
SV021	EU026	DDS Reactor Charge Heater	5-37-B-1	499956.31	4966593	225.5	53.35	522	3.75	1.73	0.174	0.174
SV022	EU027	DDS Product Stripper Reboiler	5-37-B-2	499946.09	4966593	225.57	53.35	522	2.32	1.65	0.098	0.098
SV023	EU028	Hydrogen Plant Heaters	5-38-B-1	499759.69	4966501	225.92	30.49	477.6	13.72	1.37	0.438	0.438

				NAD 83 Easting (X)	NAD 83 Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Short Term	Annual
Stack ID	EU ID	Description	MAP ID	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)
	EU029	Hydrogen s Plant Heaters	5-38-B-2									
SV025A	EU031	Asphalt Storage Tank (TK027) Heater	5-999-B-62-A	499723.41	4966368.5	223.11	13.11	588.7	0.001	0.25	0.0025	0.0025
SV025B	EU031	Asphalt Storage Tank (TK027) Heater	5-999-B-62-B	499724.5	4966364	223.13	13.11	588.7	0.001	0.25	0.0025	0.0025
SV025C	EU031	Asphalt Storage Tank (TK027) Heater	5-999-B-62-C	499727.41	4966360.5	223.19	13.11	588.7	0.001	0.25	0.0025	0.0025
SV026A	EU032	Asphalt Storage Tank (TK025) Heater	5-999-B-75-A	499699.41	4966121	222.12	14.02	588.7	0.001	0.25	0.0025	0.0025
SV026B	EU032	Asphalt Storage Tank (TK025) Heater	5-999-B-75-B	499706.09	4966120	222.39	14.02	588.7	0.001	0.25	0.0025	0.0025
SV027A	EU033	Asphalt Storage Tank (TK026) Heater	5-999-B-76-A	499647.19	4966121	220.68	14.02	588.7	0.001	0.25	0.0025	0.0025
SV027B	EU033	Asphalt Storage Tank (TK026) Heater	5-999-B-76-B	499654.19	4966118	220.83	14.02	588.7	0.001	0.25	0.0025	0.0025
SV028	EU034	Reduced Crude Storage Tank (TK008) Heater	5-999-B-82	499661.91	4966372.5	222.04	9.76	588.7	0.001	0.25	0.0025	0.0025
SV029	EU035	Asphalt Storage Tank (TK007) Heater	5-999-B-83	499623.31	4966388	220.81	9.45	588.7	0.001	0.25	0.0025	0.0025
SV031	EU037	Slurry Storage Tank (TK046) Heater	5-999-B-118	499961.91	4966229	226.05	14.02	588.7	0.001	0.25	0.0025	0.0025
SV032A	EU038	Asphalt Storage Tank (TK049) Heater	5-999-B-120-A	499970.31	4966146.5	226.14	13.11	588.7	0.001	0.25	0.0025	0.0025
SV032B	EU038	Asphalt Storage Tank (TK049) Heater	5-999-B-120-B	499977.91	4966143	226.1	13.11	588.7	0.001	0.25	0.0025	0.0025
SV032C	EU038	Asphalt Storage Tank (TK049) Heater	5-999-B-120-C	499984	4966143	226.1	13.11	588.7	0.001	0.25	0.0025	0.0025
SV033A	EU039	Asphalt Storage Tank (TK047) Heater	5-999-B-127-A	500020.59	4966226.5	226.65	14.02	588.7	0.001	0.25	0.0025	0.0025
SV033B	EU039	Asphalt Storage Tank (TK047) Heater	5-999-B-127-B	500022	4966223.5	226.6	14.02	588.7	0.001	0.25	0.0025	0.0025
SV033C	EU039	Asphalt Storage Tank (TK047) Heater	5-999-B-127-C	500025	4966219	226.69	14.02	588.7	0.001	0.25	0.0025	0.0025
SV034	EU040	Asphalt Storage Tank (TK050) Heater	5-999-B-129a	500056.69	4966173.5	226.56	14.02	588.7	0.001	0.25	0.0025	0.0025
SV035	EU041	Asphalt Storage Tank (TK050) Heater	5-999-B-129b	500026.09	4966147	226.3	15.24	810.9	0.001	0.36	0.0038	0.0038
SV036	EU042	Fuel Oil Storage Tank (TK051) Heater	5-999-B-131	500079.5	4966153.5	226.3	12.8	588.7	0.001	0.25	0.0025	0.0025
