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Air Quality Division

Marathon Petroleum Company LP

1001 S. Oakwood
Detroit, MI 48217-1319
Main No.: 313.843.9100
Fax: 313.297.6221

VIA FEDERAL EXPRESS

March 15, 2019

Mr. Jorge Acevedo
Michigan Department of Environmental Quality
Air Quality Division
3058 W. Grand Boulevard
Suite 2300
Detroit, MI 48202

RE: Response to 02/22/2019 Violation Notice Regarding - Odors beyond the facility's property line and uncombusted gases from the Coker Flare; Marathon Petroleum Company LP, Michigan Refining Division – SRN A9831

Dear Mr. Acevedo:

This letter is in response to the February 22, 2019 Violation Notice (VN) issued to Marathon Petroleum Company LP, Michigan Refining Division (MPC). The VN requested a written response by March 15, 2019 (21 days from the date of the letter).

In the VN, Michigan Department of Environmental Quality, Air Quality Division (AQD), alleged that the following violations occurred:

Process Description	Rule/Permit Condition Violated	Comments
Process associated with oil refining at 1300 South Fort Street.	General Condition 12(b) of ROP No. MI-ROP-A9931-2012b, Section 1; Michigan Administrative Rule 901 (R 336.1901)	Detection of odors beyond the facility's property line, attributable to the facility, of sufficient intensity and duration so as to constitute an unreasonable interference with the comfortable enjoyment of life and property
EU-COKERFLARE-S1	40 CFR 63.643(a)(2) ROP No. MI-ROP-A9831-2012c, FGFLARES-S1, Condition III.14 ROP No. MI-ROP-A9831-2012c, FGFLARES-S1, Condition III.12 40 CFR 60.18	Vent gases were not being combusted in Coker Flare, this not meeting the requirements of reducing emissions of organic HAPS by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent.

This letter provides information requested in the VN, including: the date(s) the alleged violations occurred; an explanation of the causes and duration of the alleged violations; whether the violations are ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the alleged violations and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence. The request is italicized bold and MPC's response is underneath each item.

Date(s) the Alleged Violation Occurred:

On February 3, 2019, the Detroit Refinery was notified of odor complaints from the community. The source of the odors was identified to be a leak of uncombusted gases, originating from the side of the molecular seal of the Coker Flare. Odor complaints were received to the Detroit Refinery call center from 3:09 am to 10:09 am on February 3, 2019. Once the refinery identified the source of the odor complaints, several mitigating steps were put into place to reduce the amount of gas and associated odors the morning of February 3 (these mitigating steps are further described in the next section). Refinery personnel and agency representatives performing air monitoring in the local community noted that observable odors were not present after approximately 12:00 pm on February 3, 2019.

Upon investigation, it appears the leak on the Coker Flare occurred around 3:00 pm on February 2, 2019. However, a flame was initially observed from the leak area. A full refinery shutdown was necessary to fully isolate the flare and stop the leak. Mitigation steps were initiated at approximately 10:00 am February 3, 2019 to reduce the amount of uncombusted material reaching the atmosphere from the flare. Due to the extensive planning and preparation necessary to safely accomplish a full refinery shutdown, the flare was not fully decommissioned until February 8, 2019 at 5:18 pm; however, during this time there were no active process gases being added to the flare system.

Explanation of the Causes and Duration of the Alleged Violation:

From January 28, 2019 to January 31, 2019, the Detroit metro area experienced sustained record low temperatures with windchills below -40°F. The severe weather caused a rapid shutdown at a third-party plant that supplies high pressure steam and hydrogen to the refinery. The loss of steam subsequently resulted in a controlled shutdown of several portions of the refinery due to freeze-related issues. In conjunction with the shutdown, the refinery's Air Monitoring Team was deployed to collect monitoring data for multiple pollutants in the local community. The monitoring data, along with the refinery's four ambient air monitoring stations, reflected very low to non-detectable concentrations for all pollutants.

During the shutdown, a flame was observed on the side of the molecular seal of the Coker flare. The molecular seal is just below the flare tip and is a safety feature that prevents oxygen rich air from backing into the flare system, which could cause an explosion. At that point, MPC began planning for a refinery wide shutdown to repair the flare.

