

TO BE RESCINDED

3745-27-80 Applicability and definitions for authorizations to stabilize waste through bulk liquid addition.

(A) Applicability. Rules 3745-27-80 to 3745-27-89 of the Administrative Code are applicable to the facility if the following criteria are met:

- (1) The owner or operator is requesting authorization to accept bulk liquids at the facility pursuant to paragraph (E)(8)(b) of rule 3745-27-19 of the Administrative Code.

[Comment: Acceptance of bulk liquids to stabilize waste is a change in type of waste received, and may entail a change to operation, technique of waste received, or design or construction of the facility, which may endanger human health or the environment. The change is therefore a modification to the facility and requires a permit to install, which is also subject to the public involvement requirements of Chapter 3734. of the Revised Code.]

- (2) The research, development, or demonstration project will occur at a new or existing sanitary landfill facility subject to regulation under 40 CFR Part 258 "Criteria for Municipal Solid Waste Landfills."

[Comment: The text of the incorporated materials is not included in this rule and are hereby made a part of this rule. Only the specific version specified in this rule is incorporated. Any amendment or revision to a referenced document is not incorporated until this rule has been amended to specify the new version. The materials incorporated by reference are available as follows: 40 CFR Part 258, July 1, 2016. Copies may be obtained by electronically at <http://www.gpo.gov/fdsys>.]

- (3) The bulk liquid addition will occur in a designated area above a leachate collection system that is designed and constructed to maintain the depth of leachate to not more than one foot on the composite liner system.
- (4) The bulk liquid addition will occur in a designated area that meets the ground water aquifer system protection siting criteria established in paragraph (H)(2) of rule 3745-27-07 of the Administrative Code.
- (5) The purpose of the project is to research, develop, or demonstrate methods or technologies to optimize waste stabilization.
- (6) Any extension of the boundary of the designated research, development, or demonstration project area for waste stabilization through bulk liquid addition

for a facility that has received authorization to stabilize waste through bulk liquid addition constitutes a modification to the facility and requires another authorization.

[Comment: In all cases, expanding the project area is a change which may endanger human health or the environment. Other changes, such as changing the type of bulk liquid or the amount of bulk liquid to be accepted, may also be considered a change which may endanger human health or the environment. The owner or operator is encouraged to consult with the Ohio EPA beforehand to determine whether a change is a modification or an alteration for authorization purposes.]

(B) Definitions. For the purposes of rules 3745-27-80 to 3745-27-89 of the Administrative Code, the following terms are defined as follows:

- (1) "Extending," when used in the context of extending the termination date for authorization to stabilize waste through bulk liquid addition, means an action of the director to establish a new termination date before the term of the authorization expires and without changes to implement the research, development, or demonstration project.
- (2) "Reauthorizing" means an action of the director to establish a new termination date of an authorization to stabilize waste through bulk liquid addition of a request made after the termination date.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-81 **Application for a permit to stabilize waste through bulk liquid addition.**

The permit to install application shall comply with rule 3745-27-06 of the Administrative Code and this rule. The permit to install application shall contain the following:

- (A) Plan drawings. Detail engineering plans, specifications, and information for the research, development, or demonstration project shall include the following:
- (1) The location of the designated research, development, or demonstration project area and the control area, if one is proposed.
 - (2) A demonstration that the ground water aquifer system protection criteria in paragraph (H)(2) of rule 3745-27-07 of the Administrative Code are met in the designated research, development, or demonstration project area.
 - (3) The design of the composite liner system underlying the designated research, development, or demonstration project area.
 - (4) For any flexible membrane liner to be installed as part of the composite liner system, the horizontal limits of the liner integrity survey.
 - (5) A demonstration that the leachate in the designated research, development, or demonstration project area will be physically separated from the leachate from the rest of the landfill and monitored.
 - (6) The specifications for the leachate collection drainage layer material underlying the designated research, development, or demonstration project area, including permeability.
 - (7) The design of the liquid addition system.
 - (8) The horizontal and vertical limits of where liquid addition will occur.
 - (9) The design of the gas management system.
- (B) Variance and exemption requests. In addition to variance and exemption requests, include any requested alternative materials, designs, or construction requirements and any alterations to the authorizing document necessary to implement the research, development, or demonstration project.
- (C) Calculations. The design calculations shall include the following:

- (1) Capacity of the leachate collection and management system.
 - (2) Capacity of the gas management system.
 - (3) Analysis of slope stability in the designated research, development, or demonstration project area with the piezometric surface established at the top of waste.
 - (4) The amount of liquid that can be added without exceeding one foot of head on the composite liner system.
 - (5) The financial assurance cost estimate for closure of the facility.
- (D) Research, development, and demonstration information. The application shall provide the following information regarding the objective of the research, development, or demonstration project:
- (1) The hypothesis.
 - (2) The conditions necessary to meet the desired outcome.
 - (3) A description of test and control groups, including whether a control area will be employed at the facility.
 - (4) The variables to be changed, measured, and controlled.
 - (5) The time period for conducting the research, development, or demonstration project.

