A9831

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

A983144201

FACILITY: MARATHON PETROLEUM COMPANY LP		**SRN / ID:** A9831
LOCATION: 1001 S Oakwood, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Paul Bortolussi , Environmental Professional		**ACTIVITY DATE:** 04/24/2018
STAFF: Jorge Acevedo	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: NHT Stripper		
RESOLVED COMPLAINTS:		

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
INSPECTION REPORT

COMPANY NAME	:Marathon Petroleum Company-
FACILITY ADDRESS	:1001 S. Oakwood, Detroit, MI 48217
STATE REGISTRAT. NUMBER	:A9831
SIC CODE	:2911
EPA SOURCE CLASS	: A
EPA POLLUTANT CLASS	: Mega Site
LEVEL OF INSPECTION :	:PCE
DATE OF INSPECTION	:04/24/18
TIME OF INSPECTION	: 10:20 AM
DATE OF REPORT	:
REASON FOR INSPECTION	: Annual Compliance Inspection.
INSPECTED BY	: Jorge Acevedo
PERSONNEL PRESENT	: Paul Bortolussi
FACILITY PHONE NUMBER	:
FACILITY FAX NUMBER	:

INSPECTION NARRATIVE:

On April 24, 2018, I conducted a partial compliance evaluation of the Marathon Petroleum Refinery. I arrived around 10:20AM. I met with Paul Bortolussi, Environmental Professional.

The focus of the inspection was the NHT Stripper Reboiler. Marathon Petroleum was conducting a stack test of the NHT Stripper Reboiler for NOx. The Reboiler is fired on Refinery Fuel Gas and Natural Gas. The stack testing company, Clean Air Engineering, was onsite at the NHT Stripper Reboiler preparing to conduct the stack test. After getting our badges, Mr. Bortolussi drove us to into the facility so that I could observe the stack testing.

Onsite, I gathered some process data from Mr. Bortolussi. I observed the stack and did not observe any opacity.

Run 1 for NOx started at 8:43AM. Run 1 averaged 87.15 ppm NOx and 0.11lb/mmBTU with 4.82% O2. Run 2 results were 86.67 ppm for NOx and 0.11lb/mmBTU at 5.11 % for O2. Run 3 began at 11:06AM. Run 3 results were 81.7 ppm NOx. I left the facilty at 12:38PM.

I requested records from Marathon Petroleum and received them promptly. Compliance analysis was performed to determine Refinery's compliance with applicable permit conditions and regulations.

FACILITY BACKGROUND

The Detroit Marathon Petroleum Company Refinery (MPC), situated in the southwest of Detroit,

processes approximately 115,000 barrels per day (B/D) of crude oil which is refined into a product mix of approximately 50% gasoline, 25% fuel oil, 18% Asphalt, and 7% other products. The makeup of this production will vary depending on the type of crude used as charge stock. The finished products leave the facility via truck, lake tanker, railroad car, or pipeline. The refinery operates 24 hours per day, 7 days per weeks, and 52 weeks per year. The refinery has been operating at this site for more than 50 years. MPC Detroit refinery is both a PSD and ROP major facility.

COMPLAINT/COMPLIANCE HISTORY

The MPC refinery has been issued one violation notices(VN) over the past twelve months. The MPC refinery has been a source of odor complaints during past years. All complaints have come from neighboring homes in southwest Detroit and the city of Melvindale located to the west.

OUTSTANDING CONSENT ORDERS

Currently, MPC has two outstanding New Source Review Consent Decrees. One is with the United States of America (Civil No. 01-40119) lodged May 11, 2001 and entered August 28, 2001. The County of Wayne, Michigan and the States of Minnesota and Louisiana are Plaintiff-Intervenors.

The other is with the Department of Justice and U.S. EPA (Civil No. 12-11544) lodged on April 5, 2012 and entered August 30, 2012.

MPC has two outstanding Consent Orders with the State of Michigan. AQD No. 40-2014 lodged on June 4, 2014 and AQD No. 32-2016 lodged on November 3, 2016.

OUTSTANDING LOVs

There are two outstanding Violation Notices. One was sent out on September 8, 2017. It was eventually referred to the Enforcement Unit. The second was sent on December 5, 2017. It was not resolved as of the report.

OPERATING SCHEDULE/PRODUCTION RATE

The MPC Detroit Refinery operates 24 hours per day, 7 days per week and 52 weeks per year, or 8760 hours per year. The crude unit raw crude oil capacity is nameplated at 115000 barrels per day; the actual crude oil throughput varies depending upon type.

PROCESS DESCRIPTION

The NHT Stripper Reboiler is used to heat the feed and strip excess hydrogen from the feed.

EQUIPMENT AND PROCESS CONTROLS

The NHT Stripper Reboiler does not use extra controls.

