

CHAPTER 289. RESIDUAL WASTE DISPOSAL IMPOUNDMENTS

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Authority

The provisions of this Chapter 289 issued under the Solid Waste Management Act (35 P.S. §§ 6018.101—6018.1003); the Pennsylvania Used Oil Recycling Act (58 P.S. §§ 471—480); The Clean Streams Law (35 P.S. §§ 691.1—691.1001); sections 1905-A, 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-5, 510-17 and 510-20); and the Municipal Waste Planning, Recycling and Waste Reduction Act (53 P.S. §§ 4000.101—4000.1904); amended under sections 5(b) and 402 of The Clean Streams Law (35 P.S. §§ 691.5(b) and 691.402); section 302 of the Municipal Waste Planning, Recycling and Waste Reduction Act (53 P.S. § 4000.302); section 408(e) of the Pennsylvania Used Oil Recycling Act (58 P.S. 408(e)); sections 1905-A, 1917-A and 1920-A of The Administrative Code of 1929 (71 P.S. §§ 510-5, 510-17 and 510-20); section 105(4) of the Waste Tire Recycling Act (35 P.S. § 6029.105(4)); sections 301 and 302 of the Radiation Protection Act (35 P.S. §§ 7110.301 and 7110.302); and the Vehicle Code, 75 Pa.C.S. § 4909(e), unless otherwise noted.

Source

The provisions of this Chapter 289 adopted July 2, 1992, effective July 4, 1992, 22 Pa.B. 3389, unless otherwise noted.

Cross References

This chapter cited in 25 Pa. Code § 245.437 (relating to periodic testing); 25 Pa. Code § 252.3 (relating to scope); 25 Pa. Code § 261a.2 (relating to definition of “solid waste”); 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 287.121 (relating to application contents); 25 Pa. Code § 287.504 (relating to operating requirements); 25 Pa. Code § 287.601 (relating to scope); 25 Pa. Code § 299.143 (relating to application requirements); and 25 Pa. Code § 299.145 (relating to failure).

Subchapter A. GENERAL

Sec.
289.1. Scope.

§ 289.1. Scope.

(a) This chapter sets forth application and operating requirements for residual waste disposal impoundments. The requirements in this chapter are in addition to the applicable requirements in Chapter 287 (relating to residual waste management—general provisions).

(b) This chapter applies to two kinds of residual waste disposal impoundments.

(1) Class I residual waste disposal impoundments involve the disposal of residual wastes with the greatest degree of potential for adverse effects on groundwater and the greatest potential impact on public health, safety and the environment.

(2) Class II residual waste disposal impoundments involve the disposal of residual wastes with an intermediate degree of potential for adverse effects on groundwater and an intermediate degree of potential impact on public health, safety and the environment.

(c) This chapter includes residual waste disposal at impoundments that are permitted for industrial waste water treatment and discharge under The Clean Streams Law.

Subchapter B. APPLICATION REQUIREMENTS

PHASE I AND PHASE II APPLICATION

Sec.

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Cross References

This subchapter cited in 25 Pa. Code § 289.411 (relating to additional provisions); 25 Pa. Code § 289.415 (relating to waste classification plan); 25 Pa. Code § 289.511 (relating to general requirements); and 25 Pa. Code § 289.515 (relating to waste classification plan).

PHASE I AND PHASE II APPLICATION**§ 289.101. Two phase process.**

A person or municipality may submit an application for a permit to operate a residual waste disposal impoundment in two phases, known as Phase I and Phase II, in accordance with this subchapter. Approval by the Department of a Phase I application does not constitute or guarantee approval for the Phase II permit application, issuance of the permit or authority to operate a residual waste disposal impoundment.

**PHASE I APPLICATION REQUIREMENTS—
GENERAL PROVISIONS****§ 289.111. Basic requirements.**

The Phase I application shall:

- (1) Comply with §§ 289.112—289.114 and 289.121—289.128.
- (2) Comply with Chapter 287, Subchapter C (relating to general requirements for permits and permit applications).

Source

The provisions of this § 289.111 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226704).

§ 289.112. Facility plan.

An application to operate a residual waste disposal impoundment shall contain conceptual drawings and a narrative describing the following:

- (1) The general operational concept for the proposed facility, including the origin, composition and weight or volume of solid waste that is proposed to be disposed of at the facility, the type of liner system, the proposed capacity of the facility, the expected life of the facility and the size, sequence and timing of solid waste disposal operations at the facility.
- (2) A detailed description of the volume or soil needed to construct and operate the facility and the method by which the soil will be delivered. The description will include the number of trucks, the access roads they will use, delivery times and any other information relevant to assessing the impacts of the operation.

Source

The provisions of this § 289.112 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226704).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements).

§ 289.113. Maps and related information.

(a) An application shall contain a topographic map, on a scale of 1 inch equals no more than 200 feet with 10-foot maximum contour intervals. The Department may, in writing, approve the use of a different horizontal scale. The application shall include the map and necessary narrative descriptions, which show the following:

(1) Boundaries and names of the present owners of record of land, both surface and subsurface, and including easements, rights-of-way and other property interests, for the proposed permit area and adjacent area; and a description of title, deed or usage restrictions affecting the proposed permit area.

(2) The boundaries of the land to be affected during the estimated total life of the proposed operation, including the boundaries of areas that will be affected in each sequence of disposal impoundment activity and boundaries of areas that will be used for impoundments.

(3) The location of the areas on and off the permit area which are proposed to be excavated to obtain earthen material for the construction of the facility, for cover material, for the liner system and for other construction purposes.

(4) The location and name of public and private water sources within 1/2 mile of the proposed facility. If more than 50 wells are located within the 1/2-mile radius, the applicant may identify only the closest wells in each direction and generally describe the location and number of wells further away.

(5) The location, name and elevation of surface water bodies, such as springs, streams, lakes, ponds, wetlands, constructed or natural drains and irrigation ditches within 1/4 mile of the proposed facility.

(6) The location of the active and inactive gas and oil wells, active and inactive surface and underground coal and noncoal mines, coal seams to a depth of 500 feet, mine spoil piles, dumps, dams, embankments and mine pool discharge points within 1/4 mile of the proposed facility.

(7) The location of rights-of-way for high-tension power lines, pipelines, railroads and public and private roads within 1/4 mile of the proposed facility.

(8) The location of buildings in use within 1/4 mile of the proposed facility.