[Comment: The time period of the authorization to stabilize waste through bulk liquid addition cannot exceed three years (see rules 3745-27-82 and 3745-27-85 of the Administrative Code). Therefore, the design of the project should result in an outcome that can be determined within that time frame.]
 - (6) A summary of research as it relates to the project, including the need for this project and a list of published papers supporting the project hypothesis.
- (E) Operational information for the authorization to stabilize waste through bulk liquid addition. The application shall provide the following information regarding control of the waste stabilization process in the research, development, or demonstration project:
- (1) Waste acceptance, including the following:

- (a) Identification of the types of liquids (including leachate, water, and bulk liquids) to be added and why the addition will stabilize waste.
 - (b) Identification of any waste, liquid, or material types or characteristics that may be detrimental for the purposes of the research, development, or demonstration project.
 - (c) Identification of any waste or liquid types or characteristics to be prohibited from being disposed in the designated research, development, or demonstration project area and in the control area, if one is proposed. At a minimum, wastes which exhibit an exothermic reaction when combined with the bulk liquid are likely to result in a surface or subsurface fire shall be identified on this list (e.g., aluminum production waste).
- (2) Description of methods to be used to introduce the liquid (including leachate, water, and bulk liquids) into the waste mass.
 - (3) Description of any special operational activities or equipment, including whether the sanitary landfill facility will be operated under aerobic conditions.
 - (4) Surface elevation control points to be established.
 - (5) Description of procedures to ensure that daily cover or disposal of low permeability solid waste will not adversely affect the free movement of liquids and gases within the waste mass.
 - (6) When landfill gas collection will commence with respect to introduction of bulk liquids to the designated area.
- (F) Monitoring plan for the authorization to stabilize waste through bulk liquid addition. The application shall provide information regarding the monitoring of the following:
- (1) If certain liquid qualities or characteristics are necessary to conduct the research, development, or demonstration project, the monitoring parameters and frequency.
 - (2) Waste, liquid, and material types or characteristics in order to do the following:
 - (a) Prevent the disposal or application of prohibited items identified in accordance with paragraph (E)(1)(c) of this rule to the designated research, development, or demonstration project area or control area, if one is proposed.

- (b) Record acceptance of detrimental items identified in accordance with paragraph (E)(1)(b) of this rule to the designated research, development, or demonstration project area or control area, if one is proposed.
- (3) Odors, including how the owner or operator will do the following:
 - (a) Respond to complaints from citizens.
 - (b) Locate and identify the source of the odor.
- (4) Any monitoring in addition to that required in rule 3745-27-84 of the Administrative Code for the following:
 - (a) To detect a fire at the facility.
 - (b) To determine the degree of waste stabilization in the designated research, development, or demonstration project area and in the control group.
 - (c) To determine the impact on the flexible membrane liner component of the composite liner system.
 - (d) To determine if liquid addition is excessive.
- (5) Any additional monitoring of conditions necessary to meet the desired outcome of the project.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011

TO BE RESCINDED

3745-27-82 **Issuing and denying a permit to install; extending and reauthorizing an authorization to stabilize waste through bulk liquid addition.**

- (A) The director shall issue or deny an application for a permit to install to stabilize waste through bulk liquid addition.
- (B) The director may choose to extend the termination date of an authorization to stabilize waste through bulk liquid addition.
- (C) The director may choose to reauthorize bulk liquid addition and establish a new termination date.
- (D) The director shall not grant a variance or exemption request made with the application from any of the following:
 - (1) The location restriction demonstrations established in paragraph (C) of rule 3745-27-20 of the Administrative Code.
 - (2) The requirement to conduct ground water monitoring or any selected corrective measures pursuant to rule 3745-27-10 of the Administrative Code.
 - (3) The requirement to maintain financial assurance as established in rules 3745-27-15 to 3745-27-18 of the Administrative Code.
 - (4) The hazardous waste prohibition established in paragraph (E)(8)(c) of rule 3745-27-19 of the Administrative Code.
 - (5) The requirement to abate or minimize explosive gas migration as established in rule 3745-27-12 of the Administrative Code.
 - (6) The requirement to limit the depth of leachate to not more than one foot on the composite liner system as established in paragraph (C)(3)(c) of rule 3745-27-08 of the Administrative Code.
 - (7) The park siting criterion as established in paragraph (H)(1) of rule 3745-27-07 of the Administrative Code.
- (E) The director shall not issue a permit to install, choose to extend the termination date, or reauthorize bulk liquid addition and establish a new termination date unless the director determines the following:

