



REGION 10
SEATTLE, WA 98101

March 27, 2024

Mr. Jack Mann
Diversified Vapor Technologies
840 Lawrence Road, Suite B
Kemah, Texas 77565

Re: Alternative Monitoring Plan and Performance Testing Waiver – Hydrogen Sulfide Monitoring for Vapors Combusted in Portable Thermal Oxidizers under New Source Performance Standards for Petroleum Refineries, Subparts J and Ja – Diversified Vapor Technologies – Various Refineries Located in Region 10

Dear Mr. Mann:

This letter is in response to your written application, dated August 17, 2023, pertaining to the use of portable temporary thermal oxidizer units (TOUs), such as vapor combustors, for emissions control during tank degassing that are subject to 40 CFR Part 60, Subpart J, Standards of Performance for Petroleum Refineries, and Subpart Ja, Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 2007 (NSPS Subparts J or Ja). Based on the information provided, the U.S. Environmental Protection Agency, Region 10 conditionally approves your alternative monitoring plan and grants a performance testing waiver for degassing activities that use portable temporary TOUs at refineries located within the EPA, Region 10 states¹, as explained below and further delineated in this letter. This conditional approval does not constitute an authorization to construct or operate the TOUs. Such construction and operation must comply with the regulations and permitting requirements of the applicable permitting authority.

Background

Diversified Vapor Technologies (“DVT”) performs degassing services for tanks, vessels, and pipes at petroleum refineries. The use of portable TOUs to combust vapors that are refinery fuel gas vent streams renders the TOUs as fuel gas combustion devices subject to either NSPS Subpart J or Subpart Ja, depending on the refinery-specific requirements.² NSPS Subparts J and Ja prohibit the owner or

¹ The AMP conditional approval is limited to states within the EPA, Region 10 (Alaska, Idaho, Oregon, and Washington).

² “Fuel gas” and “Fuel gas combustion device” are defined in 40 C.F.R. §§ 60.101 and 60.101a. NSPS Subparts J and Ja affected facilities are identified in 40 C.F.R. §§ 60.100 and 60.100a.

operator of a fuel gas combustion device from burning vent gas generated at a petroleum refinery that contains H₂S in excess of the following limits:

- 1) 230 milligrams H₂S per dry standard cubic meter (mg/dscm), per 40 CFR 60.104(a)(1).
- 2) 162 parts per million by volume (ppmv) H₂S determined hourly on a 3-hour rolling average basis, and 60 ppmv H₂S determined daily on a 365-day successive calendar day rolling average basis, per 40 CFR 60.102a(g)(1)(ii).

NSPS Subparts J and Ja require the owner or operator of a fuel gas combustion device to install, calibrate, maintain, and operate a continuous emission monitoring system to monitor and record the concentration of H₂S in the fuel gases before being burned in a combustion device, per 40 CFR 60.105(a)(4) and 60.107a(a)(2). Since your portable TOUs are used on a temporary basis at each facility, you contend that installation of an H₂S CEMS would not be economically feasible and would be technically impractical to implement.

Regulatory Background

The EPA, Region 10 has the authority under 40 CFR 60.13(i) to approve alternatives to any monitoring procedures or requirements of part 60 after considering a written application. In addition, the EPA, Region 10 has the authority under 40 CFR 60.8(b)(4) to waive the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the EPA, Region 10's satisfaction that the affected facility is in compliance with the standard.

Determination

Based upon the information provided, the EPA, Region 10 agrees that, for the specific portable and temporary combustion devices used, as described in your written application, it is impractical to require monitoring via an H₂S CEMS as specified by NSPS Subparts J and Ja. Therefore, in accordance with 40 CFR 60.13(i), the EPA, Region 10 conditionally approves DVT's AMP. In addition, based on DVT's proposed alternate testing protocols to be used during each degassing event, pursuant to 40 CFR 60.8(b)(4), the EPA, Region 10 waives performance testing required by 40 CFR 60.8; 60.106, and 60.104a. Our conditional approval is limited to the monitoring of H₂S for the operations described in your AMP and delineated in the conditions listed below. Nothing in this approval relieves DVT or the owner and operator of the petroleum refinery of the obligations to comply with the requirements of NSPS Subparts J and Ja or any other applicable regulations, including, but not limited to the following:

- The requirement to maintain and operate affected facilities and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, per 40 CFR 60.11(d);
- The prohibition against concealing emissions which would otherwise constitute a violation of an applicable standard, including the use of gaseous diluents to achieve compliance with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere, per 40 CFR 60.12; and

- Applicable State Implementation Plan or permitting requirements.