(9) If solid waste disposal or processing has previously taken place within 1/4 mile of the proposed facility, the names of the owners or operators, or both, of the facility, the type of solid waste processed or disposed, and if applicable, cross sections indicating the interface details between areas previously filled and areas to be filled.

(10) The anticipated location of water quality monitoring points.

(11) The boundaries of land within the proposed permit area and adjacent areas identified in § 289.422 or § 289.522 (relating to areas where Class I residual waste disposal impoundments are prohibited; and areas where Class II residual waste disposal impoundments are prohibited), whichever is applicable.

(12) The elevation and location of test borings and core samplings taken under § 289.122 (relating to geology and groundwater description), and the location of test pits or excavations taken under § 289.124 (relating to soil description).

(13) The municipalities in which the permit area is proposed to be located.

(14) The location of sinkholes, fractures, fracture traces, outcrops, lineaments and mine pools in the proposed permit area and adjacent area.

(15) The location of water discharges into a surface body of water in the proposed permit area and adjacent area.

(16) The location of 100-year floodplain boundaries in the proposed permit area and adjacent area.

(b) An application shall contain a topographic map showing the location and name of public water sources within 3 miles downstream or downgradient from the proposed facility, and the boundary of the proposed permit area. The map shall be on a scale of 1 inch equals no more than 2,000 feet with 20-foot maximum contour intervals, including necessary narrative descriptions.

Source

The provisions of this § 289.113 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226704) to (226706).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements).

§ 289.114. Waste solidification plan.

The application shall include a plan, including necessary drawings, designs, specifications, timetables, waste analyses, and narrative descriptions, to solidify the waste under § 289.212 (relating to waste solidification). The plan shall include laboratory and field test results showing that the waste can be solidified as proposed.

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements).

PHASE I APPLICATION REQUIREMENTS—SITE ANALYSIS

§ 289.121. Description of geology, soils and hydrology; general requirements.

In preparing the soils, geology and hydrology descriptions required by this section and §§ 289.122—289.127 the applicant shall include information about the proposed permit area and the adjacent area. Plans and cross sections submitted to comply with this section and §§ 289.122—289.128 shall be on a scale satisfactory to the Department. The map shall be on a scale of 1 inch equals no more

than 200 feet, with contour intervals at a maximum of 10 feet. Maps and cross sections submitted for a particular application shall be of the same or easily compared scales.

Source

The provisions of this § 289.121 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226706).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements).

§ 289.122. Geology and groundwater description.

(a) An application shall contain a description of the geology and groundwater in the proposed permit area and adjacent areas down to and including the lowest aquifer that may be affected by the facility, including the following:

(1) The results of a sufficient number of test borings and core borings to accurately characterize geology, soils, groundwater flow, groundwater chemistry and flow systems of the proposed permit area and adjacent area, which shall be at least three test borings. At least one test boring shall be a core boring. The applicant shall include the actual surface elevations of the drill holes.

(2) The stratigraphy, lithologic, physical characteristics and thickness of each stratum, including the location and depth of aquifers.

(3) The hydrologic characteristics of each aquifer described in paragraph (2), including field test data for hydraulic conductivity, storage coefficient and transmissivity, groundwater hydraulic gradient and velocity. The description of these characteristics shall be based on multiple well aquifer tests. Alternative techniques approved by the Department may be employed when multiple well aquifer tests are not feasible. The application shall include the procedures and calculations used to determine these characteristics.

(4) The geologic structure within the proposed permit area and adjacent area, and its relation to the regional geological structure.

(5) The uses of each aquifer.

(6) The aquifer characteristics necessary to accurately describe three dimensional groundwater flow through the proposed permit area and adjacent area, including storage and discharge characteristics.

(7) The extent of coal and noncoal mineral deposits and mines within the proposed permit area, as required by § 289.127 (relating to mineral deposits information).

(8) Wellhead protection areas in accordance with § 109.1 (relating to definitions) that may be impacted by the facility.

(9) A groundwater contour map based upon the highest groundwater level recorded monthly in each boring for the previous year. The Department may require more frequent measurements after significant precipitation events.

(b) A boring or coring not cased and capped and not to be used for groundwater monitoring shall be grouted shut or otherwise sealed in a manner approved by the Department.

Source

The provisions of this § 289.122 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226706) to (226707).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); 25 Pa. Code § 289.113 (relating to maps and related information); and 25 Pa. Code § 289.121 (relating to description of geology, soils and hydrology; general requirements).

§ 289.123. Groundwater quality description.

(a) An application shall contain a description of the chemical characteristics of each aquifer in the proposed permit area and adjacent area, based on at least two quarters, one of which shall include the season of highest local groundwater levels. This description shall be based on quarterly sampling and analysis from each monitoring well for the following parameters:

(1) Ammonia-nitrogen, bicarbonate, calcium, chloride, chemical oxygen demand, fluoride, nitrate-nitrogen, pH, specific conductance, total dissolved solids, total organic carbon, turbidity, iron, manganese, sulfate, total alkalinity, potassium and sodium.

(2) Groundwater elevations in monitoring wells recorded as a distance from the elevation at the well head referenced to mean sea level based on United States Geological Survey datum.

(3) Total and dissolved concentrations of each of the following: arsenic, barium, cadmium, chromium, copper, lead, magnesium, mercury, selenium, silver and zinc.

(4) Tetrachloroethene, trichloroethene, 1,1,1 trichloroethane, 1,2 dibromoethane, 1,1 dichloroethene, 1,2-dichloroethene (cis and trans isomers), vinyl chloride, 1,1 dichloroethane, 1,2-dichloroethane, methylene chloride, toluene, ethylbenzene, benzene and xylene.

(5) Other constituents contained in the waste that may leach into the environment, as determined under § 287.132 (relating to chemical analysis of waste).

(b) For residual waste disposal impoundments permitted by the Department after July 4, 1992, 1 year of data consistent with this section shall be taken prior to the disposal or storage of a waste at the facility. If the facility is to be permitted under §§ 287.111 and 287.113 (relating to notice by impoundments and unpermitted processing or disposal facilities; and permitting procedure for unpermitted processing or disposal facilities), the 1 year of data shall be taken prior to issuance of the permit.

(c) Monitoring wells under this section shall be designed, constructed and maintained in accordance with §§ 289.261—289.263 (relating to general requirements; number, location and depth of monitoring points; and standards for casing of wells). Sampling and analysis shall be conducted in accordance with a plan approved by the Department under § 289.152(b) (relating to water quality monitoring plan).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); 25 Pa. Code § 289.121 (relating to description of geology, soils and hydrology; general requirements); 25 Pa. Code § 289.125 (relating to surface water information); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); and 25 Pa. Code § 289.201 (relating to basic limitations).