- (1) The construction, operation, closure activities, and post-closure care activities of the sanitary landfill facility, in the manner approved by the permit to install and any terms or conditions imposed as part of the permit to install, will not create a nuisance or a hazard to public health or safety or the environment and are unlikely to result in a violation of any other requirements of Chapters 3704., 3734., and 6111. of the Revised Code and any rules adopted thereunder.
- (2) The designated area where bulk liquid addition will occur meets the following criteria:
 - (a) The ground water aquifer system protection siting criteria established in paragraph (H)(2) of rule 3745-27-07 of the Administrative Code.

[Comment: If the designated area is in a location that was previously authorized by issuance of a variance or exemption, or was deemed acceptable by the director, for any of the siting criteria in paragraph (H) (2) of rule 3745-27-07 of the Administrative Code, then the area does not meet the criterion established by paragraph (E)(2)(a) of this rule.]
 - (b) A composite liner system is present. If the flexible membrane liner has not yet been installed, a liner integrity survey shall be conducted on the installed flexible membrane liner after the leachate collection drainage layer is placed.
 - (c) A dedicated leachate transfer point is present, or an alternative acceptable to the director, which ensures that leachate generated within the designated area can be accurately measured and a representative sample of leachate collected.
 - (d) The surrounding areas are sloped or separated by a berm to ensure that leachate generated outside the designated area is diverted from the designated area.
 - (e) A leachate collection system is present that is designed and constructed to maintain the depth of leachate to not more than one foot on the composite liner system. At a minimum, the leachate collection system drainage layer shall meet the following criteria:
 - (i) Consist of aggregate or shredded scrap tires. Shredded scrap tires shall not be placed above a flexible membrane liner that has not yet been installed unless the shredded scrap tires will not interfere with the ability of the leak location survey to detect defects.
 - (ii) Have a permeability exceeding one centimeter per second.

- (3) The liquids including leachate, water, and bulk liquids will be evenly distributed.
- (4) Liquid addition shall not occur within fifty feet of the following:
 - (a) The boundary of the designated research, development, or demonstration project area.
 - (b) External slopes of the facility.
- (5) The leachate collection and management system has the capacity to manage the anticipated increase in leachate production.
- (6) The landfill gas generated within the research, development, or demonstration project area is adequately controlled and managed, including at a minimum the following:
 - (a) The design of the gas management system conforms to rule 3745-27-89 of the Administrative Code.
 - (b) The gas management system has the capacity to manage the anticipated increase in landfill gas production rates.
 - (c) The gas management system for the area does not vent the landfill gas to the atmosphere but conveys the landfill gas to one or more gas control devices.
 - (d) Landfill gas collection commences prior to introduction of liquids to the area.
 - (e) The operation of the gas management system is capable of conforming to rule 3745-27-83 of the Administrative Code.
- (7) The slopes in the research, development, or demonstration project area are stable with the piezometric surface at the top of waste.
- (8) The bulk liquid addition is unlikely to cause an exothermic reaction resulting in a surface or subsurface fire.
- (9) The research, development, or demonstration project will result in development of useful information related to optimizing waste stabilization. The addition of bulk liquid must be necessary to accelerate or enhance the stabilization of the solid waste and is not being used by the owner or operator merely as a means to dispose of the liquid.

- (10) The closure cost estimate includes a separate item to address closure contingencies. The cost estimate for closure contingencies shall be at minimum twenty per cent of the non-contingency closure cost estimate items.
- (11) The owner and operator are in substantial compliance at the facility with all applicable provisions of Chapters 3704., 3714., 3734., and 6111. of the Revised Code and any rules, permits, registrations, or other authorizations issued thereunder, and has maintained compliance with all applicable orders issued by the director or an approved board of health, the environmental review appeals commission, or courts having competent jurisdiction, in the course of such previous or current management or operations.
- (12) The owner or operator is in compliance with the ground water monitoring program requirements in rule 3745-27-10 of the Administrative Code and there has been no known ground water contamination from the designated research, development, or demonstration project area or, in the event there has been known contamination from the designated research, development, or demonstration project area, the director has approved the certification that corrective measures were completed.
- (F) The permit to install application, request to extend the termination date of the authorization to stabilize waste through bulk liquid addition, or request to reauthorize bulk liquid addition and establish a new termination date, notwithstanding any deficiencies, may be considered and acted upon if sufficient information is provided in the application or request for the director to determine whether the criteria in paragraphs (D) and (E) of this rule were met.
- (G) The valid term shall not exceed three years for any authorization to stabilize waste through bulk liquid addition, reauthorization to stabilize waste through bulk liquid addition, or extension of the termination date of an authorization. The director shall determine that the total term of all authorizations issued for research, development, or demonstration projects to accept bulk liquids at the facility shall not exceed twenty-one years. Only the time the authorization is in effect is counted for the purpose of this rule.

