CA

66264.1034 Test Methods and Procedures

(a)

Each owner or operator subject to the provisions of this article shall comply with the test methods, procedures and requirements provided in this section.

(b)

When a closed-vent system is tested for compliance with no detectable emissions, as required in Section 66264.1033 (l), the test shall comply with the following requirements: (1) monitoring shall comply with Reference Method 21 in 40 CFR, Part 60 ; (2) the detection instrument shall meet the performance criteria of Reference Method 21 in 40 CFR, part 60 ; (3) the instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21 in 40 CFR, part 60 ; and (4) calibration gases shall be: (A) zero air (less than 10 ppm of hydrocarbon in air); and (B) a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane; and (5) the background level shall be determined as set forth in Reference Method 21 in 40 CFR, part 60 ; (6) the instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21 in 40 CFR, part 60 ; and (7) the arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(1)

monitoring shall comply with Reference Method 21 in 40 CFR, Part 60 ;

(2)

the detection instrument shall meet the performance criteria of Reference Method 21 in 40 CFR, part 60 ;

(3)

the instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21 in 40 CFR, part 60 ; and

(4)

calibration gases shall be: (A) zero air (less than 10 ppm of hydrocarbon in air); and (B) a mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane; and

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the background level shall be determined as set forth in Reference Method 21 in 40 CFR, part 60 ;

(6)

the instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21 in 40 CFR, part 60 ; and

(7)

the arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(c)

Performance tests to determine compliance with Section 66264.1032(a) and with the total organic compound concentration limit of Section 66264.1033(c) shall comply with the following: (1) performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures: (A) method 2 in 40 CFR, Part 60 for velocity and volumetric flow rate; (B) method 18 in 40 CFR, Part 60 for organic content; (C) each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis; (D) total organic mass flow rates shall be determined by the following equation: n Eh = Qsd { [SIGMA] Ci MWi } [0.0416] [10-6] i=1 where: Eh =Total organic mass flow rate, kg/h; Qsd =Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dry standard m3 /h; n =Number of organic compounds in the vent gas; Ci =Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18; MWi =Molecular weight of organic compound i in the vent gas, kg/kg-mol; 0.0416=Conversion factor for molar volume, kg-mol/m3 (at 293 K and 760 mm Hg); 10-6 =Conversion from ppm, ppm-1. (E) the annual total organic emission rate shall be determined by the following equation: EA = (Eh) (H) where: EA =Total organic mass emission rate, kg/y; Eh =Total organic mass flow rate for the process vent, kg/h; H =Total annual hours of operations for the affected unit, h. (F) total organic emissions

from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (Eh as determined in subsection (c)(1)(D) of this section) and by summing the annual total organic mass emission rates (EA, as determined in subsection (c)(1)(E) of this section) for all affected process vents at the facility. (2) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operators during periods of start-up, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test. (3) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:(A) sampling ports adequate for the test methods specified in subsection (c)(1) of this section; (B) safe sampling plateform(s); (C) safe access to sampling plateform(s); and (D) utilities for sampling and testing equipment. (4) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner's or operator's control, compliance may, upon the Department's written approval, be determined using the average of the results of the two other runs.

(1)

performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures: (A) method 2 in 40 CFR, Part 60 for velocity and volumetric flow rate; (B) method 18 in 40 CFR, Part 60 for organic content; (C) each performance test shall consist of three

separate runs; each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis; (D) total organic mass flow rates shall be determined by the following equation: n Eh = Qsd { [SIGMA] Ci MWi } [0.0416] [10-6] i=1 where: Eh =Total organic mass flow rate, kg/h; Qsd =Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dry standard m3 /h; n =Number of organic compounds in the vent gas; Ci =Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18; MWi =Molecular weight of organic compound i in the vent gas, kg/kg-mol; 0.0416=Conversion factor for molar volume, kg-mol/m3 (at 293 K and 760 mm Hg); 10-6 =Conversion from ppm, ppm-1. (E) the annual total organic emission rate shall be determined by the following equation: EA = (Eh) (H) where: EA =Total organic mass emission rate, kg/y; Eh =Total organic mass flow rate for the process vent, kg/h; H =Total annual hours of operations for the affected unit, h. (F) total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (Eh as determined in subsection (c)(1)(D) of this section) and by summing the annual total organic mass emission rates (EA, as determined in subsection (c)(1)(E) of this section) for all affected process vents at the facility.