§ 289.124. Soil description.

(a) An application shall contain:

(1) The depth to the seasonal high water table within the proposed permit area and adjacent area to demonstrate that the seasonal high water table will not be in contact with the liner system.

(2) A description of the soils to be used for intermediate and final cover, and facility construction, including chemical description, texture, laboratory particle size analyses and quantity. Cross sections of the borrow pits within the proposed permit area shall be included.

(b) In preparing the description of soils and elevations, the applicant shall:

(1) Base the description on a sufficient number of pits, excavations and samples to allow an accurate characterization of the soils in the proposed permit area and adjacent area and each onsite or offsite borrow area.

(2) Use the following soil classification systems:

(i) For intermediate and final cover, the United States Department of Soil Classification System. The United States Department of Agriculture's Soil Classification System is published in "Soil Taxonomy"—Agriculture Handbook #436 of the United States Department of Agriculture, Soil Conservation Service, and is available from the Department or the National Technical Center of the Soil Conservation Service, 160 E. 7th Street, Chester, Pennsylvania 19013-6092.

(ii) For the liner system, site construction and other noncover uses, the Unified Soil Classification System.

(3) Conduct required laboratory particle size analysis according to ASTM D 422 (Standard Method for Particle-Size Analysis of Soils) or another analytical method approved, in writing, by the Department prior to the analysis.

Source

The provisions of this § 289.124 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226708) to (226709).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); 25 Pa. Code § 289.113 (relating to maps and related information); and 25 Pa. Code § 289.121 (relating to geology, soils and hydrology; general requirements).

§ 289.125. Surface water information.

(a) An application shall contain a description of surface waters in the proposed permit area and adjacent areas including, at a minimum:

(1) A description of the watershed in which the proposed permit area is located and other watersheds which may be affected by the proposed facility.

(2) The surface elevations and rates of flow of streams, springs, seeps and mine discharges in the proposed permit area and adjacent area.

(3) A description of the quality of surface waters which will receive flows from surface water or groundwater from the proposed permit area, including laboratory analyses of samples.

(4) A description of the instream macroinvertebrate community in surface waters above and below the proposed permit area.

(b) The surface water information submitted to the Department shall be based on a sufficient number of observations, calculations, weir or flow meter readings and sample analyses to allow an accurate characterization of the physical, chemical and biological characteristics of the surface waters. Chemical parameters analyzed at a minimum, shall be those required under § 289.123 (relating to groundwater quality description).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); and 25 Pa. Code § 289.121 (relating to description of geology, soils and hydrology; general requirements).

§ 289.126. Alternative water supply information.

(a) The applicant shall determine whether the proposed facility is within the groundwater recharge area for a public or private water supply. The applicant shall delineate the position of the proposed permit area within relevant groundwater flow systems. The applicant shall identify public and private water supplies which may potentially be adversely affected by groundwater flow associated with the proposed facility.

(b) For water supplies which may be adversely affected by the proposed facility, the applicant shall submit a detailed hydrogeologic study addressing the potential effect of the proposed facility on the water supplies.

(c) For water supplies which the hydrogeologic study required under subsection (b) indicates may be adversely affected by the proposed facility, the applicant shall demonstrate the following:

(1) The hydrogeologic characteristics of the proposed permit area and adjacent area assure that implementation of the applicant's groundwater monitoring plan will protect water supplies from adverse effects from the facility.

(2) The feasibility of permanently replacing or restoring the water supply to like quantity and quality with the existing supply and at no additional cost to the owner. A description of the means to restore or replace the water supply shall also be provided.

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); and 25 Pa. Code § 289.121 (relating to description of geology, soils and hydrology; general requirements).

§ 289.127. Mineral deposits information.

(a) If the proposed permit area and adjacent area overlie existing workings of an underground mine, the applicant shall submit sufficient information to evaluate the potential for mine subsidence damage to the facility, including the following:

(1) Maps and plans showing the existing workings underlying and within 1,000 feet of the proposed facility.

(2) An investigation with supporting documentation, by a registered professional engineer with geotechnical expertise addressing the probability and potential impacts of future subsidence. The investigation shall address the potential for additional mining beneath the permit and adjacent area, the stability of the final underground workings, the maximum subsidence likely to occur in the future and the effect of that subsidence on the integrity of the facility, and measures which have been or will be taken to stabilize the surface.

(b) If the proposed permit area and adjacent area overlies recoverable or mineable coals, the applicant shall demonstrate that the applicant owns the coal and shall warrant that the coal will not be mined as long as residual waste remains on the site, except for surface mining activities approved in the permit for purposes of facility construction.

Source

The provisions of this § 289.127 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226710) to (226711).

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); 25 Pa. Code § 289.121 (relating to description of geology, soils and hydrology; general requirements); 25 Pa. Code § 289.122 (relating to geology and groundwater description); and 25 Pa. Code § 289.281 (relating to mineral resources).

§ 289.128. Notification of proximity to airport.

An applicant shall notify the Bureau of Aviation of the Pennsylvania Department of Transportation, the Federal Aviation Administration and the airport if a proposed disposal impoundment or expansion, that is planned to receive

putrescible waste, is within 6 miles of an airport runway. The application shall include a copy of each notification and each response to each notification received by the applicant.

Source

The provisions of this § 289.128 adopted January 12, 2001, effective January 13, 2001, 31 Pa.B. 235.

Cross References

This section cited in 25 Pa. Code § 289.111 (relating to basic requirements); and 25 Pa. Code § 289.121 (relating to description of geology, soils and hydrology; general requirements).

**PHASE II APPLICATION REQUIREMENTS—
GENERAL PROVISIONS**

§ 289.131. Basic requirements.

(a) The Phase II permit application shall:

(1) Comply with this section and §§ 289.132—289.138, 289.141, 289.142, 289.151, 289.152, 289.161—289.163, 289.171 and 289.172.

(2) Comply with Chapter 287, Subchapter E (relating to bonding and insurance requirements).

(b) Applications, plans, cross sections, modules and narratives shall demonstrate how the construction and operating requirements of Subchapter C (relating to operating requirements) will be implemented, and shall include quality control measures necessary to ensure proper implementation.