[Comment: Time during which there is no authorization to add bulk liquids, or the authorization is terminated, does not count toward the twenty-one year limit in paragraph (G) of this rule. However, the twenty-one year limit applies to the entire facility and issuance of another permit to install to stabilize waste through bulk liquid addition at the same facility does not reset the time limits.]

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-83

Gas management system operation.

For the duration of the authorization to stabilize waste through bulk liquid addition at the facility and for a minimum of three years after ceasing addition of bulk liquids, the owner or operator shall perform the following gas management system requirements in compliance with this rule.

(A) Gas management system operations. The owner or operator shall do the following:

- (1) Commence extraction or continue to extract landfill gas from each area of the facility in which gas collection devices have been installed.
- (2) Operate the gas management system in a manner that prevents fire and controls odors.
- (3) Perform ongoing cover maintenance in the area designated for bulk liquid addition as needed to prevent ambient air infiltration into disposed material.
- (4) Keep the gas management system free of liquids to the extent necessary to ensure the effectiveness of the gas management system.

(B) Gas collection device operations. The owner or operator shall operate a gas collection device in the area designated for bulk liquid addition in accordance with the following:

- (1) Maintain negative pressure at each gas wellhead except during the following circumstances:
 - (a) When an increased temperature is measured and the owner or operator takes measures to prevent a subsurface fire.
 - (b) When a subsurface fire is occurring in the vicinity of the well and the owner or operator takes measures to respond to the fire.
- (2) For landfill gas from a gas collection device placed within the waste mass, both of the following:
 - (a) The temperature of the landfill gas does not exceed one hundred thirty degrees Fahrenheit.
 - (b) Either the nitrogen concentration in the landfill gas does not exceed twenty per cent by volume or the oxygen concentration in the landfill gas does not exceed five per cent by volume.

(3) If monitoring indicates positive pressure during circumstances other than those specified in paragraph (B)(1) of this rule or if monitoring indicates an exceedance of a value in paragraph (B)(2) of this rule (temperature, nitrogen, or oxygen), the owner or operator shall perform the following activities:

(a) For positive pressure, the owner or operator shall perform the following:

(i) Adjust the vacuum to increase the landfill gas extracted not later than five days after the monitoring event. The owner or operator shall re-monitor the gas well not later than one calendar day after the adjustment to verify whether the exceedance continues or was corrected by the adjustment.

(ii) Not later than one hundred twenty days after the original monitoring event, one or more of the following if negative pressure cannot be achieved not later than fifteen calendar days after the original monitoring event, unless the monitoring event occurred during the first one hundred eighty days after gas collection system startup:

(a) Replace the gas well or expand the gas management system.

(b) Upgrade the gas mover equipment, header pipe, or control device.

(c) If the design of the gas management system is documented in the permit to install, obtain concurrence from Ohio EPA to alter the gas management system design in the permit to install to incorporate new or different components that are capable of achieving negative pressure.

(b) The owner or operator shall prevent additional occurrences of positive pressure and additional exceedances of values in paragraph (B)(2) of this rule while performing maintenance, adjustments, or other corrective actions.

(c) For an exceedance of a value in paragraph (B)(2) of this rule, the owner or operator shall perform the following:

(i) Cover maintenance and maintenance around the gas collection device and connections to decrease air infiltration not later than five days after the monitoring event. The owner or operator shall re-monitor the gas collection device not later than one calendar day after performing such maintenance to determine whether the exceedance continues or was corrected by the maintenance.

(ii) If a gas collection device is connected to a gas mover, adjust the vacuum to decrease the landfill gas extracted not later than five days after the monitoring event. The owner or operator shall re-monitor the gas collection device not later than one calendar day after the adjustment to determine whether the exceedance continues or was corrected by the adjustment.

(iii) If correction of the exceedance cannot be achieved not later than fifteen calendar days after the original monitoring event, notify the appropriate district office of the Ohio EPA and the approved board of health in writing of the exceedance and the actions that the owner or operator plans to take to correct the exceedance.

This paragraph does not apply during periods of startup, shutdown, or malfunction, provided that the duration of startup, shutdown, or malfunction does not exceed five days for the gas collection and conveyance systems and does not exceed one hour for control devices.