AMP Approval Conditions

The EPA, Region 10's approval of this AMP is subject to DVT's compliance with the following conditions:

1. Approval of this AMP is limited to monitoring H₂S in fuel gas when degassing tanks, vessels, systems of pipes, and other enclosed equipment at petroleum refineries subject to NSPS J or Ja located in the EPA, Region 10 and combusting the vapors in portable combustion devices. When operating under this AMP, the requirement under 40 CFR 60.105(a)(4) or 60.107a(a)(2) to install and operate a CMS to monitor H₂S concentration in fuel gas is waived for each discrete degassing event.
2. If the refinery has a plan in place for the control and monitoring of degassing operations, the refinery's plan shall remain in effect. These AMP Approval Conditions shall apply in addition to the refinery's plan.
3. Prior to commencing degassing operations, DVT shall obtain the following information from each refinery where DVT conducts degassing operations:
 - (i) a list of the tanks, vessels and piping where degassing operations may occur;
 - (ii) a site plan diagram showing the locations and orientation of the tanks, vessels, and piping where degassing operations will occur and the locations where DVT may locate the portable thermal oxidizers and other equipment necessary for the degassing operations;
 - (iii) the names and titles of responsible refinery individuals who will review and approve degassing grab sample records and log sheets for the refinery;
 - (iv) a list of the materials stored in each tank, vessel, or piping area, and Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for each material;
 - (v) a list of operating restrictions, if any, to ensure that degassing operations conform to special conditions in the refinery's air permits; and,
 - (vi) if applicable, a copy of the refinery's AMP for degassing operations that includes the use of portable control and combustion devices.
4. DVT shall use length of stain tubes (e.g., Draeger) with a minimum detection limit of 200 ppm H₂S to determine the concentration of H₂S in gases entering each DVT portable TOU (i.e., a "grab sample"), as described in the August 17, 2023, AMP written application. Each grab sample shall be taken at the inlet of the mobile TOU. If the concentration of the vent gas stream entering the TOU is less than 100 ppm H₂S, as measured by length of stain tubes, then DVT's handheld portable H₂S monitor may be used to measure concentration in subsequent grab samples. If DVT wishes to exercise the option of using a portable H₂S monitor in lieu of using stain tubes for initial grab samples, the portable monitor shall be a MSA Altair 5X or similar, with a H₂S sensor in the monitor capable of measuring H₂S concentrations from 0-200 ppm with a resolution of 1 ppm.

5. For each discrete degassing event, DVT must collect a grab sample (the “initial grab sample”) for H₂S measurement within 30 minutes of startup of each portable TOU. No monitoring is required during operating periods when the TOU does not combust gases generated by degassing and cleaning events.³
6. If the initial grab sample indicates an H₂S concentration equal to or less than 162 ppmv, then the inlet gas stream is deemed to meet the H₂S limits of NSPS J and Ja, and no further monitoring is required for that discrete degassing event.
7. If the initial grab sample indicates a H₂S concentration more than 162 ppmv, then for that discrete degassing event, the inlet gas stream is deemed to have exceeded the 230 mg/dscm limit of 40 C.F.R. 60.104(a)(1) and the 162 ppmv limit of 40 C.F.R. 60.102a(g)(1)(ii). DVT will immediately stop venting until an H₂S scrubber has been connected and is operational to comply with the applicable H₂S concentration limits of the vent gas stream. After implementation of scrubbing or other concentration reduction measures, DVT will conduct additional testing to demonstrate compliance with the H₂S limits specified in 40 C.F.R. 60.104(a)(1) and 60.102a(g)(1)(ii), by collecting and averaging three valid grab samples as follows⁴:
 - (i) the initial grab sample;
 - (ii) a second grab sample taken between 61 and 120 minutes after startup of the mobile thermal oxidizer unit; and,
 - (iii) a third grab sample taken between 121 and 180 minutes after startup of the mobile TOU.
8. During each discrete degassing event, DVT shall record the following on the forms included in the AMP written application to the EPA, Region 10:
 - (i) the dates, times, locations, and results of each grab sample,
 - (ii) the key activities completed with each degassing operation, and other relevant information, DVT and the petroleum refinery shall keep the records of all grab samples and degassing events for at least five years.
9. Within 5 business days after completion of each discrete degassing event, DVT shall provide the owner or operator of the petroleum refinery where the discrete degassing event is performed the results of each grab sample, as well as a list of all dates and times when any grab sample indicated an H₂S concentration exceeded 162 ppmv. The purpose of this reporting requirement is to provide the owner or operator of the petroleum refinery with the data necessary for inclusion in excess emission reports and monitoring system performance reports required by 40 C.F.R. 60.7(c) (excess emissions reporting for NSPS sources), 40 CFR 70.6(a)(3)(iii)(A) (semiannual monitoring reports for title V sources), 40 CFR 70.6(a)(3)(iii)(B) (prompt reporting of deviations of title V sources), and 40 CFR 70.6(c)(5)(i) (annual compliance certification for title V sources).