(c) The plans, designs, cross sections and maps required by this section and §§ 289.132—289.138, 289.141, 289.142, 289.151, 289.152, 289.161—289.163, 289.171 and 289.172 shall be on a scale in which 1 inch equals no more than 200 feet with 10-foot maximum contour intervals.

Source

The provisions of this § 289.131 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226711).

§ 289.132. Operation plan.

An application shall contain a description of the residual waste disposal impoundment operations proposed during the life of the facility within the proposed permit area, including, at a minimum, the following:

(1) A narrative describing the type and method of residual waste disposal impoundment procedures, procedures for inspection and monitoring of incoming waste, sequence of disposal activity, type of disposal activity, proposed engineering techniques and the major equipment to be used under § 289.225 (relating to equipment), using the maps and grids required by § 289.133 (relating to map and grid requirements) as a basis for the description.

- (2) A narrative explaining the method and schedule for construction, operation, modification, use, maintenance and removal of the following components of the proposed facility, unless their retention is proposed for postclosure land use:
 - (i) Dams, embankments, ditches and other impoundments.
 - (ii) Borrow pits, soil storage and handling areas and structures.
 - (iii) Water and air pollution control facilities.
 - (iv) Erosion and sedimentation control facilities.
 - (v) Equipment storage and maintenance buildings, and other buildings.
 - (vi) Access roads.
- (3) A construction schedule and sequence of operations, and a site preparation plan and a schedule for disposing of solid waste at the site.
- (4) An explanation of how the applicant intends to comply with § 289.224 (relating to measurement and inspection of waste).
- (5) A plan for assuring that solid waste received at the facility is consistent with the following:
 - (i) Section 289.201 (relating to basic limitations).
 - (ii) Section 289.423 or § 289.523 (relating to minimum requirements for acceptable waste; and minimum requirements for acceptable waste), whichever applies.
- (6) The proposed operating hours of the proposed facility. The operating hours include those hours related to construction and other activities related to operation of the facility.

Source

The provisions of this § 289.132 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226711) to (226712).

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

§ 289.133. Map and grid requirements.

- (a) An application shall contain a topographic map of the proposed permit and adjacent areas showing the following:
 - (1) The boundaries of lands proposed to be affected over the estimated total life of the proposed operation and the sequence of disposal and closure.
 - (2) A change in a component of the facility or a feature within the proposed permit area to be caused by the proposed operation.
 - (3) Buildings, utility corridors and facilities which will be used in the operation.
 - (4) The areas of land for which a bond will be posted under Chapter 287, Subchapter E (relating to bonding and insurance requirements).
 - (5) The solid waste storage, processing or unloading areas.

- (6) The water diversion, collection, conveyance, erosion and sedimentation control, treatment, storage and discharge facilities to be used.
 - (7) The gas management, collection and control facilities, if required.
 - (8) The boundaries of construction activities.
 - (9) The location of barriers, fences and similar structures required by § 289.222 (relating to access control).
 - (10) The location of each sedimentation pond, permanent water impoundment or similar facility.
 - (11) The location of access roads to the site, including slopes, grades and lengths of the roads.
 - (12) The location and identity of monitoring wells.
 - (13) For noncaptive residual waste disposal impoundments, a designated area for vehicles for use in the event of the detection of waste containing radioactive material. The designated area shall, by location or shielding, protect the environment, facility staff and public from radiation originating in the vehicle. The Department's "Guidance Document on Radioactivity Monitoring at Solid Waste Processing and Disposal Facilities," Document Number 250-3100-001, describes various factors to consider in determining an appropriate designated area.
- (b) The applicant shall also submit a grid coordinate system for the entire proposed permit area. The horizontal control system shall consist of a grid not to exceed 200-foot square sections unless the facility is larger than 250 acres and the Department approves, in writing, the use of a grid that exceeds 200-foot square sections. A permanent benchmark for horizontal and vertical control shall be shown. The grid system shall be a state or universal grid system and shall be tied to the benchmark and the baseline.

Source

The provisions of this § 289.133 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226712) to (226713).

Cross References

This section cited in 25 Pa. Code § 287.135 (relating to transition period for radiation monitoring); 25 Pa. Code § 289.113 (relating to maps and related information); 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.132 (relating to operation plan).

§ 289.134. Plan for access roads.

The application shall contain designs, cross sections and specifications for access roads, including load limits, in accordance with § 289.223 (relating to access roads).

Source

The provisions of this § 289.134 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226713).

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.223 (relating to access roads).

§ 289.135. Access control plan.

The application shall contain plans sufficient to demonstrate compliance with § 289.222 (relating to access control), including plans showing fencing and barriers to be constructed at the proposed facility in full elevation, fully dimensioned and with the type of construction materials specified.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

§ 289.136. Nuisance minimization and control plan.

(a) The application shall contain a plan in accordance with § 289.228 (relating to nuisance minimization and control) to minimize and control hazards or nuisances from vectors, odors, noise, dust, unsightliness and other nuisances not otherwise provided for in the permit application.

(b) The plan shall include the following:

- (1) Provisions for the routine assessment and control of vector infestation.
- (2) Methods to minimize and control nuisances from odors, dustfall and noise off the property boundary from the facility.
- (3) For odors, the determination of normal and adverse weather conditions based on site-specific meteorological data. Prior to the installation of equipment and collection of meteorological data, a protocol for the installation and data collection shall be approved by the Department.

(c) The plan required in subsection (a) may include a contractual arrangement for services of an exterminator or an air quality, noise, dust control or other professional.

Source

The provisions of this § 289.136 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226713).

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.228 (relating to nuisance minimization and control).

§ 289.137. Daily volume.

The application shall contain proposed average and maximum daily volumes for the facility, and a detailed justification for these volumes, based on §§ 287.126 and 287.127 (relating to requirements for environmental assessment; and environmental assessment).

Source

The provisions of this § 289.137 adopted January 12, 2001, effective January 13, 2001, 31 Pa.B. 235.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

§ 289.138. Radiation Protection Action Plan.

(a) An application for a noncaptive residual waste disposal impoundment shall contain an action plan specifying procedures for monitoring for and responding to radioactive material entering the facility, as well as related procedures for training, notification, recordkeeping and reporting.

(b) The action plan shall be prepared in accordance with the Department's "Guidance Document on Radioactivity Monitoring at Solid Waste Processing and Disposal Facilities," Document Number 250-3100-001, or in a manner at least as protective of the environment, facility staff and public health and safety and which meets all statutory and regulatory requirements.

(c) The action plan shall be incorporated into the disposal impoundment's approved waste analysis plan under § 287.134 (relating to waste analysis plan).