(C) Gas control device operations. The owner or operator shall operate the gas control device in accordance with the following:

- (1) At all times when the collected landfill gas is conveyed to the gas control device.
- (2) The permit to operate and applicable state and federal statutes, rules, and regulations governing air pollution control.

(D) In the event a component of the gas management system becomes inoperable, the owner or operator shall do the following:

- (1) Not later than one hour after discovering the inoperable component, close all valves in the gas management system contributing to venting of landfill gas to the atmosphere.
- (2) Record in the log of operations the date and time that the inoperable component was discovered and the date and time that the component resumed operating.

(E) Decommissioning a gas collection device in the area designated for bulk liquid addition. An owner or operator shall decommission a gas collection device in a manner that prevents infiltration of air and water into disposed material. If the gas collection device penetrated the cap system, an owner or operator shall do the following:

- (1) Remove any casing to a minimum of two feet below the ground surface.
- (2) If casing remains within the cap system, cap the gas vent or gas well.

- (3) If casing remains but is no longer present within the cap system, place fill material in the remaining casing or cap the gas vent or gas well.
- (4) If all casing is removed, place fill material in the remaining borehole.
- (5) Construct cap system engineered components in the area of the penetration to maintain the continuity of the cap system.
- (6) Submit a construction certification report in accordance with rule 3745-27-08 of the Administrative Code.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

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 through 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 D5747M-08(2013)e1, "Standard Practice for Tests to Evaluate the Chemical Resistance of Geomembranes to Liquids;" approved in 1995; reapproved in 2002; amended in 2008 and 2013.

ASTM D5496-15, "Standard Practice for In Field Immersion Testing of Geosynthetics;" approved in 1998; reapproved in 2003 and 2009; amended in 2015.

- (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.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-85 Extending or establishing a new termination date of an authorization to stabilize waste through bulk liquid addition.

(A) If the owner or operator desires to extend the termination date of an authorization to stabilize waste through bulk liquid addition, the owner or operator shall submit a request to the appropriate district office of the Ohio EPA not later than one hundred twenty days before the term of the authorization expires. The request shall include the new requested termination date, a demonstration of the need for continued research, and any revisions to the closure cost estimate to address closure contingencies. The annual reports submitted to Ohio EPA pursuant to rule 3745-27-84 of the Administrative Code shall be deemed to be included in this request.

[Comment: The time period of the authorization to stabilize waste through bulk liquid addition cannot exceed three years and the total term to accept bulk liquids at the facility cannot exceed twenty-one years (see rule 3745-27-82 of the Administrative Code). Therefore, the design of the project should result in an outcome that can be determined within that time frame.]

(B) If the owner or operator desires to stabilize waste through bulk liquid addition after the termination date, the owner or operator shall submit a request to the appropriate district office of the Ohio EPA to reauthorize bulk liquid addition. The request shall include the new requested termination date, a demonstration of the need for continued research, any changes to implementation of the research, development, or demonstration project, and any revisions to the closure cost estimate to address closure contingencies. The annual reports submitted to Ohio EPA pursuant to rule 3745-27-84 of the Administrative Code shall be deemed to be included in this request.

[Comment: If a change to implement the research, development, or demonstration project is a modification, the action cannot be a reauthorization.]

(C) In deciding whether to grant an extension of the termination date, or reauthorize bulk liquid addition and establish a new termination date, the director may consider the following from observed or reported information:

- (1) Whether information generated by the research, development, or demonstration project is useful in optimizing waste stabilization.
- (2) Whether the following were successfully resolved by the owner or operator:
 - (a) Difficulties with waste acceptance, including the type, quality, and amount.
 - (b) Difficulties with introduction of bulk liquids.

- (c) Difficulties with the depth of leachate in the sanitary landfill facility or management of leachate in the leachate collection and management system.
 - (d) Difficulties with management of landfill gas in the gas management system.
- (3) Whether any of the following effects from the bulk liquid addition at the facility have occurred:
- (a) Presence of odors.
 - (b) Presence of leachate seeps or surface exposure of leachate.
 - (c) Temperature of landfill gas at a wellhead is measured above one hundred fifty degrees Fahrenheit.
 - (d) Methane concentration in landfill gas at a wellhead is measured below forty-five per cent.
 - (e) Temperature of waste is measured above one hundred seventy degrees Fahrenheit.
 - (f) Carbon monoxide concentration in landfill gas at a wellhead is measured above one thousand parts per million by volume.
 - (g) Occurrence of a slope failure in the waste mass in the designated research, development, or demonstration project area.
 - (h) Any adverse impact on the flexible membrane liner component of the composite liner system or composite cap system, including the following:
 - (i) Indication 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.
 - (i) Other persistent and deleterious effects.
- (4) Whether conditions to meet the desired outcome of the project are not being met or that the waste is not stabilizing.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-86

Terminating and suspending the authorization to stabilize waste through bulk liquid addition by the owner or operator.