³ For example, sampling would not be required during time periods that commercially purchased propane is combusted for the purposes of heating up the TOU/ICE to operating temperature prior to treatment of degassing and cleaning emissions, or during equipment cool down after the device is no longer needed to treat emissions from degassing and cleaning events.

⁴ DVT can use this alternative averaging method of demonstrating compliance only if three valid grab samples are taken as specified and within the designated time periods.

10. Vapors from degassing operations shall be vented only to a TOU which is in full operation as described in the AMP written application, and in compliance with any applicable air permitting requirements established by the state or local jurisdiction where the refinery is located, and in compliance with the implementation plan of the state in which it is operating.
11. Refineries must comply with the other applicable requirements of NSPS Subpart J or Ja that apply to the refinery fuel gas when DVT conducts degassing operations. The use of DVT's portable TOUs for control of H₂S and other refinery fuel gas vent stream pollutants at processes other than the degassing operations represented is not covered or authorized by this conditional AMP.
12. DVT shall follow its internal Standard Operating Procedures (SOP) for operation of the TOUs⁵, as referenced in the company's August 17, 2023, AMP written application. DVT shall review and update the SOP at least once annually to ensure consistency with requirements of the AMP conditional approval, current air permits and authorizations, and applicable federal/state air emission rules. DVT shall also update the list of TOUs used for degassing operations annually to add or remove units as appropriate.

This conditional approval is based upon prior consultation with our Office of Air Quality Planning and Standards and our Office of Enforcement and Compliance Assurance, and similar approvals issued by the EPA. This conditional approval will automatically expire on the effective date of any change to NSPS Subparts J or Ja that directly affects the requirements to monitor H₂S concentrations in fuel gases burned in portable combustion devices. In addition, if DVT's use of portable TOUs during degassing operations changes from the representations made in the AMP written application, this approval will become null and void. Furthermore, if an affected refinery's operations change such that the sulfur content of the off-gas vent streams increases beyond levels specified in this letter, then the refinery must document the change(s) so that DVT may follow appropriate steps in either 40 CFR 60.105(b)(3)(i)-(iii) or 60.107a(b)(3)(i)-(iii), based upon refinery-specific requirements.

The EPA, Region 10's conditional approval should be referenced and attached to each air permit authorization issued for DVT's TOUs in each Region 10 state, where applicable. This conditional approval does not relieve DVT nor the owner or operator of the petroleum refinery where DVT operates from any other applicable requirement, including the applicable general provisions of 40 CFR part 60 or the requirement to obtain permits to construct and/or operate the TOUs. The permitting authority may incorporate the AMP Approval Conditions contained herein into the permit to construct the TOUs, if a construction permit is required. The permitting authority should incorporate the AMP Approval Conditions contained herein into the applicable petroleum refinery's Title V operating permit as the monitoring and related recordkeeping and reporting requirements corresponding to the applicable requirements in 40 CFR 60.104(a)(1) or 40 CFR 60.102a(g)(1)(ii).

⁵ Due to Confidential Business Information concerns, DVT's SOP was not attached to the AMP request. DVT agreed to provide a copy of the SOP via a secure file server upon request.

If you have any questions about this conditional approval, please contact Bryan Holtrop of my staff at (206) 553-4473 or by email at holtrop.bryan@epa.gov.

Sincerely,

KARL PEPPL Digitally signed by KARL PEPPL
Date: 2024.03.27 12:25:30 -07'00'

Karl Pepple, Manager
Air Permits and Toxics Branch

cc: Mr. Jim Plosay
Alaska Department of Environmental Conservation

Ms. Kathy Taylor
Washington Department of Ecology

Mr. Toby Mahar
Northwest Clean Air Agency

Ms. Maria Malave
EPA, OECA

Ms. Brenda Shine
EPA, OAQPS