Source

The provisions of this § 289.138 adopted January 12, 2001, effective January 13, 2001, 31 Pa.B. 235.

Cross References

This section cited in 25 Pa. Code § 287.135 (relating to transition period for radiation monitoring); 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.230 (relating to radiation monitoring and response for noncaptive residual waste disposal impoundments).

**PHASE II APPLICATION REQUIREMENTS—
COVER AND REVEGETATION****§ 289.141. Cover plan.**

An application shall contain a plan for cover at the proposed facility under § 289.242 (relating to cover) including, at a minimum, the following information:

- (1) The procedures for application of cover material.
- (2) The procedures to establish elevation and grade of final cover.

Source

The provisions of this § 289.141 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226714).

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

§ 289.142. Revegetation plan.

An application shall contain a plan for revegetation of affected areas in accordance with §§ 289.244 and 289.245 (relating to revegetation; and standards for successful revegetation). The plan shall identify the species that are proposed to be planted, seeding rates and method of revegetation.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

**PHASE II APPLICATION REQUIREMENTS—WATER
QUALITY PROTECTION AND MONITORING****§ 289.151. Soil erosion and sedimentation control plan.**

(a) The applicant shall submit a plan to manage surface water and control erosion during all phases of construction and operation at the proposed facility. The plan shall be based on the requirements of Chapter 102 and §§ 289.252—289.254 and other applicable State and Federal requirements. Calculations indicating water quantities shall be based on the 24-hour precipitation event by inches to be expected once in 25 years.

(b) The plan shall include fully dimensioned diversion ditches, indicating length, gradient and cross section for configuration by reach, and capacities for ditch volume by reach. The calculations which are necessary to support design and siting shall be included in the plan.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

§ 289.152. Water quality monitoring plan.

(a) An application shall contain a water quality monitoring plan showing how the operator intends to comply with §§ 289.261—289.268 (relating to water quality monitoring). The plan shall include, at a minimum, the following:

- (1) The number, location and design of proposed monitoring points.
- (2) For new facilities, preoperational data showing existing groundwater quality, as required by § 289.123 (relating to groundwater quality description), and a procedure to establish this groundwater quality. For existing facilities, adequate monitoring data as required by § 288.123 (relating to groundwater quality description) to characterize background groundwater quality and a procedure to establish this groundwater quality.

(b) The application shall contain a groundwater sampling and analysis plan. The plan shall include:

- (1) Procedures and techniques designed to accurately measure groundwater quality upgradient, beneath and downgradient of the proposed waste disposal area.

- (2) Department approved sampling and analytical methods that are specific to the proposed facility and that will accurately measure solid waste, solid waste constituents, leachate or constituents of decomposition in the groundwater.
- (3) Procedures and techniques for sample collection, sample preservation and shipment, analytical procedures, chain of custody control and field and laboratory quality assurance and quality control.
- (4) Procedures and techniques for evaluation of analytical results to determine if groundwater degradation has occurred.
- (c) The Department may approve the use of an alternate groundwater monitoring system for facilities located in the anthracite coal region if the applicant demonstrates the following to the Department's satisfaction with a detailed hydrogeologic study:
 - (1) The nature and extent of underground coal mining beneath the proposed facility makes impracticable the installation of the groundwater monitoring system required by this subchapter.
 - (2) The proposed alternate system is capable of completely and accurately identifying adverse effects on groundwater from the proposed facility.

Source

The provisions of this § 289.152 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226715) to (226716).

Cross References

This section cited in 25 Pa. Code § 289.123 (relating to groundwater quality description); 25 Pa. Code § 289.131 (relating to basic requirements); 25 Pa. Code § 289.265 (relating to reporting of analysis results and data evaluation) and 25 Pa. Code § 299.143 (relating to application requirements).

PHASE II APPLICATION REQUIREMENTS— MISCELLANEOUS PROVISIONS

§ 289.161. Impoundment plan.

The application shall contain a plan, including specifications, designs and cross sections, in accordance with §§ 289.271—289.274 (relating to impoundments). The plan shall include, at a minimum:

- (1) The proposed volumetric capacity of each impoundment.
- (2) A schedule for construction and operation of each impoundment.
- (3) A slope stability analysis of the dike system that is proposed to support the impoundment.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.436 (relating to primary liner).

§ 289.162. Gas monitoring and control plan.

(a) When the decomposition of the waste that is proposed to be disposed at the facility may generate gas, the application shall include a plan under § 289.282 (relating to gas control and monitoring) sufficient to detect and control gas emanating from the facility. The plan shall include the following:

(1) A plan to monitor and record offsite gas migration and gas accumulation on and off the site, including structures.

(2) Designs for a gas control system, indicating the location and scheduling of construction, and the design of vents, barriers, collection pipes, manifolds or other control measures that will be put in place.

(b) If gas recovery is proposed or required, the application shall also include the following:

(1) Drawings and a narrative detailing the location and design of the proposed gas recovery system and the major onsite components of the system, which shall be consistent with § 289.283 (relating to gas recovery).

(2) Plans and designs to address special storage, transportation, processing, treatment or disposal measures anticipated or required in the management of the generated gases, condensates or other residues.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements); 25 Pa. Code § 289.282 (relating to gas control and monitoring); and 25 Pa. Code § 289.283 (relating to gas recovery).

§ 289.163. Contingency plan.

An application shall contain a contingency plan consistent with §§ 289.291—289.293 (relating to emergency procedures). The plan shall include a Preparedness, Prevention and Contingency (PPC) Plan that is consistent with the Department's most recent guidelines for the development and implementation of PPC plans.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements).

**PHASE II APPLICATION REQUIREMENTS—
CLOSURE PROVISIONS****§ 289.171. Postclosure land use plan.**

An application shall contain a detailed description of the proposed use following closure of the proposed facility, including a discussion of the utility and capacity of the revegetated land to support a variety of alternative uses, and the relationship of the use to existing land use policies and plans. The description shall explain the following:

- (1) How the proposed postclosure land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use.
- (2) The consideration which has been given to making the proposed post-closure land use consistent with landowner plans and applicable State and local land use plans and programs.

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.311 (relating to postclosure land use).

§ 289.172. Closure plan.