(A)

method 2 in 40 CFR, Part 60 for velocity and volumetric flow rate;

(B)

method 18 in 40 CFR, Part 60 for organic content;

(C)

each performance test shall consist of three separate runs; each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis;

(D)

total organic mass flow rates shall be determined by the following equation: n Eh = Qsd { [SIGMA] Ci MWi } [0.0416] [10-6] i=1 where: Eh =Total organic mass flow rate, kg/h; Qsd =Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dry standard m3 /h; n =Number of organic compounds in the vent gas; Ci =Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18; MWi =Molecular weight of organic compound i in the vent gas, kg/kg-mol; 0.0416=Conversion factor for molar volume, kg-mol/m3 (at 293 K and 760 mm Hg); 10-6 =Conversion from ppm, ppm-1.

(E)

the annual total organic emission rate shall be determined by the following equation: EA = (Eh) (H) where: EA =Total organic mass emission rate, kg/y; Eh =Total organic mass flow rate for the process vent, kg/h; H =Total annual hours of operations for the affected unit, h.

(F)

total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (Eh as determined in subsection (c)(1)(D) of this section) and by summing the annual total organic mass emission rates (EA, as determined in subsection (c)(1)(E) of this section) for all affected process vents at the facility.

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The owner or operator shall record such process information as may be necessary to

determine the conditions of the performance tests. Operators during periods of start-up, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(3)

The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:(A) sampling ports adequate for the test methods specified in subsection (c)(1) of this section; (B) safe sampling plateform(s); (C) safe access to sampling plateform(s); and (D) utilities for sampling and testing equipment.

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(B)

safe sampling plateform(s);

(C)

safe access to sampling plateform(s); and

(D)

utilities for sampling and testing equipment.

(4)

For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner's or operator's control, compliance may, upon the Department's written approval, be determined using the average of the results of the two other runs.

(d)

To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this article, the owner or operator shall make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods: (1) direct measurement of the organic concentration of the waste using the following procedures: (A) the owner or operator shall take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration; (B) for waste generated on-site, the grab samples shall be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated off-site, the grab samples shall be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a truck and the waste is not diluted or mixed with other waste; (C) each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8260 of SW-846 third edition and updates, as incorporated by reference under Section 66260.11; (D) the arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average shall be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit; (2) Using knowledge of

the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior specification analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(1)

direct measurement of the organic concentration of the waste using the following procedures: (A) the owner or operator shall take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration; (B) for waste generated on-site, the grab samples shall be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated off-site, the grab samples shall be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a truck and the waste is not diluted or mixed with other waste; (C) each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8260 of SW-846 third edition and updates, as incorporated by reference under Section 66260.11; (D) the arithmetic mean of the results of the analyses of the four samples

shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average shall be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit;

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the owner or operator shall take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration;

(B)

for waste generated on-site, the grab samples shall be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated off-site, the grab samples shall be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a truck and the waste is not diluted or mixed with other waste;

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each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8260 of SW-846 third edition and updates, as incorporated by reference under Section 66260.11;

(D)

the arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average shall be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each

waste stream managed in the unit;

(2)

Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior specification analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

(e)

The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted, annual average total organic concentrations less than 10 ppmw shall be made as follows: (1) by the effective date that the facility becomes subject to the provisions of this article or by the date when the waste is first managed in a waste management unit, whichever is later; and (A) for continuously generated waste, annually, or (B) whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

(1)

by the effective date that the facility becomes subject to the provisions of this article or by the date when the waste is first managed in a waste management unit, whichever is later; and (A) for continuously generated waste, annually, or (B) whenever there is a

change in the waste being managed or a change in the process that generates or treats the waste.

(A)

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(B)

whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

(f)

When an owner or operator and the Department do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manage a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the procedures in Method 8260 of SW-846 third edition and updates, (as incorporated by reference in Section 66260.11 of this division), shall be used to resolve the dispute.