APPLICABLE RULES/PERMIT CONDITIONS:

Marathon Petroleum Company is subject to the ROP because they are major for NSR and Title V. They are a major source for Hazardous Pollutants. ROP-MI-A9831-2012 was issued on September 27, 2012.

The NHT Stripper Reboiler is covered under MI-ROP-A9831-2012c.

Permit Conditions are evaluated in Appendix A:

FGHEATERS-S1

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

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

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

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination
NOx	0.2 lb/MMBTU[2]	Based upon a 12 month rolling time period as determined at the end of each calendar month	EU16-NHTSTRIPREBOIL-S1	Compliance--Emission Stack Test was conducted in 2015 and showed 0.13lb NOx/MMBTU
PM	0.0019 lb/MMBTU[2]	Three hour average	Each emission unit in FGHEATERS-S1 For EU11-FCCUCHARHTR-S1, this limit applies only to the primary fuel to the heater (refinery fuel gas).	Compliance-Emission Stack Test was conducted in 2017 and resulted in 0.00097 lb/MMBTU.
PM10	0.0076 lb/MMBTU[2]	Three hour average	Each emission unit in FGHEATERS-S1. For EU11-FCCUCHARHTR-S1, this limit applies only to the primary fuel to the heater (refinery fuel gas).	Compliance-Emission Stack Test was conducted in 2017 and resulted in 0.00192 lb/mmBTU.
CO	0.02 lb/MMBTU[3]	Based on an annual rolling average, as determined at the end of each	EU16-NHTSTRIPREBOIL-S1	Compliance-Emission Stack Test was conducted in 2017 and resulted in

		calendar month		0.000361 lb/mmBTU
VOC	0.0055 lb/MMBTU[2]	Three hour average	Each emission unit in FGHEATERS-S1	Compliance-Emission Stack Test not required but similar heaters stack test results indicate that VOC emissions are below permit limit.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determinations
Hydrogen sulfide content of the refinery fuel gas burned in any combustion device in FGHEATERS-S1	0.10 grain per dry standard cubic foot (230 milligrams per dry standard cubic meter or 160 ppmdv) 2*	Based upon a three hour average	FGHEATERS-S1	Compliance-Records were received for the period May 2017 through May 2018. Records show facility in compliance with 3 hour limit. There were some periods - June 7-8, 2017, October 18, 2017, November 6, 2017, April 24, 2018 were there some hours above but these occurred during periods of malfunction and represent less than 1% of total operating time.
Hydrogen sulfide content of the refinery fuel gas burned in any combustion device in FGHEATERS-S1	60 ppmdv[3]	Annual rolling average, as determined at the end of each calendar month	FGHEATERS-S1	Compliance-Records were received for the time period of April 2017 through May 2018. 12 hour rolling records indicate H2S concentration was well below 60 ppm.
*Compliance with this limit shall be considered compliance with the limits of R 336.1406(1) which have been subsumed under this streamlined requirement.				

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The heat input to EU16-NHTSTRIPREBOIL-S1 shall not exceed 46 MMBTU/hr on a daily average.[2]
(R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21)
Compliance- Records indicate that emission unit averaged around 28 mmbtu/hr on a yearly average.
2. The permittee shall only fire refinery fuel gas and/or sweet natural gas in FGHEATERS-S1.2 (R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21)
Compliance- Unit only burns refinery fuel gas.

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

1. Once during the five year term of this permit and every five years thereafter, the permittee shall verify emission rates from EU16-NHTCHARHTR-S1, EU16-NHTSTRIPREBOIL-S1, EU19-KHTCHARHTR-S1, and EU22-FUELOILHTR-S1 of the pollutants listed below by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. For tests conducted prior to commencement of trial operation of the heavy oil upgrade project, the test plan shall demonstrate that test conditions will be representative of post-startup conditions. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. For verification of PM emissions, testing shall include both the filterable and condensable fractions.[2] (R 336.2001, R 336.2003, R 336.2004)

NO_X (R 336.1205, R 336.2802, 40 CFR 52.21)

PM10 (R 336.1205, R 336.2802, 40 CFR 52.21)

PM (R 336.1205, R 336.2802, 40 CFR 52.21)

CO (R 336.1205, R 336.2802, 40 CFR 52.21)

Sulfuric acid mist[3] (R 336.1201(3))

Compliance- Permittee satisfied emission testing requirements. Testing was conducted in 2017 and 2015 and results were below emission limits.

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

NO_X (R 336.1201(3))

Compliance- Permittee satisfied emission testing requirements.

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

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

Compliance- Permittee is complying with appropriate schedule.

4. For any emission unit required to conduct an emission test in SC V.1 through V.12 for a specific pollutant every three years and every five years, the requirement to conduct an emission test every five years for that pollutant does not apply; emission testing for that pollutant is required every three years.[2] (R 336.1201(3))

Compliance- Permittee is complying with appropriate schedule.