- (a) The application shall contain a plan describing the activities that are proposed to occur in preparation for closure and after closure to ensure compliance with this chapter.
- (b) The closure plan shall include:
 - (1) A plan for the decontamination and removal of equipment, structures and related material from the facility.
 - (2) An estimate of the year in which final closure will occur, including an explanation of the basis for the estimate.
 - (3) A description of the steps necessary for closure if the facility closes prematurely.
 - (4) A narrative description, including a schedule of measures that are proposed to be carried out in preparation for closure and after closure at the facility, including measures relating to the following:
 - (i) Water quality monitoring.
 - (ii) Gas control and monitoring.
 - (iii) Leachate collection and treatment.
 - (iv) Erosion and sedimentation control.
 - (v) Revegetation and regrading, including maintenance of the final cover.
 - (vi) Access control, including maintenance of access control.
 - (5) A description of the means by which funds will be made available to cover the cost of postclosure operations, which shall include an assessment of projected postclosure maintenance costs, a description of how the necessary funds will be raised, a description of where the funds will be deposited, copies of relevant legal documents and a description of how the funds will be managed prior to closure.
 - (6) The name, address and telephone number at which the operator may be reached during the postclosure period.
- (c) A person or municipality may propose, as part of the closure plan submitted under this section, to remove standing liquids, waste and waste residues, liners, and underlying and surrounding contaminated soil, and to dispose of the

waste material at a solid waste management facility that is permitted to accept the waste. The person or municipality may request final closure certification under § 287.342 (relating to final closure certification) upon completion of a closure plan approved under this subsection.

Source

The provisions of this § 289.172 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226718) to (226719).

Cross References

This section cited in 25 Pa. Code § 289.131 (relating to basic requirements); and 25 Pa. Code § 289.312 (relating to closure).

Subchapter C. OPERATING REQUIREMENTS

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- Sec.
289.201. Basic limitations.
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- 289.211. Waste analysis.
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- 289.241. [Reserved].
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- 289.251. General requirements.
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- 289.271. General requirements.
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- 289.301. Daily operational records.
- 289.302. [Reserved].
- 289.303. Annual operation report.

CLOSURE PROVISIONS

- 289.311. Postclosure land use.
- 289.312. Closure.

Cross References

This subchapter cited in 25 Pa. Code § 289.131 (relating to basic requirements); 25 Pa. Code § 289.421 (relating to basic limitations); and 25 Pa. Code § 289.521 (relating to limitations).

GENERAL PROVISIONS**§ 289.201. Basic limitations.**

(a) Except as provided in subsection (b), a person or municipality may not own or operate a residual waste disposal impoundment unless the Department has first issued a permit to the person or municipality for the facility under this chapter.

(b) A person or municipality may conduct monitoring under § 289.123 (relating to groundwater quality description) without a permit from the Department if the Department has given written approval for the monitoring based on written plans that are consistent with this chapter.

(c) A person or municipality that operates a residual waste disposal impoundment shall comply with the following:

(1) The act, this article and other applicable regulations promulgated under the act.

(2) The plans and specifications in the permit, the terms and conditions of the permit, the environmental protection acts, the Department's regulations and orders issued by the Department.

(d) A person or municipality may not allow residual waste to be disposed at the facility unless the Department has specifically approved the disposal of the waste at the facility, in the permit.

(e) All approved mitigation measures identified in the permit application shall be completed before a facility may accept waste unless otherwise authorized in writing by the Department for technical reasons.

(f) The following radioactive material controlled under specific or general license or order authorized by any Federal, state or other government agency may not be disposed at the facility, unless specifically exempted from disposal restriction by an applicable Pennsylvania or Federal statute or regulation:

- (1) Naturally occurring and accelerator produced radioactive material.
- (2) Byproduct material.
- (3) Source material.
- (4) Special nuclear material.
- (5) Transuranic radioactive material.
- (6) Low-level radioactive waste.

(g) The following radioactive material may not be disposed at the facility, unless approved in writing by the Department and the disposal does not endanger the environment, facility staff or public health and safety.

- (1) Short-lived radioactive material from a patient having undergone a medical procedure.
- (2) TENORM.
- (3) Consumer products containing radioactive material.

(h) The limitations in subsections (f) and (g) do not apply to radioactive material as found in the undisturbed natural environment of the Commonwealth.

Source

The provisions of this § 289.201 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226721) to (226722).

Cross References

This section cited in 25 Pa. Code § 289.132 (relating to operation plan); and 25 Pa. Code § 289.211 (relating to waste analysis).

§ 289.202. Certification.

(a) The operator shall submit a certification by a Pennsylvania registered professional engineer on forms provided by the Department upon completion of each major construction activity identified in the permit for each phase or sequence of construction at the facility. Major construction activities include:

- (1) Construction of the groundwater monitoring system.
- (2) Construction of the subbase.
- (3) Construction of the secondary liner.
- (4) Construction of the leachate detection zone.
- (5) Construction of the primary liner.
- (6) Construction of the protective cover and the collection system within the protective cover.
- (7) Construction of a leachate treatment facility.

- (8) Construction of a sedimentation pond.
- (9) Closure.
- (10) Final closure.

(b) The certification shall describe the construction activity and the phase or sequence of construction being certified, using drawings and plans when appropriate. The certification shall include testing results to prove compliance with the approved quality assurance plan. The certification shall state that the actual construction was observed by the engineer or persons under his direct supervision, and that the supervision was carried out in a manner that is consistent with the approved permit.

(c) Upon completion of each construction activity described in subsection (a) other than construction of a leachate treatment facility, the operator shall notify the Department that the construction activity is ready for inspection. Waste may not be disposed in the area subject to the inspection until the Department has conducted an inspection that has transmitted its written approval to the permittee indicating that construction was done according to the permit. The Department may, as part of an approved quality assurance and control plan, authorize a Pennsylvania registered professional engineer who is on the site continuously during construction to certify completion of a construction activity and authorize continuation of the next phase of construction activity prior to written approval from the Department.

Cross References

This section cited in 25 Pa. Code § 299.144 (relating to operating requirements).

WASTE LIMITATIONS

§ 289.211. Waste analysis.

(a) The operator shall inspect each load in accordance with its approved plan under § 287.134 (relating to waste analysis plan) to ensure compliance with that section, § 289.201 (relating to basic limitations) and whichever of the following sections is applicable:

- (1) Section 289.423 (relating to minimum requirements for acceptable waste).
- (2) Section 289.523 (relating to minimum requirements for acceptable waste).

(b) The operator shall maintain analyses of the waste under § 287.134 onsite for a minimum of 5 years after the analyses are performed. These records shall be made available to any representative of the Department upon request.

