



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

July 15, 2022

VIA ELECTRONIC MAIL

Michael Marlowe
Manager, Environmental Affairs
Martinez Refining Company, LLC
3485 Pacheco Boulevard
Martinez, CA 94553

RE: Notification of Deficiency in Regulation 12, Rule 15 Fenceline Air Monitoring Plan and Quality Assurance Project Plan

Dear Mr. Marlowe:

Thank you for submitting a revised Fenceline Air Monitoring Plan (AMP) and Quality Assurance Project Plan (QAPP) on June 1, 2022 pursuant to Section 403 of Bay Area Air Quality Management District (Air District) Regulation 12, Rule 15. Martinez Refining Company (MRC) revised the AMP to accommodate installation of a new open-path H₂S monitoring system.

In accordance with Regulation 12, Rule 15, the Air District has 45 days from receipt of a new or modified AMP to identify any deficiencies. We are writing to notify you that the Air District has reviewed the revised AMP and associated QAPP, and has identified several deficiencies, which must be corrected before the Air District can proceed to solicit public comment on the documents as outlined in Section 404 of Regulation 12, Rule 15. Pursuant to Section 404.2 of the same rule, MRC has 45 days from the date of this letter to address the issues outlined in the enclosed document and resubmit a proposed plan. Failure to submit a revised plan or adequately address the deficiencies in the enclosure may result in disapproval of the plan.

We are committed to working with you to resolve the issues we have identified as expeditiously as possible. If you have any questions concerning these issues, please contact me at (415) 749-4601 or jbovee@baaqmd.gov.

Sincerely,

Jerry Bovee, P.E., QSTI
Air Quality Engineering Manager
Meteorology & Measurement Division

Enclosure

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ENCLOSURE

Air District Comments on Martinez Refining Company's Revised Fenceline Air Monitoring Plan and Quality Assurance Project Plan, Submitted June 1, 2022

1. In a letter dated October 6, 2021, the Air District outlined the minimum requirements that any open-path H₂S monitoring system must have. Among the requirements is the need for the system to be operational by January 1, 2023. While MRC's June 1, 2022 cover letter stated that the AMP and QAPP have been updated to reflect the new H₂S fenceline monitoring system to be installed at the refinery, neither the AMP or QAPP state that the system will be operational and that the associated data will be posted on the public website by the required date. Such a commitment must be added to the AMP. In addition, please include a statement in the AMP that MRC will notify the Air District of the system status within seven days after it is fully operational and put into production.
2. The Air District's October 6, 2021 letter regarding minimum requirements for the open-path H₂S monitoring system stated that it must have a measurement range of 3 ppb to 5,000 ppb. While these minimum requirements are reflected in Table 2.2 of the AMP and Table 1.2 of the QAPP, it is likely that upper detection limits higher than 5,000 ppb can be achieved for individual paths. MRC should evaluate this and include in the AMP path-specific upper detection limits that are achievable.
3. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system stated that the detection limit must be quantified and verified continuously in real time, reported in near real time on the refinery fenceline monitoring website, and included in the quarterly reports along with the measurement data. The Air District has the following comments regarding these requirements:
 - a. Section 4 of the QAPP states the TDL detection limit will be checked on a quarterly basis (pp. 21 & 22) and neither the AMP nor the QAPP otherwise state that the detection limit will be continuously quantified and verified as required. The AMP and QAPP also do not identify and explain the method that will be used to continuously quantify the MDLs, or identify acceptance criteria that will be used for quality assurance purposes. MRC must update the AMP and QAPP to include this information.
 - b. Aside from a general statement on page 24 of the AMP that the public website will include, "information about detection levels," neither the AMP nor the QAPP state that the minimum detection limit will be reported in near real time on the refinery fenceline monitoring website; MRC must update the AMP and QAPP to include this requirement.
 - c. Page 24 of the AMP and Section 7 of the QAPP (p. 28) state that final data sets are compiled quarterly and provided to the Air District. However, none of these sections state that the detection limit data will be among the information provided in the quarterly reports. Please revise the AMP and QAPP accordingly and specify that the data will be provided in CSV format.
4. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system stated that it should include real time data validation using measurement of another common ambient air component present in the spectra. While page 16 of the QAPP states that verification of methane above natural ambient levels will be used as a real-time data quality check, it does not explain how the methane measurements will be used to verify the H₂S measurements. Please elaborate on this in the QAPP and fully document why methane is an appropriate measurement parameter for ongoing data validation.
5. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system stated that the signal intensity must be measured in real time and provided to the

Air District in the quarterly reports. The Air District has the following comments regarding these requirements:

