
NESHAP Worksheet

You have chosen to operate the collection system and control device in accordance with the NESHAP provisions of §63.1958, §63.1960, and §63.1961, instead of the corresponding NSPS provisions of §60.763, §60.765, and §60.766. You must comply with the NSPS requirements except for the provisions you have chosen to comply with in the NESHAP.

- The applicable NSPS provisions for your landfill are contained in the NSPS Worksheet generated by the choices you made navigating the RegNav tool for subpart XXX NSPS.
- The applicable NESHAP provisions for this compliance option are included in this NESHAP Worksheet.

To identify your compliance path, navigate the NSPS provisions in Subpart XXX (in your NSPS Worksheet) and the NESHAP provisions in Subpart AAAA (at the bottom of this NESHAP Worksheet), make substitutions, and follow rule citations and references. If you have questions as to which provisions and requirements apply to your specific landfill, contact your state or local permitting authority.

The following “crosswalk” table shows the corresponding requirements between §60.763, §60.765, and §60.766 and §63.1958, §63.1960, and §63.1961, respectively. Examine your NSPS Worksheet and, using the crosswalk table, note the applicable NESHAP provisions in §63.1958, §63.1960, and §63.1961. For example, if your NSPS Worksheet includes all of the paragraphs §60.763(a) through §60.763(g), you will comply with the corresponding NESHAP provisions for §63.1958(a) through §63.1958(g), as shown in the crosswalk table. You may wish to highlight the applicable NESHAP paragraphs in a printed copy of this NESHAP Worksheet. Follow the same process for the NSPS requirements in §60.765 and §60.766 as shown in your NSPS Worksheet.

Because all of the paragraphs in the NSPS may not apply to your particular landfill, be careful to choose only the NESHAP provisions in §63.1958, §63.1960, and §63.1961 that correspond to the applicable NSPS provisions in your NSPS Worksheet in §60.763, §60.765, and §60.766. You will comply with these NESHAP provisions. Full text of NESHAP provisions §63.1958, §63.1960, and §63.1961 are included at the end of this worksheet.

1 Disclaimer: The content provided in this software tool is intended solely as assistance for potential reporters to aid in assessing requirements for compliance under the Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014, 40 CFR Part 60 Subpart XXX. Any variation between the rule and the information provided in this tool is unintentional, and, in the case of such variations, the requirements of the rule govern. Use of this tool does not constitute an assessment by EPA of the applicability of the rule to any particular facility. In any particular case, EPA will make its assessment by applying the law and regulations to the specific facts of the case.
## Subpart XXX — Subpart AAAA Crosswalk

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At the end of this worksheet are the NESHAP Provisions in §63.1958, §63.1960, and §63.1961. You must comply with any of these provisions that you determined to be applicable using the crosswalk and your NSPS Worksheet. You must also comply with any other NESHAP provisions that the applicable provisions in §63.1958, §63.1960, and §63.1961 may cross reference.

Blue-highlighted text identifies significant differences between the NSPS provisions and the NESHAP provisions, which can be summarized as follows:

- Submit records of positive pressure with the semi-annual reports in 63.1981(h).
- Operate wellhead with temperature <145 °F. Conduct enhanced monitoring for wellheads with temperatures >145 °F and maintain records. Follow corrective action procedures for wellheads with temperatures exceeding 145 F. Report any temperature readings that exceed 145 °F in semi-annual reports.
- If a temperature measured at the well is ≥ 170 °F and the CO concentration is > 1,000 ppmv, the corrective action(s) must be completed within 15 days.
- If you comply using an active collection system, you must file reports semi-annually. Data for any exceedances, enhanced monitoring, corrective actions, and high temperature must be included in the semi-annual reports.
- Comply with § 63.1955(c): Operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

§ 63.1958 Operational standards for collection and control systems

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of § 63.1957 must:

§ 63.1958(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

1. 5 years or more if active; or
2. 2 years or more if closed or at final grade;

§ 63.1958(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

1. A fire or increased well temperature. The owner or operator must record instances when positive pressure occurs in efforts to avoid a fire. These records must be submitted with the semi-annual reports as provided in § 63.1981(h);
2. Use of a geomembrane or synthetic cover. The owner or operator must develop acceptable pressure limits in the design plan;
3. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes must be approved by the Administrator as specified in § 63.1981(d)(2);
§ 63.1958(c)

(1) Operate each interior wellhead in the collection system with a landfill gas temperature less than 62.8 degrees Celsius (145 degrees Fahrenheit).