(A) If any of the following is observed or occurs, the owner or operator shall suspend liquid addition or terminate the research, development, or demonstration project:

- (1) Fire, including or as evidenced by any of the following:
 - (a) Flames or embers at the surface of the waste mass, excluding waste at the working face.
 - (b) Temperature of waste is measured above one hundred seventy degrees Fahrenheit.
 - (c) Carbon monoxide concentration in landfill gas at a wellhead is measured above one thousand parts per million by volume.
- (2) Indications of excessive liquid addition, including or as evidenced by any of the following:
 - (a) The amount of liquid addition exceeds the amount of liquid addition authorized by the authorization to stabilize waste through bulk liquid addition.
 - (b) The depth of leachate on the composite liner system exceeds one foot.
 - (c) Leachate outbreaks with a constant liquid output and flow down the side slope are observed by the owner or operator.
 - (d) Abnormal vibration or shaking caused by traffic is detected when standing on the waste several feet away.
 - (e) Trucks or vehicles sinking into soft waste, particularly if the waste is wet or saturated, where the sinking is persistent and not weather-related.
- (3) Occurrence of a slope failure in the area of the research, development, or demonstration project.
- (4) The amount of leachate collected from the leachate collection and management system 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.

- (5) The gas management system is overwhelmed, as evidenced by any 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 prohibited materials identified in the permit to install application as required by paragraph (E)(1) of rule 3745-27-81 of the Administrative Code.
 - (7) Evidence that waste stabilization is not occurring (such as acidic leachate with a high chemical oxygen demand and little or no methane in the landfill gas).
- (B) If the owner or operator terminates the research, development, or demonstration project before the authorization to stabilize waste through bulk liquid addition expires, the owner or operator may notify Ohio EPA of the project termination. Through such notification, the remaining period of the term of the authorization to stabilize waste through bulk liquid addition will be available for future research, development, or demonstration projects and shall not be counted toward the twenty-one year limit for acceptance of bulk liquids.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-87 **Terminating and suspending an authorization to stabilize waste through bulk liquid addition by the director; corrective measures.**

(A) The director may terminate or suspend an authorization to stabilize waste through bulk liquid addition.

(B) An authorization may be terminated or suspended by the director if any of the following is observed or reported or is the subject of a complaint:

(1) Odors.

(2) Indications of excessive liquid addition, including or as evidenced by any of the following:

(a) Gas wells are flooded with liquid or landfill gas production has decreased.

(b) Ponding of liquid or seepage of leachate near the point of introduction of the bulk liquid.

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

(d) The amount of leachate collected 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.

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

(f) Leachate outbreaks with a constant liquid output and flow down the side slope are observed.

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

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

(3) Indications of fire at the facility, including or as evidenced by any of the following:

(a) Heat.

- (i) Temperature of landfill gas at the wellhead is measured above one hundred thirty degrees Fahrenheit.
 - (ii) Temperature of waste is measured above one hundred seventy degrees Fahrenheit.
 - (iii) Abnormal snowmelt patterns.
 - (b) Flames or embers or light from embers, combustion, or oxidation.
 - (c) Settlement of waste that is unexpected or abnormal.
 - (d) Smoke, steam, or vapor.
 - (e) Smoldering material.
 - (f) Soot, charred material, or combustion residue.
 - (g) Stressed vegetation.
 - (h) Combustion odors.
 - (i) Methane concentration in landfill gas is less than in the control group or less than forty-five per cent by volume.
 - (j) Carbon monoxide concentration in landfill gas at a wellhead is measured above one hundred parts per million.
- (4) Adverse impact on the flexible membrane liner component of the composite liner system or composite cap system.
- (5) The gas management system is overwhelmed, including or as evidenced by any of the following:
- (a) Landfill gas or odor emissions that require the owner or operator to make major adjustments of the gas management system to control.
 - (b) The volume of landfill gas generated results in the inability of the gas management system to maintain negative pressure.
 - (c) The volume of landfill gas exceeds the capacity of the gas management system components.
- (6) Indication of slope instability or occurrence of a slope failure in the area of the research, development, or demonstration project.