SV037A	EU043	Asphalt Storage Tank (TK028) Heater	5-999-B-132-A	499723.31	4966326	223	13.11	588.7	0.001	0.25	0.0025	0.0025
SV037B	EU043	Asphalt Storage Tank (TK028) Heater	5-999-B-132-B	499727.59	4966315.5	223.12	13.11	588.7	0.001	0.25	0.0025	0.0025
SV037C	EU043	Asphalt Storage Tank (TK028) Heater	5-999-B-132-C	499725.41	4966318.5	223.05	13.11	588.7	0.001	0.25	0.0025	0.0025
SV038A	EU044	Asphalt Storage Tank (TK030) Heater	5-999-B-133-A	499721.09	4966238.5	222.76	14.02	588.7	0.001	0.25	0.0025	0.0025
SV038B	EU044	Asphalt Storage Tank (TK030) Heater	5-999-B-133-B	499723.69	4966230.5	222.82	14.02	588.7	0.001	0.25	0.0025	0.0025
SV038C	EU044	Asphalt Storage Tank (TK030) Heater	5-999-B-133-C	499726.31	4966227.5	222.9	14.02	588.7	0.001	0.25	0.0025	0.0025
SV039C	EU045	Asphalt Storage Tank (TK032) Heater	5-999-B-143-A	499721.19	4966142	222.76	16.46	588.7	0.001	0.36	0.0025	0.0025
SV039A	EU045	Asphalt Storage Tank (TK032) Heater	5-999-B-143-B	499722.69	4966138.5	222.79	16.46	588.7	0.001	0.36	0.0025	0.0025
SV039B	EU045	Asphalt Storage Tank (TK032) Heater	5-999-B-143-C	499725.5	4966135.5	222.87	16.46	588.7	0.001	0.36	0.0025	0.0025
SV040	EU046	Asphalt Storage Tank Heater	5-999-B-147	499623.81	4966411.5	220.7	16.46	588.7	0.001	0.25	0.0025	0.0025
SV041	EU047	Asphalt Storage Tank (TK048) Heater	5-999-B-148a	500118.5	4966239.5	226.69	12.5	588.7	0.001	0.25	0.0038	0.0038
SV042	EU048	Asphalt Storage Tank (TK048) Heater	5-999-B-148b	500082.31	4966219	226.6	14.02	588.7	0.001	0.3	0.0025	0.0025
SV043	EU049	Asphalt Storage Tank Heater	5-999-B-149	499623	4966318	220.3	14.02	588.7	0.001	0.3	0.0025	0.0025

Facility Name: Marathon Petroleum Co LLC
Permit Number: 16300003-016

				NAD 83 Easting (X)	NAD 83 Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Short Term	Annual
Stack ID	EU ID	Description	MAP ID	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)
SV044	EU050	Asphalt Storage Tank Heater	5-999-B-150	499670.19	4966365	222.03	14.02	588.7	0.001	0.3	0.0025	0.0025
SV045	EU051	Asphalt Storage Tank Heater	5-999-B-152	499683.19	4966388.5	222.8	7.93	588.7	0.001	0.3	0.0025	0.0025
SV046	EU052	Asphalt Storage Tank (TK011) Heater	5-999-B-156	499659.91	4966412.5	221.95	7.93	588.7	0.001	0.3	0.0025	0.0025
SV047	EU053	Hot Oil Tracing B	5-999-B-Econotherm	499668.59	4966421	222.14	7.93	588.7	0.001	0.3	0.0113	0.0113
SV048	EU054	Hot Oil Tracing D	5-999-B-Hiway	499956.19	4966222	226.12	7.93	500.4	0.001	0.15	0.0025	0.0025
SV049	EU055	Hot Oil Tracing C	5-999-B-Econotherm	499953.81	4966193	226.29	3.96	500.4	0.001	0.15	0.0113	0.0113
SV052	EU056	Fire Hall Diesel		499841.5	4966672.5	225.6	4.57	500.4	0.001	0.1	0.0176	0.0010
SV053	EU057	Lagoon Diesel		499446.41	4966052.5	212.65	4.57	500.4	0.001	0.1	0.0176	0.0010
SV054	EU058	Boiler House Diesel Engine		499623.69	4966449.5	220.82	4.57	500.4	0.001	0.1	0.0176	0.0010
