



Tesoro Refining & Marketing Company LLC

A subsidiary of Marathon Petroleum Corporation
Martinez Refinery
150 Solano Way
Martinez, CA 94553-1487

December 12, 2019

USPS CERTIFIED MAIL: 7019 2280 0000 9282 6392

Mr. Jeff Gove
Director of Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

**SUBJECT: October 18, 2019 - Flare Event Causal Analysis
Tesoro Refining and Marketing Company, subsidiary of Marathon Petroleum, Martinez Refinery Plant #B2758**

Dear Mr. Gove:

Pursuant to Regulation 12, Rule 12, and the Compliance Advisory dated June 25, 2007 from the BAAQMD Compliance and Enforcement Division, the flare causal analysis for the October 18, 2019 event is attached. This report is being submitted under both the requirements specified in Regulation 12-12-406, for a reportable event when flaring occurs within a facility, and the Required Contents for Causal Analysis Reports, outlined in the Compliance Advisory.

This event triggered a team incident investigation. The investigation is complete, and the following report includes recommended corrective actions. If you have any questions or wish to discuss any of these items further, please feel free to call Sharon Lim at (925) 335-3467.

Sincerely,

David Chetkowski
Advanced HES Professional

SYL/kds

Attachments

cc: (via e-mail)
Miguel Zepeda, BAAQMD Air Quality Inspector (via e-mail)

FLARE CAUSAL ANALYSIS REPORT

*Flaring Associated with Flare Gas Recovery Compressors Discharge Piping Leaks
October 18, 2019*

Public Copy

- 1) **Date on which the report was drafted.**
December 12, 2019
- 2) **The refinery name and site number.**
Tesoro Martinez Refinery, Plant # B2758
- 3) **The assigned refinery contact name and phone number.**
Sharon Lim, Senior Engineer, (925) 335-3467
- 4) **Identification of the flare(s) at which the reportable event occurred by reviewing the water seal monitoring data to determine which seals were breached during the event.**
Steam Flares, **S944 & S945**; Coker Flare, **S1517**. [REDACTED]
[REDACTED]
- 5) **The flaring event duration for each affected flare:**
 - a. **The date(s) of the event**
October 18, 2019
 - b. **The start and end time of the event**
Starting time 10:55 AM
Ending time 6:18 PM
 - c. **The net duration of the event (in hours and minutes)**
7 hours and 23 minutes [REDACTED]
- 6) **A brief description of the flaring event**

Operations quickly shutdown the east flare gas recovery compressor when a hydrocarbon leak to atmosphere was discovered on the discharge piping of the flare gas compressor. The west flare gas recovery compressor was already down due to another leak discovered the day before.
- 7) **A process flow diagram showing the equipment and process units that were the primary cause of the event.**
[REDACTED]
- 8) **The total volume of vent gas flared (MMSCF) throughout the event.**
Based on the Regulation 12 Rule 11 Flare Monitoring report for July 2019, the corrected net gas flow to the flare was 0.67 MMSCF.
- 9) **The emissions associated with the flaring event per calendar day:**
 - a. # methane emitted = 125 lbs
 - b. # non-methane hydrocarbon emitted = 66 lbs
 - c. # SO₂ emitted = 555 lbs

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Also provide the assumptions used to calculate emissions associated with the flaring event if they are different from those used for reporting under Regulation 12 Rule 11.

The emissions associated with this flaring event were based on the methodology used for reporting under Regulation 12 Rule 11.

- 10) A statement as to whether or not the gas was scrubbed to eliminate or reduce any entrained compounds and a list of the compounds for which scrubbing was performed.**

[REDACTED] The vented gas which was flared was not scrubbed in the refinery fuel gas treating system.

- 11) The primary cause of the flaring event including a detailed description of the cause and all contributing factors. Also identify the upstream process units that contributed vent gas flow to the flare header and provide other flow instrumentation data where available.**

On October 17, 2019, a leak developed on the discharge piping of the west flare gas recovery compressor. Operations isolated the leak by shutting down the compressor after starting up the east flare gas recovery compressor. Maintenance began work to construct a clamp. The next day, the east flare gas compressor developed a leak also on the discharge piping. This caused the refinery to shutdown this compressor as well to stop hydrocarbon from going to the atmosphere and resulted in flaring for about seven hours.

Maintenance expedited the clamp installation and Operations returned the west flare gas recovery compressor to service. This stopped the flaring.

The root cause was due to weak acid causing rapid corrosion in the flare piping. The source of the weak acid was due to an open valve to the flare header from a chemical cleaning operation of an acid containing vessel. The vessel, (V-101), was pumped out as part of its shutdown procedure. However, there was residual acid in the vessel. When the chemical cleaning began, a portion of this acid was sent to the flare header.

- 12) Describe all immediate corrective actions to stabilize the flaring event, and to reduce or eliminate emissions (flared gas recovered or stored to minimize flaring during the event). If a decision was made not to store or recover flare gas, explain why.**

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Operations decreased flows to the flare header as much as possible. Maintenance quickly installed the clamp on the leak and Operations restarted the west flare gas recovery compressor.

13) Was the flaring the result of an emergency? If so, was the flaring necessary to prevent an accident, hazard or release to the atmosphere?

Flaring was not the result of an "emergency" as defined by the BAAQMD.

"Emergency: A condition at a petroleum refinery beyond the reasonable control of the owner or operator requiring immediate corrective action to restore normal and safe operation that is caused by sudden, infrequent and not reasonably preventable equipment failure, natural disaster, act of war or terrorism or external power curtailment, excluding power curtailment due to an interruptible power service agreement from a utility."

14) If not the result of an emergency and necessary to prevent an accident, hazard or release to atmosphere, was the flaring consistent with an approved FMP? If yes, provide a citation to the facility's FMP and any explanation necessary to understand the basis for this determination.

The Flare Management Minimization Plan Section 3.4, Prevention Measures, Subsection 3.4.2 Gas Quality and Quantity, discusses maintenance activities due to startups and shutdowns. Leak repairs is an example of this type of activity.

15) If the flaring was due to a regulatory mandate, to vent to the flare, why couldn't the gas be recovered, treated, and used as fuel gas?
Not applicable.

16) Identify and describe in detail each preventative measure (PM) considered to minimize the flaring from the type of reportable flaring event that occurred:

- a. State whether the PM is feasible (and will be implemented), or not feasible

	Corrective Actions	Anticipated Date of Completion
1	Modify associated vessel shutdown procedure to add additional verification steps to ensure all acid is removed from vessel prior to chemical cleaning.	6/30/2020

- b. Explain why the PM is not feasible, if applicable

Not applicable.