- a. While Table 4.1 of the QAPP (p. 20) and page 22 of the QAPP state the light signal from optical remote sensors will be checked continuously in real time, the QAPP does not specify acceptance criteria for the signal checks or any other checks described in that section of the document. MRC must include acceptance criteria in the QAPP for all instrument QA/QC checks and explain their significance.
 - b. Page 24 of the AMP and Section 7 of the QAPP (p. 28) state that final data sets are compiled quarterly and provided to the Air District. However, none of these sections state that the signal intensity data will be among the information provided in the quarterly reports. Please revise the AMP and QAPP accordingly and specify that the data will be provided in CSV format.
 - c. Include in the QAPP a description of the real time data assessment procedures that will be implemented to determine signal intensity.
6. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system specified that it should have a repeatable detection limit of 25 ppb at a light transmission less than 1%. While this requirement is described in the QAPP as a "key performance parameter (p. 16), the QAPP should state that the system will be installed and operated to achieve it.
 7. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system specified that that MRC must perform 3-point calibration checks on a quarterly basis using sealed, or flow through, gas cells. Section 4 of the QAPP (e.g., p. 22) states that single point calibration checks will be performed on a monthly basis. MRC must revise the QAPP to include this requirement along with a requirement that the tests will be performed using sealed, or flow through, cells capable of incorporating the atmospheric path.
 8. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system specified that that MRC must perform bump tests on a monthly basis using a unique concentration that differs from the calibration checks. This requirement could not be found in QAPP and must be added along with a requirement that the tests will be performed using sealed, or flow through, cells capable of incorporating the atmospheric path.
 9. Sections 4 and 5 of the QAPP identify the quality assurance and maintenance activities that will be performed on the open-path H₂S systems. As a general matter, the QAPP contains an insufficient level of detail regarding the methods, procedures, equations, and calculations that will be used to perform these actions. For example, Table 5.2 (p. 25) states that system performance indicators will be checked on a monthly basis but it is unclear what indicators will be checked, how they will be checked, and what acceptance criteria will be used. As another example, the Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system specified that it should have an accuracy of 2% and repeatability of 1% over the measurement range. While Table 3.1 of the QAPP specifies the accuracy and repeatability that can be achieved at various measurement concentrations and Table 4.1 states that instrument accuracy will be checked quarterly, the QAPP itself does not specify how these parameters will be assessed and documented. Many of these details are presumably included in the reference documents cited in the QAPP. MRC must attach the reference documents or other standard operating procedures for all maintenance and QA/QC activities, which will become part of the publicly available QAPP, or else describe them more fully in the body of the QAPP.
 10. The Air District's October 6, 2021 letter regarding the minimum requirements for the open-path H₂S monitoring system specified that raw spectral data files must be saved as single files and made

available to the Air District upon request. This requirement could not be found in the AMP or QAPP and must be added.

11. Table 1.1 of the QAPP provides the coordinates and elevation of the monitoring equipment. The TDL was omitted from this table and should be added.
12. According to the Air Monitoring Guidelines for Petroleum Refineries (April 2016) established pursuant to Regulation 12, Rule 15, instrumentation must meet a minimum of 75% completeness on an hourly basis, 90% of the time based on annual quarters. While the AMP and QAPP reflect this requirement, they lack an adequate level of detail regarding how compliance with this requirement is demonstrated. For example, the QAPP should contain information such as:
 - codes used to flag data as valid, invalid, or under review;
 - operational codes used to explain why measurements are invalid (e.g., instrument malfunction, planned maintenance, poor visibility, etc.); and
 - formulas used to determine the completeness of the data and other related statistics.

MRC should add more detail to the QAPP in this regard.

13. The Air District supports MRC's practice to include a document control table in the AMP and QAPP, which specifies the revision number and revision date, and describes the nature of the revision. The Air District has the following comments with respect to these tables:
 - a. For clarity, the date of the document (e.g., on the cover page of the AMP) should match the latest revision date in the document control table. Otherwise remove the date from the cover page of the AMP and rely on the document control table for the date of the document.
 - b. For all revisions, the descriptions in the document control table on page 2 of the QAPP only state, "Updated Draft." Please use more meaningful descriptions like those used in the document control page of the AMP.
 - c. In addition to the signature of the person who approved each revision, we suggest including the typed or printed name of that person in the document control tables.
14. All procedures and metrics for exclusion, or invalidation, of data must be fully described and documented in the QAPP and on the publicly facing facility fence line data website, including environmental conditions, system maintenance, or system failure. Any data exclusion, or invalidation, must be reported to the Air District and verifiable through review and audit of logged operational data. Data exclusion, or invalidation, that cannot be verified will not be accepted and will be counted against the systems operational uptime requirements.