(2) The owner or operator may establish a higher operating temperature value at a particular well. A higher operating value demonstration must be submitted to the Administrator for approval and must include supporting data demonstrating that the elevated parameter neither causes fires nor significantly inhibits anaerobic decomposition by killing methanogens. The demonstration must satisfy both criteria in order to be approved (i.e., neither causing fires nor killing methanogens is acceptable).

§ 63.1958(d)

(1) Operate the collection system so that the methane concentration is less than 500 parts per million (ppm) above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator must conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at no more than 30-meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan must be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30-meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(2) The owner or operator must:

   (i) Conduct surface testing using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in § 63.1960(d).

   (ii) Conduct surface testing at all cover penetrations. Thus, the owner or operator must monitor any cover penetrations that are within an area of the landfill where waste has been placed and a gas collection system is required.

   (iii) Determine the latitude and longitude coordinates of each exceedance using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

§ 63.1958(e)

(1) Operate the system in accordance to § 63.1955(c) such that all collected gases are vented to a control system designed and operated in compliance with § 63.1959(b)(2)(iii). In the event the collection or control system is not operating:

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1 Higher operating values that have been previously approved under another MSW Landfills NSPS or EG regulation will not have to seek pre-approval for that higher operating value under the provisions in the NESHAP (§ 63.1961(a)(5)).
(i) The gas mover system must be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere must be closed within 1 hour of the collection or control system not operating; and

(ii) Efforts to repair the collection or control system must be initiated and completed in a manner such that downtime is kept to a minimum, and the collection and control system must be returned to operation.

§ 63.1958(f) Operate the control system at all times when the collected gas is routed to the system.

§ 63.1958(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action must be taken as specified in § 63.1960(a)(3) and (5) or § 63.1960(c). If corrective actions are taken as specified in § 63.1960, the monitored exceedance is not a deviation of the operational requirements in this section.

§ 63.1960 Compliance provisions

(a) Except as provided in § 63.1981(d)(2), the specified methods in paragraphs (a)(1) through (6) of this section must be used to determine whether the gas collection system is in compliance with § 63.1959(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 63.1959(b)(2)(ii)(C)(1), either Equation 5 or Equation 6 must be used. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator. The methane generation rate constant (k) and methane generation potential (Lo) kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in § 63.1959(a)(4), the value of k determined from the test must be used. A value of no more than 15 years must be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

\[ Q_m = 2L_0R \left( e^{-kc} - e^{-kt} \right) \]  (Eq. 5)

Where:

\( Q_m \) = Maximum expected gas generation flow rate, cubic meters per year.

\( L_0 \) = Methane generation potential, cubic meters per megagram solid waste.

\( R \) = Average annual acceptance rate, megagrams per year.

\( k \) = Methane generation rate constant, year\(^{-1}\).

\( t \) = Age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill,
whichever is less. If the equipment is installed after closure, \( t \) is the age of the landfill at installation, years.

\[ c = \text{Time since closure, years (for an active landfill } c = 0 \text{ and } e^{-kc} = 1). \]

\[ 2 = \text{Constant} \]

(ii) For sites with known year-to-year solid waste acceptance rate:

\[ Q_M = \sum_{i=1}^{n} 2kL_0 M_i (e^{-kt_i}) \]  
(Eq. 6)

Where:

\( Q_m \) = Maximum expected gas generation flow rate, cubic meters per year.

\( k \) = Methane generation rate constant, year\(^{-1}\).

\( L_0 \) = Methane generation potential, cubic meters per megagram solid waste.

\( M_i \) = Mass of solid waste in the \( i^{th} \) section, megagrams.

\( t_i \) = Age of the \( i^{th} \) section, years.

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, Equation 5 or Equation 6 in paragraphs (a)(1)(i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using Equation 5 or Equation 6 in paragraph (a)(1)(i) or (ii) of this section or other methods must be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with § 63.1959(b)(2)(ii)(B)(2), the owner or operator must design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 63.1959(b)(2)(ii)(B)(3), the owner or operator must measure gauge pressure in the gas collection header applied to each individual well monthly. Any attempted corrective measure must not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(i) If a positive pressure exists, action must be initiated to correct the exceedance within 5 days, except for the three conditions allowed under § 63.1958(b).