SV056	EU075	Ford Boiler House Engine (Gasoline)		499640.09	4966455	221.24	4.57	500.0	0.001	0.1	0.0126	0.0007
SV062	EU019	SRU/SCOT Incinerator	5-31-B-4	499654	4966440	221.46	45.73	810.9	4.4	1.22	5.670	5.670
SV064	EU080	Alky Mitigation Backup Diesel		499886.31	4966677.5	225.6	9.14	677.6	65.3	0.25	0.0605	0.0030
SV065	EU081	Wastewater Treatment Plant Thermal Oxidizer		499448.19	4966462.5	210.58	27.43	1033.2	8.55	1.07	1.129	1.129
SV071	EU083	#3 SRU/#3 SCOT		499587.19	4966492	220.53	45.73	810.9	4.4	1.22	5.670	1.136
SV074		Loadrack (EU063) Portable Oxidizer (CE018)		499835.5	4966840	225.6	3.86	699.8	0.73	2.13	0.227	0.227
SV075	EU086	Temporary Boiler		499653.91	4966458.5	221.57	3.05	422.0	10	0.6096	0.0066	0.0066
SV076	EU087	New Heater 1-B-6		499570.19	4966372.5	219.2	42.37	588.7	4.015	1.829	0.252	0.252
SV080	EU091	Loadrack (EU063) John Zink VCU (CE026)		499832.30	4966842.77	225.6	18.29	1255.4	17.22	2.934	0.146	0.146
SV081	EU092	New Boiler 92 (Listed as MPC091)		499689.53	4966428.50	222.8	18.53	435.9	9.44	1.676	0.466	0.466
SV082	EU093	New Boiler 93 (Listed as MPC092)		499691.06	4966430.02	222.8	18.53	435.9	9.44	1.676	0.466	0.466
IACS1		Instrument Air, Unit 1		499645.31	4966541	222.06	2.74	620.9	60	0.15	0.0227	0.0011
IACS2		Instrument Air, Unit 2		499645.09	4966546	222.08	2.74	620.9	60	0.15	0.0227	0.0011
FCCBS1		FCC Unit Blower, Unit No. 1		499634.81	4966547	221.84	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS2		FCC Unit Blower, Unit No. 2		499635.31	4966542	221.84	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS3		FCC Unit Blower, Unit No. 3		499635.5	4966536	221.85	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS4		FCC Unit Blower, Unit No. 4		499635.59	4966530	221.78	10.36	620.9	60	0.15	0.0365	0.0075
FCCBS5		FCC Unit Blower, Unit No. 5		499635.59	4966523	221.65	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS6		FCC Unit Blower, Unit No. 6		499635.41	4966517	221.65	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS7		FCC Unit Blower, Unit No. 7		499635.59	4966512	221.64	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS8		FCC Unit Blower, Unit No. 8		499635.59	4966508	221.62	10.36	620.9	60	0.15	0.0365	0.0072

Facility Name: Marathon Petroleum Co LLC
Permit Number: 16300003-016

				NAD 83 Easting (X)	NAD 83 Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Short Term	Annual
Stack ID	EU ID	Description	MAP ID	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)
FCCBS9		FCC Unit Blower, Unit No. 9		499636.09	4966504	221.6	10.36	620.9	60	0.15	0.0365	0.0072
FCCBS 10		FCC Unit Blower, Unit No. 10		499636.41	4966500	221.53	10.36	620.9	60	0.15	0.0365	0.0072
SASSW OE1		No. 1 and No. 2 SRU Blower, Unit No. 1		499643.09	4966499	221.6	2.74	620.9	60	0.15	0.0227	0.0006
SASSW OE2		No. 1 and No. 2 SRU Blower, Unit No. 2		499648.59	4966499	221.71	2.74	620.9	60	0.15	0.0227	0.0006