(c) A person or municipality shall immediately notify the Department if analyses under § 287.134 indicate that there is a significant change in the quality of the waste.

§ 289.212. Waste solidification.

(a) A person or municipality may not dispose of residual waste at a residual waste disposal impoundment unless the waste meets both of the following:

(1) The free liquid fraction of the waste shall readily separate from the solid fraction and shall be collected and discharged in accordance with this chapter.

(2) The waste shall solidify by a chemical or physical process concurrently with disposal or within the shortest period of time technologically practicable. Except for impoundments subject to §§ 289.438(c) and 289.537(c) (relating to leachate collection system within protective cover; and leachate collection system within protective cover), the waste shall solidify prior to closure.

(b) The waste in the impoundment after the requirements of subsection (a) have been met shall be capable of withstanding a minimum bearing capacity of 1.5 tons per square foot with a minimum factor of safety of 1.5. The bearing capacity and minimum factor of safety may be waived by the Department in the permit based upon the postclosure use of the facility.

Source

The provisions of this § 289.212 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226723).

Cross References

This section cited in 25 Pa. Code § 289.114 (relating to waste solidification plan); 25 Pa. Code § 289.438 (relating to leachate collection system within protective cover); and 25 Pa. Code § 289.537 (relating to leachate collection system within protective cover).

DAILY OPERATIONS**§ 289.221. Signs and markers.**

(a) Permanent physical elevation markers for the impoundment area shall be:

(1) Posted and maintained for the duration of the operations to which they pertain.

(2) Clearly visible, readable and uniform throughout the operation.

(3) Permanently fixed and made of a durable material.

(b) The perimeter of the site shall be clearly marked before the beginning of operations.

(c) The permanent physical elevation markers shall be installed at the locations in the permit, prior to the beginning of disposal operations.

(d) A person or municipality that operates a noncaptive residual waste disposal impoundment shall identify the facility for the duration of operations by posting and maintaining a sign which is clearly visible and can be easily seen and read at the junction of each access road and public road. The sign shall be constructed of a durable, weather-resistant material. The sign shall show the name, business address and telephone number of the person or municipality that oper-

ates the facility, the operating hours of the facility and the number of the current permit authorizing operation of the facility.

Source

The provisions of this § 289.221 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226724).

§ 289.222. Access control.

(a) At facilities except local captive facilities the following requirements apply:

(1) A gate or other barrier shall be maintained at potential vehicular access points to block unauthorized access to the site when an attendant is not on duty.

(2) The operator shall maintain a fence or other suitable barrier around the site, including impoundments, lagoons, leachate collection and treatment systems and gas processing facilities, sufficient to prevent unauthorized access.

(3) Access to the site shall be limited to times when an attendant is on duty.

(b) At local captive facilities, the operator shall comply with subsection (a) unless the Department approves in the permit alternative means of protecting access to the site that afford an equivalent degree of protection.

Source

The provisions of this § 289.222 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226724).

Cross References

This section cited in 25 Pa. Code § 289.133 (relating to map and grid requirements); and 25 Pa. Code § 289.135 (relating to access control plan).

§ 289.223. Access roads.

(a) Access roads shall be designed, constructed and maintained to prevent erosion to the maximum extent possible and to prevent contributions of sediment to streams or runoff outside the site.

(b) Crossing of a perennial or intermittent stream or a wetland shall be made using bridges, culverts or similar structures. Bridges, culverts or other encroachments or water obstructions shall meet the requirements of Chapter 105 (relating to dam safety and waterway management).

(c) An access road shall have a drainage system that is compatible with the natural drainage system, structurally stable and which will pass safely the peak flow from a 25-year, 24-hour precipitation event. For roads that are used or in existence for more than 30 days, the drainage system shall include sloped or crowned road surfaces, cross drains or culverts, stabilized ditches, erosion resistant surfacing, sediment traps and other appropriate sediment control measures as required by § 289.252 (relating to soil erosion and sedimentation control).

(d) An access road shall be paved or surfaced with asphalt, gravel, cinders or other equivalent material approved by the Department in the permit. An access road shall be capable of withstanding the load limits projected by the applicant under § 289.134 (relating to plan for access roads). The maximum sustained grade of an access road may not exceed 12% unless otherwise approved by the Department for captive facilities.

(e) Except for captive facilities where the Department has set forth alternate requirements in the permit and except for roads not leading to the disposal area, the disposal impoundment shall maintain a minimum cartway width of one of the following:

(1) Twenty-two feet for two-way traffic.

(2) Twelve feet for one-way traffic with pull-off intervals every 100 yards or a greater distance where there is a clear view of approaching vehicles.

(f) An access road negotiable by loaded collection vehicles shall be provided from the entrance gate of the facility to each unloading area. An access road shall be provided to each treatment facility, impoundment, and groundwater monitoring point. Other monitoring points shall be readily accessible.

(g) Disturbed areas adjacent to a road shall be vegetated or otherwise stabilized to prevent erosion.

(h) An access road shall be maintained to control dust and to prevent or control the tracking of mud on and off the site.

(i) An access road shall be designed, constructed and maintained to allow the orderly egress and ingress of vehicular traffic when the facility is in operation, including during inclement weather.

Source

The provisions of this § 289.223 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226725) to (226726).

Cross References

This section cited in 25 Pa. Code § 289.134 (relating to plan for access roads); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.224. Measurement and inspection of waste.

(a) For a noncaptive facility that has received, is receiving or will receive 30,000 or more cubic yards of solid waste in a calendar year, the following apply:

(1) Except as provided in paragraph (2), the operator shall weigh solid waste when it is received. The scale used to weigh solid waste shall conform to 3 Pa.C.S. Chapter 41 (relating to the Consolidated Weights and Measures Act) and 70 Pa. Code Part I (relating to weighmasters). The operator of the scale shall be a licensed public weighmaster under 3 Pa.C.S. Chapter 41 and 70 Pa. Code Part I.

(2) The Department may approve, in the permit, an alternative method of accurately measuring waste when it is received.

(b) For other facilities, solid waste received or disposed of at the facility shall be accurately weighed or otherwise accurately measured.

(c) The operator of a facility shall inspect and monitor incoming waste to ensure that the receipt of waste is consistent with this article.

Source

The provisions of this § 289.224 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226726).

Cross References

This section cited in 25 Pa. Code § 289.132 (relating to operation plan).

§ 289.225. Equipment.

(a) The operator shall maintain on the site equipment necessary for the operation of the facility in accordance with the permit. The equipment shall be maintained in an operable condition.