(A) If negative pressure cannot be achieved without excess air infiltration within 15 days of the first measurement of positive pressure, the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure was first measured. The owner or operator must keep records according to § 63.1983(e)(3).
(B) If corrective actions cannot be fully implemented within 60 days following the positive pressure measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure measurement. The owner or operator must submit the items listed in § 63.1981(h)(7) as part of the next semi-annual report. The owner or operator must keep records according to § 63.1983(e)(5).

(C) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the Administrator, according to § 63.1981(j). The owner or operator must keep records according to § 63.1983(e)(5).

(ii) [Reserved]

(4)

(i) Once an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with the operational standard for temperature in § 63.1958(c)(1), the owner or operator must monitor each well monthly for temperature. If a well exceeds the operating parameter for temperature as provided in § 63.1958(c)(1), action must be initiated to correct the exceedance within 5 days. Any attempted corrective measure must not cause exceedances of other operational or performance standards.

(A) If a landfill gas temperature less than or equal to 62.8 degrees Celsius (145 degrees Fahrenheit) cannot be achieved within 15 days of the first measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit), the owner or operator must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit) was first measured. The owner or operator must keep records according to § 63.1983(e)(3).

(B) If corrective actions cannot be fully implemented within 60 days following the temperature measurement for which the root cause analysis was required, the owner or operator must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit). The owner or operator must submit the items listed in § 63.1981(h)(7) as part of the next semi-annual report. The owner or operator must keep records according to § 63.1983(e)(4).

(C) If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the owner or operator must submit the root cause
analysis, corrective action analysis, and corresponding implementation timeline to the Administrator, according to § 63.1981(h)(7) and § 63.1981(j). The owner or operator must keep records according to § 63.1983(e)(5).

(D) If a landfill gas temperature measured at either the wellhead or at any point in the well is greater than or equal to 76.7 degrees Celsius (170 degrees Fahrenheit) and the carbon monoxide concentration measured, according to the procedures in § 63.1961(a)(5)(vi) is greater than or equal to 1,000 ppmv the corrective action(s) for the wellhead temperature standard (62.8 degrees Celsius or 145 degrees Fahrenheit) must be completed within 15 days.

(5) An owner or operator seeking to demonstrate compliance with § 63.1959(b)(2)(ii)(B)(4) through the use of a collection system not conforming to the specifications provided in § 63.1962 must provide information satisfactory to the Administrator as specified in § 63.1981(c)(3) demonstrating that off-site migration is being controlled.

§ 63.1960(b) For purposes of compliance with § 63.1958(a), each owner or operator of a controlled landfill must place each well or design component as specified in the approved design plan as provided in § 63.1981(b)². Each well must be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

§ 63.1960(c) The following procedures must be used for compliance with the surface methane operational standard as provided in § 63.1958(d).

(1) After installation and startup of the gas collection system, the owner or operator must monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration must be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring must be performed in accordance with section 8.3.1 of EPA Method 21 of appendix A-7 of part 60 of this chapter, except that the probe inlet must be placed within 5 to 10 centimeters of the ground. Monitoring must be performed during typical meteorological conditions.

(4) Any reading of 500 ppm or more above background at any location must be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4)(i) through (v) of

² This cross reference should be to § 63.1981(d) ...each owner or operator subject to the provisions of § 63.1959(b)(2) must submit a collection and control system design plan to the Administrator according to paragraphs (d)(1) through (6) of § 63.1981. Correction to the cross reference error is pending.
this section must be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of § 63.1958(d).

(i) The location must be recorded using an instrument with an accuracy of at least 4 meters. The coordinates must be in decimal degrees with at least five decimal places.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance must be made and the location must be re-monitored within 10 days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section must be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) of this section has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4)(ii) or (iii) of this section must be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 ppm above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in paragraph (c)(4)(iii) or (v) of this section must be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period, a new well or other collection device must be installed within 120 days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator must implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

§ 63.1960(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section must comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer must meet the instrument specifications provided in section 6 of EPA Method 21 of appendix A of part 60 of this chapter, except that “methane” replaces all references to “VOC”.

(2) The calibration gas must be methane, diluted to a nominal concentration of 500 ppm in air.
(3) To meet the performance evaluation requirements in section 8.1 of EPA Method 21 of appendix A of part 60 of this chapter, the instrument evaluation procedures of section 8.1 of EPA Method 21 of appendix A of part 60 must be used.