- (7) 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.
 - (8) Evidence that waste stabilization is not occurring (such as acidic leachate with a high chemical oxygen demand and little or no methane in the landfill gas).
 - (9) The research, development, or demonstration project is not generating useful information for optimizing waste stabilization.
 - (10) Other nuisances or hazards to public health or safety or the environment, or a violation at the facility of Chapter 3704., 3734., or 6111. of the Revised Code or any rule promulgated thereunder.
- (C) When an authorization to stabilize waste through bulk liquid addition is terminated, the director may also terminate other variances, exemptions, or alternatives contained in the authorization to stabilize waste through bulk liquid addition.
- [Comment: Other variances, exemptions, alternatives, or alterations issued to the owner or operator for the facility contained in another authorizing document are not terminated or suspended by the termination or suspension of the authorization to stabilize waste through bulk liquid addition unless so stated in the director's orders.]
- (D) The suspension of an authorization to stabilize waste through bulk liquid addition may apply to all or a part of the authorization. If all or part of the authorization is suspended, the owner or operator may consider changes to implementation of the research, development, or demonstration project and report recommendations to the appropriate district office of the Ohio EPA. The Ohio EPA shall notify the owner or operator when the authorization is no longer suspended.
- (E) If the director terminates the research, development, or demonstration project before the authorization to stabilize waste through bulk liquid addition expires, the remaining period of the term of the authorization to stabilize waste through bulk liquid addition will be available for future research, development, or demonstration projects and shall not be counted toward the twenty-one year limit for acceptance of bulk liquids.
- (F) The director may order implementation of corrective measures to protect public health or safety or the environment.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-88 **Monitoring, reporting, and financial assurance requirements after termination of an authorization to stabilize waste through bulk liquid addition.**

For a minimum of three years after termination of the authorization to stabilize waste through bulk liquid addition, the owner or operator shall comply with this rule.

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

- (1) Odors, in accordance with the terminated authorization.
- (2) Indication of fire in the area designated for bulk liquid addition, including the following:
 - (a) Monthly monitoring of the temperature of landfill gas.
 - (b) When 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 was operated under aerobic conditions, annual monitoring of the temperature of the waste.
- (3) Quarterly analysis of the leachate from the leachate collection and management system in the designated research, development, or demonstration project area for the following parameters:
 - (a) Parameters listed in appendix I to rule 3745-27-10 of the Administrative Code.
 - (b) Biochemical oxygen demand.
 - (c) Chemical oxygen demand.
 - (d) Field analysis for pH.
 - (e) Field analysis for temperature.
 - (f) Field analysis for specific conductance.
- (4) Landfill gas from the gas management system in the designated research, development, or demonstration project area for the following:
 - (a) Monthly monitoring of landfill gas flow rates from each gas collection well.

- (b) Quarterly monitoring of moisture content and per cent methane by volume.
- (5) Annually, a ground survey of surface elevation control points in the designated research, development, or demonstration project area.
- (B) Annual report. The owner or operator shall include, as an importable electronic file, in the annual operational report required by paragraph (M) of rule 3745-27-19 of the Administrative Code the following:
- (1) A summary and analysis of the following monitoring and testing results:
 - (a) The quality of leachate and a comparison to the leachate from the control group, including changes over time.
 - (b) The volume of landfill gas generated as compared to the predicted generation rate and to the volume of landfill gas generated from the control group.
 - (c) The quality of landfill gas, including moisture content, temperature, and constituents, and a comparison to the landfill gas from the control group.
 - (d) If the sanitary landfill facility was operated under aerobic conditions during that year, the temperature of the waste.
 - (e) Results of the annual ground survey of surface elevation control points with an assessment of whether changes were due to settlement caused by waste degradation or due to displacement caused by a slope failure or waste movement.
 - (2) 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) Any 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) Liquid or leachate outbreaks.
 - (d) Odor complaints.

- (e) Temperature of landfill gas at a wellhead is measured above one hundred thirty degrees Fahrenheit.
 - (f) Temperature of waste is measured above one hundred seventy degrees Fahrenheit.
- (3) A summary of any violations of a requirement in Chapter 6111. of the Revised Code or any rules adopted thereunder.
- (C) Financial assurance. The owner or operator shall include in the closure cost estimate a separate item to address closure contingencies. The closure cost estimate contingency items shall be a minimum of twenty per cent of the closure cost estimate for non-contingency items.
- (D) Three years after termination of the authorization to stabilize waste through bulk liquid addition, the owner or operator may request to discontinue monitoring, reporting, and maintaining financial assurance in accordance with all or part of the requirements of paragraphs (A) to (C) of this rule. Upon the director's written authorization, the owner or operator may discontinue monitoring, reporting, or maintaining financial assurance as stated in the authorization.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011, 02/07/2017

TO BE RESCINDED

3745-27-89

Gas management system design.

