



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

ELECTRONIC MAIL
DELIVERY RECEIPT REQUESTED

Brita Appoldt
Senior Project Manager
Clean Harbors Industrial Services
lancaster.brita@cleanharbors.com

RE: Request for AMP for H₂S Monitoring for Vapors Combusted in Temporary Combustion Devices Subject to NSPS Subparts J and Ja, Clean Harbors, Various Refineries Located in Region 5

Dear Ms. Appoldt:

The U.S. Environmental Protection Agency has received and reviewed a letter from Clean Harbors Industrial Services (Clean Harbors or you), located in Bakersfield, California, dated May 17, 2021, requesting an Alternative Monitoring Plan (AMP) for Hydrogen Sulfide (H₂S) monitoring of fuel gas in petroleum refineries controlled by a temporary combustion device for emissions control during tank degassing and vapor control projects at various refineries subject to Standards of Performance for Petroleum Refineries (NSPS Subpart J) or Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007 (NSPS Subpart Ja). In summary, EPA approves with conditions the request for alternative monitoring, as explained below.

Background

Clean Harbors performs tank degassing and vapor control projects at refineries. The use of temporary combustion devices to combust vapors that are refinery fuel gas results in the temporary combustion devices being considered fuel gas combustion devices subject to either NSPS Subpart J or NSPS Subpart Ja.

NSPS J at 40 C.F.R. § 60.104(a)(1) prohibits the owner or operator from burning in any fuel gas combustion device any fuel gas that contains hydrogen sulfide in excess of 230 mg/dscm.

NSPS Ja at 40 C.F.R. § 60.102a(g)(1)(ii) prohibits the owner or operator from burning in any fuel gas combustion device any fuel that contains hydrogen sulfide in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and hydrogen sulfide in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis.

NSPS Subpart J and NSPS Subpart Ja at 40 C.F.R. § 60.105(a)(4) and 40 C.F.R. § 60.107a(a)(2), respectively, require the owner or operator of a fuel gas combustion device to install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to monitor and record the concentration of H₂S in fuel gases before being burned in any fuel gas combustion device.

Under the NSPS General Provisions at 40 C.F.R. Part 60 Subpart A, EPA may approve monitoring alternatives. More specifically, 40 C.F.R. § 60.13(i) states that “[a]fter receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part.”

Clean Harbors’ Request

Clean Harbors asked EPA for an AMP for tank degassing and vapor control projects that use temporary combustion devices at refineries. Under the requested AMP, Clean Harbors commits to sampling and testing the vapor stream for H₂S concentration. If the initial sample has a value over 162 ppmv, Clean Harbors will repeat the sampling every 30 minutes for 3 samples and average the H₂S concentration from the three samples. If the average concentration is over 162 ppmv, Clean Harbors will stop the project and place a sulfur reducing scrubber before the temporary combustion device. The project will then be restarted by Clean Harbors, and the sampling procedure will be repeated. Clean Harbors commits to having a sulfur reducing scrubber readily available if high H₂S levels are possible and to installing the sulfur reducing scrubber prior to start-up if high H₂S levels are expected.

Clean Harbors’ request was made in accordance with 40 C.F.R. § 60.13(i), which provides a mechanism for EPA to approve alternatives to monitoring procedures and requirements. You contend that installation of an H₂S CEMS as required by NSPS Subpart J and NSPS Subpart Ja would not be technically practical to implement in applicable situations.

Determination

EPA approves your AMP with conditions for degassing activities and vapor control projects that use temporary combustion devices at refineries located within Region 5 states¹.

