3745-27-84 Monitoring, notification, and annual reporting requirements.

For the duration of the authorization to stabilize waste through bulk liquid addition, the owner or operator shall comply with paragraphs (A) to (D) of this rule. For twenty years after commencing bulk liquid addition, the owner or operator shall comply with paragraphs (A)(4)(a), (D)(3)(c), and (D)(4)(k)(ii) of this rule.

(A) The owner or operator shall monitor for the following:

(1) Odors, in accordance with the issued authorization to stabilize waste though bulk liquid addition.

(2) Indications of fire in the area designated for bulk liquid addition, including the following:

(a) Monthly monitoring of the temperature of landfill gas.

(b) When the temperature of landfill gas at a wellhead is measured above one hundred thirty degrees Fahrenheit, carbon monoxide concentration in landfill gas at the wellhead.

(c) If the sanitary landfill facility is operating under aerobic conditions, annual monitoring of the temperature of the waste.

(3) Progress or degree of waste stabilization in the designated research, development, or demonstration project area and in the control group, including the following:

(a) Annual testing of the cellulose to lignin ratio, biological methane potential, and per cent volatile solids of the incoming and disposed waste.

(b) Quarterly analysis of leachate from the leachate collection and management system in the designated research, development, or demonstration project area and in the control area, if one is employed, for the following parameters:

(i) Parameters listed in appendix I of rule 3745-27-10 of the Administrative Code.

(ii) Biochemical oxygen demand.

(iii) Chemical oxygen demand.

(iv) Field analysis for pH.

(v) Field analysis for temperature.

(vi) Field analysis for specific conductance.

(vii) Other parameters required by the issued authorization to stabilize waste through bulk liquid addition.

(c) Monthly monitoring of landfill gas flow rates from each gas collection well.

(d) Quarterly monitoring of landfill gas for moisture content and per cent methane by volume.

(e) Any additional monitoring required by the issued authorization to stabilize waste through bulk liquid addition.

(4) Impact on the flexible membrane liner component of the composite liner system in the designated research, development, or demonstration project area, including the following:

(a) Prior to commencement of bulk liquid addition, the owner or operator shall place a sufficient number of flexible membrane liner coupons in a sump, or other comparable location, in the designated research, development, or demonstration project area where the coupons will be continuously exposed to the leachate and are easily retrievable to provide for annual sampling for twelve years. The coupons shall be tested in accordance with ASTM D5747 (chemical resistance) in conjunction with ASTM D5496 (field immersion).

ASTM D5747 and ASTM D5496 are hereby made a part of this rule. ASTM standards are regulated by the date specified, another standard may be used if it is at least equivalent to those cited in this rule and is acceptable to Ohio EPA. Information and copies may be obtained by writing to: "ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959." These documents are available for purchase at http://www.astm.org.

ASTM D5747-08, "Standard Practice for Tests to Evaluate the Chemical Resistance of Geomembranes to Liquids;" approved in 1995; reapproved in 2002; amended in 2008.

ASTM D5496-98(2009), "Standard Practice for In Field Immersion Testing of Geosynthetics ;" approved in 1998; reapproved in 2003 and 2009.

(b) Any additional monitoring of impact on the flexible membrane liner required by the issued authorization to stabilize waste through bulk liquid addition.

(5) Liquid addition, including the following:

(a) Daily monitoring of the amount of liquid added, including leachate, water, bulk liquids, and precipitation.

(b) Daily monitoring of the amount of leachate collected from the leachate collection and management system in the designated research, development, or demonstration project area and from the control area, if one is employed.

(c) Annual testing of moisture content in the disposed waste in the designated research, development, or demonstration project area.

(6) Annually, a ground survey of surface elevation control points in the designated research, development, or demonstration project area and in the control area, if one is employed.

(B) Notification of fire.

(1) Indications of fire. If any of the following is observed or occurs in the designated research, development, or demonstration project area, the owner or operator shall comply with paragraph (B)(2) of this rule:

(a) Flames or embers.

(b) Temperature of landfill gas at the wellhead is measured above one hundred fifty degrees Fahrenheit.

(c) Waste temperature is measured above one hundred seventy degrees Fahrenheit.

(d) Carbon monoxide concentration in landfill gas at a wellhead is measured above one thousand parts per million by volume.

(2) Not later than twenty-four hours after detection of an indication of fire pursuant to paragraph (B)(1) of this rule, the owner or operator shall notify the appropriate district office of the Ohio EPA and the approved board of health. The notification shall include the following:

(a) A description of the incident.

(b) Whether the local fire department or other emergency personnel were called and have entered the sanitary landfill facility in response to the incident.

(c) Whether the integrity or effectiveness of any engineered component at the facility was damaged or failed as a result of the incident.

(C) Notification of operational issues. The owner or operator shall notify the appropriate district office of the Ohio EPA and the approved board of health in writing not later than one week after any of the following occurrences:

(1) Commencement of the bulk liquid addition approved in the permit to install.

(2) If during the three month period after commencement of bulk liquid addition, the following:

(a) Odor complaints received by the owner or operator.

(b) Any difficulties with monitoring the depth of leachate in the research, development, or demonstration project area.

(c) Any difficulties with the liquid introduction system.

(d) Any difficulties associated with a certain type of liquid or solid waste (such as odors or increased temperature).

(e) Any difficulties related to the function of the composite liner system.