(A) The gas collection and conveyance system at the designated area for bulk liquid addition shall be designed to meet the following:

(1) To consist of the following:

- (a) A gas collection layer. Landfill gas collected in the gas collection layer shall be directed to a gas vent or gas well or other gas collection device.
- (b) Gas wells or elements of the leachate collection system used as gas collection devices. A gas well is a device within a landfill that relies on a gas mover to move gas out of the landfill. A gas well can be vertical or horizontal.
- (c) A gas mover system. A gas mover system includes the gas mover and associated equipment such as the power source. A gas mover is the equipment used to cause transport of landfill gas (such as fans, blowers, and compressors).
- (d) A gas conveyance system. A gas conveyance system includes the devices used to convey landfill gas from a gas collection device and may consist of headers and laterals.
- (e) A gas control device. Examples of gas control devices are open flares, enclosed combustors (such as enclosed flares, boilers, or process heaters), and gas treatment systems.

(2) To not compromise the integrity of the cap system, the leachate management system, the liner system, or the separatory leachate barrier and collection system. At a minimum, the design of the gas collection and conveyance system shall meet the following criteria:

- (a) Gas wells that are installed through waste shall not be installed within ten feet of the top of the liner system or separatory leachate barrier and collection system.
- (b) Any penetrations through the cap system at the designated area for bulk liquid addition shall account for settlement of the waste relative to the gas wells.

(3) To not cause fires within the disposal limits. At a minimum, perforations in the gas wells shall not occur within twenty feet of the surface.

(4) To prevent landfill gas flow from being restricted due to accumulation of leachate or of landfill gas condensate.

(5) To be capable of isolating individual gas wells and portions of the gas conveyance system for maintenance and repair.

[Comment: Certain municipal solid waste landfills are required to control landfill gas emissions. Permits for gas collection and control systems are obtained through Ohio EPA, division of air pollution control.]

(B) The gas collection layer at the designated area for bulk liquid addition shall be designed to meet the following:

(1) As a component of a cap system, be located as close as possible to the disposal limits.

(2) Either remain dry or be oversized to accommodate leachate and landfill gas condensate. If oversized to accommodate leachate and landfill gas condensate, the gas collection layer shall direct the leachate and landfill gas condensate to the waste mass or to the leachate collection system.

(3) If the gas collection layer is below a flexible membrane liner or geosynthetic clay liner, meet the following criteria:

(a) Provide sufficient flow capacity to reduce the landfill gas pressure sufficiently to not result in loss of intimate contact between the flexible membrane liner or geosynthetic clay liner and the underlying recompacted soil barrier layer or subbase.

(b) The surface of the gas collection layer shall have no abrupt changes in grade that may result in damage to the flexible membrane liner or geosynthetic clay liner.

(C) Gas wells at the designated area for bulk liquid addition shall be designed to obtain landfill gas samples, control landfill gas flow, and measure the following:

(1) Temperature at different locations down the gas well.

(2) The water level in the gas well and withdrawing leachate from the gas well.

(3) Landfill gas pressure.

(4) Landfill gas composition.

- (5) Landfill gas flow.
- (D) The gas mover system shall be designed to have the capacity to manage the maximum gas generation flow rate expected over the intended use period of the gas mover system.
- (E) Landfill gas condensate collected in the gas collection and conveyance system designed in accordance with paragraph (A) of this rule shall be directed to one or more of the following:
- (1) The leachate collection and management system.
 - (2) A condensate storage tank that conforms to paragraph (E) of this rule.
 - (3) A public sewerage system.
 - (4) A wastewater treatment works permitted in accordance with Chapter 6111. of the Revised Code.
 - (5) If collected from within or above the disposal limits and the waste mass is above a leachate collection system, the waste mass.
- (F) Condensate holding tanks shall be designed to meet the following:
- (1) Have a minimum storage capacity of ten times the anticipated daily amount of condensate generated from continuous operation of the gas extraction system.
 - (2) For a condensate holding tank comprised of metal, incorporate cathodic protection.
 - (3) For an above ground holding tank, have a foundation capable of supporting the holding tank when the tank is full of condensate without compromising the integrity of any engineered components.
- [Comment: Pursuant to rule 3745-42-11 of the Administrative Code, industrial waste holding tanks are required to obtain a permit through Ohio EPA, division of surface water.]
- (G) Condensate holding tank load-out facilities shall be designed to meet the following criteria:
- (1) Be protected from damage caused by freezing and facility operations.
 - (2) Prevent releases of leachate from load-out operations.

(3) Contain spills and facilitate spill cleanup.

Effective:

Five Year Review (FYR) Dates: 8/10/2021

Certification

Date

Promulgated Under: 119.03
Statutory Authority: 3734.02
Rule Amplifies: 3734.02
Prior Effective Dates: 06/06/2011