Based upon the information provided, EPA agrees that, for the specific portable and temporary combustion devices used, as described in your request, it is impractical to require monitoring via an H₂S CEMS as specified by NSPS Subparts J and Ja. Therefore, in accordance with 40 C.F.R. § 60.13(i), EPA conditionally approves Clean Harbors’ AMP. Our conditional approval is limited to the monitoring of H₂S for the operations described in the following AMP:

1. Clean Harbors shall use either an H₂S colorimetric tube testing or a portable H₂S meter capable of detecting concentration up to 200 ppmv to determine the concentration of H₂S in gases entering each temporary combustion device (the “grab sample”). however, in the event that the measurement range of a stain tube or a portable H₂S meter is exceeded, regardless of the base detection range, Clean Harbors will resample with a length of stain tube or portable H₂S meter

¹ The AMP conditional approval is limited to refineries located within Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.

with the appropriate measurement range to ensure that an accurate measurement is obtained; the concentration measured from the resample will be used in determining compliance, as described in paragraphs 4 and 5. Each grab sample shall be taken at the inlet to each temporary combustion unit.

2. For each discrete degassing event, Clean Harbors shall collect a grab sample for H₂S within 30 minutes of startup of each temporary combustion device (the "initial grab sample"). No monitoring is required during operating periods when the temporary combustion device does not combust gases generated by degassing and cleaning² events.

3. 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.

4. If the initial grab sample indicates an H₂S concentration more than 162 ppmv, then Clean Harbors will conduct two additional tests 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 follows:

- (i) The initial grab sample taken within 30 minutes of startup of the temporary combustion device;
- (ii) A grab sample taken between 31 and 60 minutes after startup of the temporary combustion device; and,
- (iii) A grab sample taken between 61 and 90 minutes after startup of the temporary combustion device.

If the average H₂S concentration of the samples is over 162 ppmv, Clean Harbors will stop the project and install sufficient scrubbing for the H₂S concentration before the temporary combustion device; after the scrubber is installed, the project will be restarted, and the sampling procedure repeated. If the average H₂S concentrations of the samples is over 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).

5. Clean Harbors shall have a scrubber installed prior to the start of the project if Clean Harbors expects, based on product knowledge or sampling, that H₂S levels will exceed 162 ppmv. Clean Harbors shall have a scrubber available for mobilization to the project site if high H₂S levels are possible but not expected.

6. Clean Harbors shall record the results of each grab sample (including the date, time, and sampling operator), the key activities completed with each degassing operation, and other relevant information. Clean Harbors shall keep the records of all grab samples and degassing events for at least five years.

² For example, sampling would not be required during time periods that commercially purchased propane is combusted for the purpose of heating up the temporary combustion device 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.

7. Within 5 business days after each discrete degassing event, Clean Harbors 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. One purpose of this reporting requirement is to provide the owner or operator of the 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).

8. Clean Harbors shall only vent vapors from degassing operations to a temporary combustion device which is in full operation, as described in the AMP request, and which has been issued an air permit, or other appropriate air emissions authorization, in the State where the petroleum refinery is located.

9. Refineries must comply with the other applicable requirements of NSPS Subpart J or Ja that apply to the refinery fuel gas when Clean Harbors conducts degassing operations. The use of Clean Harbors' temporary combustion devices 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.

This conditional approval is consistent with prior approvals issued by Region 5. This conditional approval will automatically expire on the effective date of any change to NSPS Subpart J or NSPS Subpart Ja that may directly affect the requirements to monitor H₂S concentrations in fuel gases burned in temporary combustion devices. In addition, if Clean Harbors' use of temporary combustion devices during degassing operations changes from the representations made in the AMP request, 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 the AMP, then the refinery must document the change(s) so that Clean Harbors may follow appropriate steps in either 40 C.F.R. §§ 60.105(b)(3)(i)-(iii) or 60.107a(b)(3)(i)-(iii), based upon refinery-specific requirements.

If you have any further questions, please contact Natalie Schulz of my staff at (312) 886-2776 or schulz.natalie@epa.gov.

Sincerely,

Harris,
Michael

 Digitally signed by Harris,
Michael
Date: 2021.09.07
12:19:08 -05'00'

Michael D. Harris
Division Director
Enforcement and Compliance Assurance Division

cc: Kent Mohr, Manager
Compliance Section, Bureau of Air
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Program