(4) The calibration procedures provided in sections 8 and 10 of EPA Method 21 of appendix A of part 60 of this chapter must be followed immediately before commencing a surface monitoring survey.

§ 63.1960(e)

(2) Once an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with the operational standard in § 63.1958(c)(1), the provisions of this subpart apply at all times, including periods of SSM. During periods of SSM, you must comply with the work practice requirement specified in § 63.1958(e) in lieu of the compliance provisions in § 63.1960.

§ 63.1961 Monitoring of operations

Except as provided in § 63.1981(d)(2):

(a) Each owner or operator seeking to comply with § 63.1959(b)(2)(ii)(B) for an active gas collection system must install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in § 63.1960(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as follows:

(i) The nitrogen level must be determined using EPA Method 3C of appendix A-2 to part 60 of this chapter, unless an alternative test method is established as allowed by § 63.1981(d)(2).

(ii) Unless an alternative test method is established as allowed by § 63.1981(d)(2), the oxygen level must be determined by an oxygen meter using EPA Method 3A or 3C of appendix A-2 to part 60 of this chapter or ASTM D6522-11 (incorporated by reference, see § 63.14). Determine the oxygen level by an oxygen meter using EPA Method 3A or 3C of appendix A-2 to part 60 or ASTM D6522-11 (if sample location is prior to combustion) except that:

(A) The span must be set between 10 and 12 percent oxygen;

(B) A data recorder is not required;

(C) Only two calibration gases are required, a zero and span;

(D) A calibration error check is not required; and

(E) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(iii) A portable gas composition analyzer may be used to monitor the oxygen levels provided:
(A) The analyzer is calibrated; and

(B) The analyzer meets all quality assurance and quality control requirements for EPA Method 3A of appendix A-2 to part 60 of this chapter or ASTM D6522-11 (incorporated by reference, see § 63.14).

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with the operational standard for temperature in § 63.1958(c)(1), monitor temperature of the landfill gas on a monthly basis as provided in § 63.1960(a)(4). The temperature measuring device must be calibrated annually using the procedure in Section 10.3 of EPA Method 2 of appendix A-1 to part 60 of this chapter. Keep records specified in § 63.1983(e).

(5) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with the operational standard for temperature in § 63.1958(c)(1), unless a higher operating temperature value\(^3\) has been approved by the Administrator under this subpart or under 40 CFR part 60, subpart WWW; 40 CFR part 60, subpart XXX; or a federal plan or EPA-approved and effective state plan or tribal plan that implements either 40 CFR part 60, subpart Cc or 40 CFR part 60, subpart Cf, you must initiate enhanced monitoring at each well with a measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit) as follows:

(i) Visual observations for subsurface oxidation events (smoke, smoldering ash, damage to well) within the radius of influence of the well.

(ii) Monitor oxygen concentration as provided in paragraph (a)(2) of this section;

(iii) Monitor temperature of the landfill gas at the wellhead as provided in paragraph (a)(4) of this section.

(iv) Monitor temperature of the landfill gas every 10 vertical feet of the well as provided in paragraph (a)(6) of this section.

(v) Monitor the methane concentration with a methane meter using EPA Method 3C of appendix A-6 to part 60, EPA Method 18 of appendix A-6 to part 60 of this chapter, or a portable gas composition analyzer to monitor the methane levels provided that the analyzer is calibrated and the analyzer meets all quality assurance and quality control requirements for EPA Method 3C or EPA Method 18.

(vi) Monitor carbon monoxide concentrations, as follows:

(A) Collect the sample from the wellhead sampling port in a passivated canister or multi-layer foil gas sampling bag (such as the Cali-5-Bond Bag) and analyze that sample using Method 10 of appendix A-4 to part 60 of this chapter, or an equivalent method with a detection limit of at least 100 ppmv of carbon monoxide in high concentrations of methane; and

\(^3\) Higher operating values that have been previously approved under another MSW Landfill NSPS or EG regulation will not have to seek pre-approval for that higher operating value under the provisions in the NESHAP (§ 63.1961(a)(5)).
(B) Collect and analyze the sample from the wellhead using EPA Method 10 of appendix A-4 to part 60 to measure carbon monoxide concentrations.