(3) Indications of excessive liquid addition, including but not limited to:

(a) The amount of liquid addition exceeds the amount of liquid addition authorized in the issued authorization to stabilize waste through bulk liquid addition.

(b) The depth of leachate on the composite liner system exceeds one foot.

(c) The amount of leachate collected from the leachate collection and management system in the designated research, development, or demonstration project area exceeds the calculated amount of liquid that can be added without exceeding one foot of head on the composite liner system, or two thousand gallons per acre per day, whichever is less.

(d) Leachate outbreaks with a constant liquid output and flow down the side slope are observed by the owner or operator.

(e) Abnormal vibration or shaking caused by traffic is detected when standing on the waste several feet away.

(f) Trucks or vehicles sinking into soft waste, particularly if the waste is wet or saturated, where the sinking is persistent and not weather-related.

(4) Occurrence of a slope failure in the area of the research, development, or demonstration project.

(5) The gas management system is overwhelmed as evidenced by at a minimum either of the following:

(a) The volume of landfill gas generated results in the inability of the gas management system to maintain negative pressure.

(b) The volume of landfill gas exceeds the capacity of the gas management system components.

(6) Acceptance of any detrimental or prohibited materials identified in the permit to install application as required by paragraph (E)(1) of rule 3745-27-81 of the Administrative Code.

[Comment: Disposal of a prohibited liquid or solid waste may be a violation of the authorization and may be considered grounds for terminating or suspending the authorization.]

(7) Evidence that waste stabilization is not occurring including but not limited to acidic leachate with a high chemical oxygen demand and little or no methane in the landfill gas.

(8) The owner or operator's decision to suspend bulk liquid addition or to terminate the research, development, or demonstration project.

(D) Annual report. The owner or operator shall include, as an importable electronic file, in the annual operational report required to be submitted pursuant to paragraph (M) of rule 3745-27-19 of the Administrative Code the following:

(1) Information regarding achievement of project objective, including the following:

(a) A restatement of the project hypothesis and the conditions necessary to meet the desired outcome.

(b) An assessment of whether the desired outcome is being or has been achieved.

(c) Suggested changes to the experimental procedure or design, or possibilities for further potential research, development, or demonstration projects.

(2) A summary and analysis of the following monitoring and testing results, including an analysis of the results for any cause and effect relationships:

(a) Waste stabilization measurements, including cellulose to lignin ratio, biological methane potential, and per cent volatile solids.

(b) Moisture content of disposed waste.

(c) A description of the decomposed waste.

(d) The quality of leachate and a comparison to the leachate from the control group, including changes over time.

(e) The volume of landfill gas generated and a comparison to the predicted generation rate and to the generation rate of the control group.

(f) The quality of landfill gas, including moisture content, temperature, and constituents, and a comparison to the landfill gas from the control group.

(g) Type and amount of liquid added (including leachate, water, bulk liquids, and precipitation) and a comparison to the amount of liquid addition authorized.

(h) The volume of leachate collected and a comparison to the predicted generation rate and to the volume of leachate collected from the control group, including an assessment of the depth of leachate in the sanitary landfill facility.

(i) Results of the annual ground survey of surface elevation control points with an assessment of whether changes are due to settlement caused by waste degradation or due to displacement caused by a slope failure or waste movement.

(3) A summary of any other operating information, including the following:

(a) The types and amounts of bulk liquids added.

(b) Any monitoring results from assessing the quality of liquids added.

(c) Results from testing of flexible membrane liner coupons.

(d) Changes observed in the leachate or landfill gas (such as appearance or variability in volume or quality).

(4) A summary of any difficulty that occurred in the designated research, development, or demonstration project area and how the difficulties were resolved by the owner or operator, including the following:

(a) Indications of slope instability.

(b) Difficulties monitoring the depth of leachate in the sanitary landfill facility or indications that the depth of leachate exceeded one foot above the composite liner.

(c) Difficulties associated with certain solid or liquid waste streams, including the occurrence of odors or heat.

(d) Difficulties with the liquid introduction system.

(e) Any liquid or leachate outbreaks observed by the owner or operator.

(f) Odor complaints received by the owner or operator.

(g) Temperature of landfill gas at a wellhead is measured above one hundred thirty degrees Fahrenheit.

(h) Temperature of waste is measured above one hundred seventy degrees Fahrenheit.

(i) Any exceedance in the operation of the gas management system observed pursuant to paragraph (B)(2) of rule 3745-27-83 of the Administrative Code and the actions that the owner or operator took to correct the exceedance.

(j) Acceptance of detrimental or prohibited materials identified in the permit to install application as required by paragraph (E)(1) of rule 3745-27-81 of the Administrative Code.

(k) Any adverse impact on the flexible membrane liner component of the composite liner system or composite cap system, including the following:

(i) Indications of leakage through the liner (such as leachate or a waste-derived constituent detected in a ground water monitoring well).

(ii) Evidence of adverse impact on the flexible membrane liner coupons.

(iii) Temperature of leachate is measured above one hundred sixty degrees Fahrenheit or temperature of waste in proximity to the composite cap system is measured above one hundred forty degrees Fahrenheit.

(5) A summary of any violations of a requirement in Chapter 6111. of the Revised Code or any rules adopted thereunder.

(6) Any other reporting required by the terms and conditions of the issued authorization to stabilize waste through bulk liquid addition.

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Certification

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