SASSW OE3		No. 1 and No. 2 SRU Blower, Unit No. 3		499653.5	4966499	221.81	2.74	620.9	60	0.15	0.0227	0.0006
SASSW OE4		No. 1 and No. 2 SRU Blower, Unit No. 4		499660	4966499	221.94	2.74	620.9	60	0.15	0.0227	0.0006
BARR1 S1		Reformer Generator No. 1 Backup Air, Unit 1		499762	4966591	225.78	2.74	620.9	60	0.15	0.0227	0.0011
BARR1 S2		Reformer Generator No. 1 Backup Air, Unit 2		499762.09	4966585	225.78	2.74	620.9	60	0.15	0.0227	0.0011
BARR2 S1		Reformer Generator No. 2 Backup Air, Unit 1		499913.5	4966465	224.83	2.74	620.9	60	0.15	0.0227	0.0011
BARR2 S2		Reformer Generator No. 2 Backup Air, Unit 2		499901	4966483	225.51	2.74	620.9	60	0.15	0.0227	0.0011
G1		Wastewater Treatment Facility – Fire Pump House		499438.59	4966053	212.27	2.08	620.9	60	0.064	0.0920	0.0030
G2		Wastewater Treatment Facility – Tertiary Lagoon		499354.59	4966102	210.34	2.08	620.9	60	0.064	0.0920	0.0030
G3		South Tank Farm		499637	4965972	219.27	2.08	620.9	60	0.064	0.0920	0.0030
G4		Marketing Annex		499765.59	4966070	223.8	2.08	620.9	60	0.064	0.0239	0.0006
G5		East Tank Farm		500390.09	4966259	228.92	2.08	620.9	60	0.064	0.0920	0.0030
G6		(Outdoor Power Center) OPC 15		499610.09	4966202	219.88	9.7	620.9	60	0.15	0.2759	0.0065
G7		OPC 14		499812.31	4966302	224.1	9.7	620.9	60	0.15	0.2759	0.0065
G8		OPC 20		499929.59	4966323	225.24	9.7	620.9	60	0.15	0.2759	0.0065
G10		OPC 3		499515.5	4966342	216.92	9.7	620.9	60	0.064	0.2759	0.0079
G11		Wastewater Treatment Facility – Primary Lagoon		499420.31	4966435	210.08	9.7	620.9	60	0.064	0.0920	0.0030
G12		OPC 16		499509	4966480	217.27	9.7	620.9	60	0.064	0.2759	0.0079
G13		Sub station 4		499629.41	4966537	221.73	9.7	620.9	60	0.15	0.2759	0.0065
G14WSE		OPC 6 – without stack extension		499619.19	4966454	220.74	9.7	620.9	60	0.15	0.2759	0.0029
G14WO E		OPC 6 – with stack extension		499619	4966455	220.75	2.08	620.9	60	0.15	0.0920	0.0029
G15		OPC 12		499598.5	4966441	220.38	9.7	620.9	60	0.15	0.2759	0.0065
G16		MCC 17C		499632.09	4966443	221.06	9.7	620.9	60	0.15	0.2759	0.0065

				NAD 83 Easting (X)	NAD 83 Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Short Term	Annual
Stack ID	EU ID	Description	MAP ID	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)
G17		OPC 19/MCC 19A		499741.41	4966426	224.84	9.7	620.9	60	0.15	0.2759	0.0065
G18		MCC 19A/MCC 19B		499758.31	4966426	224.7	9.7	620.9	60	0.15	0.2759	0.0065
G19		OPC 2		499721.81	4966449	224.46	9.7	620.9	60	0.15	0.2759	0.0065
G20		OPC 7, 11, 13		499818.41	4966459	225.56	9.7	620.9	60	0.15	0.2759	0.0065
G21		Auxiliary Blower House		499624.31	4966577	221.8	9.7	620.9	60	0.15	0.2759	0.0065
G23		MCC 17A/MCC 17B/OPC 17		499632.31	4966516	221.59	9.7	620.9	60	0.15	0.2759	0.0065
G24		OPC 1/8		499732.19	4966597	225.07	9.7	620.9	60	0.15	0.2759	0.0065
G25		OPC 10		499866.91	4966630	225.54	2.08	620.9	60	0.15	0.0076	0.0009
G27		Sub station 2/switch gear		499842.69	4966622	225.59	9.7	620.9	60	0.15	0.2759	0.0065