In the early morning hours on Sunday February 3, 2019, the refinery started receiving odor complaints. It is believed that flare gases from the FCCU shutdown during the night allowed for a mixture of natural gas, propane, and mercaptans to go uncombusted from the leak in the molecular seal. Mercaptans are naturally occurring in crude oil, and present in the process gases flared during the shutdown of the FCCU. They are also the same chemical compounds that are added to natural gas to provide its distinctive smell and help in the detection of leaks.

The Detroit Refinery initiated several mitigating steps in response to the malfunction at the Coker flare. The flare gas recovery system was reestablished at approximately 10:00 am on February 3 to return the gases to a treatment unit. The flare gas recovery system had been shut down as a precaution against upsets in the refinery sulfur plant. Once the flare gas recovery system was restarted, the Coker flare was essentially isolated from the process gases with a water seal. In addition, natural gas was added to the flare, along with a chemical additive that is designed to reduce mercaptan and H₂S in the flare stack. These measures were effective in stopping odors to the community.

Whether the Alleged Violation is Ongoing:

The alleged violation is not ongoing.

Summary of the Actions Taken:

On Saturday February 2, 2019 from 1:30 PM to 6:30 PM, MPC's Air Monitoring Team conducted air monitoring in downwind communities every 15 minutes. Monitoring took place near the neighborhood surrounding Woodmere Cemetery and Sanfers / Dumfries. All readings for LEL, VOC, H₂S, and benzene were 0 or non-detect. Summa canisters were also used to collect ambient air samples.

From Saturday February 2, 2019 through Saturday February 9, 2019 refinery personnel were in daily correspondence with MDEQ, EPA, and BSEED representatives to share updates and highlight progress that had been made towards isolating the Coker Flare. Air monitoring data, including perimeter air monitor station (PAMS) data for particulate matter, total reduced sulfur, CO and SO₂, was shared with the agencies and results were corroborated when compared to samples collected by the agency. Additionally, data collected in summa canisters during the onset of the incident were significantly below levels of concern when compared to EPA's Acute Exposure Guideline Levels. Additionally, all PAMS readings were within historical levels. Extensive air monitoring results, which have been shared with EPA, MDEQ, and BSEED, demonstrate that there were no chemicals at harmful levels with the ambient air downwind of the refinery.

The Detroit Refinery initiated several mitigating steps in response to the malfunction at the Coker flare. The flare gas recovery system was reestablished at approximately 10:00 am on February 3 to return the gases to a treatment unit. Once the flare gas recovery system was restarted, the Coker flare was essentially isolated from the process gases with a water seal. In addition, natural gas was added to the flare, along with a chemical additive that is designed to reduce mercaptan

and H₂S in the flare stack. These measures were effective in stopping odors to the community, and after this time no active process gases were flared. Only small amounts of nitrogen and/or natural gas were present until the flare was fully isolated on February 8. .

Between Sunday, February 3, 2019 and Friday, February 8, 2019, the refinery completed engineering review, design and construction of multiple projects to safely take the Coker flare out of service. On Friday, February 8, 2019 at 5:18 PM the refinery installed a mechanical blind to remove the Coker flare from service. At that time the flare was cleaned, repaired and returned to service on February 17, 2019 at approximately 7:09 PM.

Steps Taken to Prevent a Reoccurrence:

MPC performed inspections of the damaged molecular seal and repaired the hole where the leak occurred. The flares integrity was properly tested and received passing results prior to being returned to service.

MPC appreciates this opportunity to respond to the VN. If you would like further information, please do not hesitate to contact Honor Sheard at 313-297-6248.

Sincerely,

Marathon Petroleum Company LP
By: MPC Investment LLC, its General Partner

Mr. David Roland, Deputy Assistant Secretary

cc: Mr. Paul Max, City of Detroit, BSEED
Ms. Mary Ann Dolehanty, DEQ
Dr. Eduardo Olaguer, DEQ
Mr. Christopher Ethridge, DEQ
Ms. Jenine Camilleri, DEQ
Ms. Wilhemina McLemore, DEQ
Mr. Jeff Korniski, DEQ
Mr. Jonathan Lamb, DEQ