See Appendix 5-S1

VI. MONITORING/RECORDKEEPING

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

The permittee monitor and keep records of the concentration of hydrogen sulfide (H2S) in the refinery fuel gas burned in each heater in accordance with the Federal Standards of Performance as specified in 40 CFR Part 60, Subpart J and Ja, in a manner and with instrumentation acceptable to the Air Quality Division.[2] (R 336.1205, R 336.1226(d), R 336.2802, 40 CFR 52.21, 40 CFR 60.105(a)(4), 40 CFR 60.107a(a)(2))

Compliance- H2S concentration of refinery fuel gas is monitored continuously.

The permittee shall monitor and keep records of the concentration of total reduced sulfur (TRS) in the refinery fuel gas burned in each heater/boiler, in a manner and with instrumentation acceptable to the Air Quality Division. The TRS monitor may be used as an alternative to the H2S monitoring required by SC VI.1.[3] (R 336.1201(3))
Compliance- Monitoring is conducted with appropriate monitor.

Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S or TRS in the fuel gas being burned.[2] (40 CFR 60.105(a)(4)(ii))
Compliance- H2S concentration of refinery fuel gas is monitored continuously.

The permittee shall keep records of emissions and operating information to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A, J, and where applicable Ja.[2] (40 CFR Part 60 Subparts A and J/Ja)
Compliance- Emission records are kept.

The permittee shall monitor, in a satisfactory manner, the heat input for each heater in FG-HEATERS-S1, in MMBTU/hr, on a daily, monthly, and rolling 12 month time period basis.[2] (R 336.1205(1), R 336.1225, R 336.2802, 40 CFR 52.21)
Compliance- Heat input is continuously monitored.

The permittee shall keep daily records of the type and amount of fuel used in each heater/boiler in FGHEATERS-S1.[2] (R 336.1901, 45 FR 29270)
Compliance- Daily records of type and amount of fuel in each heater are kept.

The permittee shall keep, in a satisfactory manner, daily, monthly, and rolling 12 month time period records of the heat input for each heater in FG-HEATERS-S1, in MMBTU/hr.[2] (R 336.1205, R 336.1225, R 336.2802, 40 CFR 52.21)
Compliance- Records are kept of heat input for each heater on a continuous basis.

See Appendix 3-S1

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))
Compliance- Deviations are reported promptly
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
Compliance- Semiannual reporting is done timely.

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))
Compliance- Annual certification is reported timely.

The permittee shall submit the data on the concentration of hydrogen sulfide or total reduced sulfur in the refinery fuel gas burned in FGHEATERS-S1 to the Air Quality Division (AQD) District Supervisor in acceptable format within 30 days following the end of the quarter in which the data were collected.[2] (40 CFR 60.7)
Compliance- Quarterly reports are submitted showing H2S excess emissions.
See Appendix 8-S1

VIII. STACK/VENT RESTRICTION(S)

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

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV16-H3 (EU16-NHTSTRIPREBOIL-S1)	45[1]	96.8[1]	R 336.1225

Compliance assumed- Measurements were not taken but visual observations indicate that stack height and diameter are appropriate.

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provision of the federal Standards of Performance of New Stationary Sources as specified in 40 CFR Part 60, Subparts A, J, and where applicable Ja, as they apply to FGHEATERS-S1.[2] (40 CFR Part 60, Subparts A and J/Ja)
Compliance-- Facility is keeping records to show compliance with NSPS.

2. The permittee shall not operate any emission unit in FG-HEATERS-S1 unless an approved Start-up, Shutdown and Malfunction Plan (SSMP), or an alternate plan approved by the AQD District Supervisor is implemented, maintained and followed. The plan shall describe how emissions will be minimized during all startups, shutdowns, and malfunctions. The plan shall incorporate procedures recommended by the equipment manufacturer as well as standard industry practices.[2] (R 336.1205, R 336.1911, R 336.1912, R 336.2802, 40 CFR 52.21)
Compliance- Facility is operating under approved Startup Shutdown Malfunction plan.

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

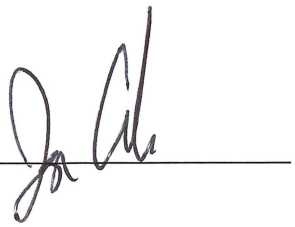
The Single Source does have a Fugitive Dust Control Plan. During the inspection, Fugitive Dust was not evaluated.

MAERS REPORT REVIEW:

Pollutant	2017 Emissions(TPY)
CO	145
NOx	389.94
PM	83.31
Sox	215
VOC	367.89

FINAL COMPLIANCE DETERMINATION:

Based on the inspection and review of the records, it appears that the NHT Stripper Reboiler is in compliance with MI-ROP-A9831-2012c

NAME  DATE 9-5-18 SUPERVISOR W.M.