G28		OPC 4		499865	4966628	225.52	9.7	620.9	60	0.15	0.2759	0.0065
G29		OPC 10		499874.09	4966629	225.6	9.7	620.9	60	0.15	0.2759	0.0065
G31		MCC 18C & 18D/MCC 18A & 18B		499947.59	4966631	225.6	9.7	620.9	60	0.15	0.2759	0.0065
G32		East of MCC 18A & 18B		499957	4966631	225.6	9.7	620.9	60	0.15	0.2759	0.0065
G33		West of Fire House		499830.31	4966676	225.54	9.7	620.9	60	0.15	0.2759	0.0065
G34		Center of Loading Rack Area		499875.09	4966910	225.6	9.7	620.9	60	0.15	0.2759	0.0065
ROAMA 1		Miscellaneous Roaming Units - Unit 1		499609	4966564	221.56	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 2		Miscellaneous Roaming Units - Unit 2		499754.69	4966414	224.57	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 3		Miscellaneous Roaming Units - Unit 3		499873.59	4966244	225.11	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 4		Miscellaneous Roaming Units - Unit 4		499568.09	4966367	219.02	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 5		Miscellaneous Roaming Units - Unit 5		499683.81	4966202	221.63	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 6		Miscellaneous Roaming Units - Unit 6		499489.69	4966148	215.85	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 7		Miscellaneous Roaming Units - Unit 7		499589.5	4966009	219.63	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 8		Miscellaneous Roaming Units - Unit 8		499727.31	4965858	222.84	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 9		Miscellaneous Roaming Units - Unit 9		499795.59	4966610	225.95	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 10		Miscellaneous Roaming Units - Unit 10		499949.19	4966471	225.22	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 11		Miscellaneous Roaming Units - Unit 11		500031.81	4966636	225.6	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 12		Miscellaneous Roaming Units - Unit 12		500065.69	4966292	226.6	1.37	620.9	40	0.064	0.0151	0.0004

Facility Name: Marathon Petroleum Co LLC
Permit Number: 16300003-016

				NAD 83 Easting (X)	NAD 83 Northing (Y)	Base Elevation	Stack Height	Temperature	Exit Velocity	Stack Diameter	Short Term	Annual
Stack ID	EU ID	Description	MAP ID	(m)	(m)	(m)	(m)	(K)	(m/s)	(m)	(g/s)	(g/s)
ROAMA 13		Miscellaneous Roaming Units - Unit 13		500395.59	4966254	229.08	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 14		Miscellaneous Roaming Units - Unit 14		500347.5	4966466	228.69	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 15		Miscellaneous Roaming Units - Unit 15		499721.59	4966778	225.22	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 16		Miscellaneous Roaming Units - Unit 16		499782.19	4966943	225.6	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 17		Miscellaneous Roaming Units - Unit 17		499949.19	4967023	225.5	1.37	620.9	40	0.064	0.0151	0.0004
ROAMA 18		Miscellaneous Roaming Units - Unit 18		499925.5	4966783	225.6	1.37	620.9	40	0.064	0.0151	0.0004