(vii) The enhanced monitoring in paragraph (a)(5) of this section must begin seven days after the first measurement of landfill gas temperature greater than 62.8 degrees Celsius (145 degrees Fahrenheit); and

(viii) The enhanced monitoring in paragraph (a)(5) of this section must be conducted on a weekly basis. If four consecutive weekly CO readings are under 100 ppmv, then enhanced monitoring may be decreased to monthly. However, if CO readings exceed 100 ppmv again, the landfill must return to weekly monitoring.

(ix) The enhanced monitoring in paragraph (a)(5) of this section can be stopped once a higher operating value is approved, at which time the monitoring provisions issued with the higher operating value should be followed, or once the measurement of landfill gas temperature at the wellhead is less than or equal to 62.8 degrees Celsius (145 degrees Fahrenheit).

(6) For each wellhead with a measurement of landfill gas temperature greater than or equal to 73.9 degrees Celsius (165 degrees Fahrenheit), annually monitor temperature of the landfill gas every 10 vertical feet of the well. This temperature can be monitored either with a removable thermometer, or using temporary or permanent thermocouples installed in the well.

§ 63.1961(b) Each owner or operator seeking to comply with § 63.1959(b)(2)(iii) using an enclosed combustor must calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to the control device and bypass of the control device (if applicable). The owner or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that must record the flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

§ 63.1961(c) Each owner or operator seeking to comply with § 63.1959(b)(2)(iii) using a non-enclosed flare must install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame; and
(2) A device that records flow to the flare and bypass of the flare (if applicable). The owner
or operator must:

(i) Install, calibrate, and maintain a gas flow rate measuring device that records the
flow to the control device at least every 15 minutes; and

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key
type configuration. A visual inspection of the seal or closure mechanism must be
performed at least once every month to ensure that the valve is maintained in the
closed position and that the gas flow is not diverted through the bypass line.

§ 63.1961(d) Each owner or operator seeking to demonstrate compliance with §
63.1959(b)(2)(iii) using a device other than a non-enclosed flare or an enclosed combustor
or a treatment system must provide information satisfactory to the Administrator as
provided in § 63.1981(d)(2) describing the operation of the control device, the operating
parameters that would indicate proper performance, and appropriate monitoring
procedures. The Administrator must review the information and either approve it, or
request that additional information be submitted. The Administrator may specify additional
appropriate monitoring procedures.

§ 63.1961(e) Each owner or operator seeking to install a collection system that does not meet
the specifications in § 63.1962 or seeking to monitor alternative parameters to those
required by § 63.1958 through § 63.1961 must provide information satisfactory to the Administrator as
provided in §§ 63.1981(d)(2) and (3) describing the design and operation
of the collection system, the operating parameters that would indicate proper performance,
and appropriate monitoring procedures. The Administrator may specify additional
appropriate monitoring procedures.

§ 63.1961(f) Each owner or operator seeking to demonstrate compliance with the 500 parts per
million surface methane operational standard in § 63.1958(d) must monitor surface
concentrations of methane according to the procedures in § 63.1960(c) and the instrument
specifications in § 63.1960(d). If you are complying with the 500 parts per million surface
methane operational standard in § 63.1958(d)(2), for location, you must determine the
latitude and longitude coordinates of each exceedance using an instrument with an
accuracy of at least 4 meters and the coordinates must be in decimal degrees with at least
five decimal places. In the semi-annual report in § 63.1981(i)\(^4\), you must report the location
of each exceedance of the 500 parts per million methane concentration as provided in
§ 63.1958(d) and the concentration recorded at each location for which an exceedance was
recorded in the previous month. Any closed landfill that has no monitored exceedances of
the operational standard in three consecutive quarterly monitoring periods may skip to
annual monitoring. Any methane reading of 500 ppm or more above background detected
during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

\(^4\) This cross reference should be to § 63.1981(h) Semi-annual report. Correction to the cross reference error is
pending.
§ 63.1961(g) Each owner or operator must maintain and operate all monitoring systems associated with the treatment system in accordance with the site-specific treatment system monitoring plan required in § 63.1983(b)(5)(ii). The owner or operator must:

(1) Install, calibrate, and maintain a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes; and

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism must be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

§ 63.1961(h) The monitoring requirements of paragraphs (a), (b), (c), (d), and (g) of this section apply at all times the affected source is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with the temperature and nitrogen or oxygen operational standards in introductory paragraph §§ 63.1958(c)(1), 63.1958(d)(2), and 63.1958(e)(1), the standards apply at all times.