(b) If a breakdown of the operator's equipment occurs, the operator shall utilize standby equipment as necessary to comply with the act, the environmental protection acts, this subchapter and permit conditions.

Source

The provisions of this § 289.225 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226726).

Cross References

This section cited in 25 Pa. Code § 289.132 (relating to operation plan).

§ 289.226. Unloading.

The following apply at each facility other than a local captive facility:

(1) An attendant or clearly marked signs shall direct vehicles to the unloading area.

(2) The operator shall ensure that collection vehicles unload waste promptly in unloading areas.

§ 289.227. Air resources protection.

(a) The operator shall implement fugitive air contaminant control measures and otherwise prevent and control air pollution in accordance with the Air Pollution Control Act (35 P. S. §§ 4001—4015); Article III (relating to air resources) and § 289.228 (relating to nuisance minimization and control). Minimization and control measures shall include the following:

(1) Ensuring that operation of the facility will not cause or contribute to an exceedance of an ambient air quality standard under § 131.3 (relating to ambient air quality standards).

(2) Ensuring that no open burning occurs at the facility.

- (3) Minimizing the generation of fugitive dust emissions from the facility.
- (b) The operator shall comply with the terms and conditions of an air quality plan approval and air quality operating permit issued to the facility.

Source

The provisions of this § 289.227 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226726) to (226727).

Cross References

This section cited in 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.228. Nuisance minimization and control.

(a) *Vectors.* An operator may not cause or allow the attraction, harborage or breeding of vectors.

(b) *Odors.*

(1) An operator shall implement the plan approved under § 289.136 (relating to nuisance minimization and control plan) to minimize and control public nuisances from odors. If the Department determines during operation of the facility that the plan is inadequate to minimize or control public nuisances, the Department may modify the plan or require the operator to modify the plan and obtain Department approval.

(2) An operator shall perform regular, frequent and comprehensive site inspections to evaluate the effectiveness of cover, capping, gas collection and destruction, waste acceptance and all other waste management practices in reducing the potential for offsite odor creation.

(3) An operator shall promptly address and correct problems and deficiencies discovered in the course of inspections performed under paragraph (2).

(c) *Other.* An operator shall implement the plan approved under § 289.136 to minimize and control other conditions that are harmful to the environment or public health, or which create safety hazards, odors, dust, noise, unsightliness and other public nuisances.

Source

The provisions of this § 289.228 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226727).

Cross References

This section cited in 25 Pa. Code § 289.136 (relating to nuisance control plan); 25 Pa. Code § 290.411 (relating to storage impoundments—operating requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.229. Daily volume.

(a) A person or municipality operating a residual waste impoundment may not receive solid waste at the impoundment in excess of the maximum or average daily volume approved in the permit.

(b) The average daily volume is a limit on the volume of solid waste that is permitted to be received at the facility, and shall be computed annually by averaging the total volume received over the year.

Source

The provisions of this § 289.229 adopted January 12, 2001, effective January 13, 2001, 31 Pa.B. 235.

Cross References

This section cited in 25 Pa. Code § 289.303 (relating to annual operation report).

§ 289.230. Radiation monitoring and response for noncaptive residual waste disposal impoundments.

(a) An operator shall implement the action plan approved under § 289.138 (relating to radiation protection action plan).

(b) An operator shall monitor incoming waste in accordance with the Department's "*Guidance Document on Radioactivity Monitoring at Solid Waste Processing and Disposal Facilities*," Document Number 250-3100-001, or in a manner at least as protective of the environment, facility staff and public health and safety. Monitoring shall meet the requirements of this section and the facility's approved radiation protection action plan.

(c) Radiation detector elements shall be as close as practical to the waste load and in an appropriate geometry to monitor the waste. The radiation monitoring system shall be set to alarm at a level no higher than 10 microrentgen per hour (uR/hr) above the average background at the facility when any of the radiation detector elements is exposed to a Cesium-137 gamma radiation field. Radiation detector elements shall be shielded to maintain the average background below 10 uR/hr. If capable of energy discrimination, the radiation monitoring system shall be set to detect gamma rays of a 50 kiloelectron volt (keV) energy and higher.

(d) An operator shall have portable radiation monitors capable of determining the radiation dose rate and presence of contamination on a vehicle that has caused an alarm. Upon a confirmed exceedance of the alarm level in subsection (c), a radiological survey of the vehicle shall be performed.

(e) An operator shall notify the Department immediately and isolate the vehicle when radiation dose rates of 20 μ Sv/hr (2 mrem/hr) or greater are detected in the cab of a vehicle, 500 μ Sv/hr (50 mrem/hr) or greater are detected from any other surface, or contamination is detected on the outside of the vehicle.

(f) Monitoring equipment shall be calibrated at a frequency specified by the manufacturer, but not less than once a year.

(g) If radioactive material is detected, the vehicle containing the radioactive material may not leave the facility without written Department approval and an authorized Federal Department of Transportation Exemption Form.

Source

The provisions of this § 289.230 adopted January 12, 2001, effective January 13, 2001, 31 Pa.B. 235.

COVER AND REVEGETATION**§ 289.241. [Reserved].****Source**

The provisions of this § 289.241 reserved January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226727).

§ 289.242. Cover.

(a) The operator shall place final cover within 1 year after closure. The Department may require placement and revegetation of an intermediate cover that meets the requirements of § 288.233 (relating to intermediate cover and slopes), during the period between closure and construction of the final cover system.

(b) Except as provided in subsection (c), the operator shall provide final cover in the following manner:

(1) A cap shall be placed and graded over the entire surface of each final lift. The cap may be no more permeable than 1.0×10^{-7} cm/sec. The following performance standards for the cap shall be met:

(i) The cap shall minimize the migration of precipitation into the land-fill.

(ii) The cap shall be resistant to physical and chemical failure.

(iii) The cap shall cover all areas where waste is disposed.

(2) A drainage layer capable of transmitting flow and preventing erosion of the soil layer shall be placed over the cap.

(3) A uniform layer of material shall be placed over the drainage layer. The layer of material shall support vegetation and protect the cap.

(c) The Department may waive the cap and drainage layer requirements of subsection (b)(1) and (2) based on a demonstration that it is not necessary to limit infiltration into the waste.

(d) Unless alternative design requirements to meet the performance standards in subsection (b)(1) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the cap shall meet the design requirements for caps in Appendix A, Table II (relating to minimum liner design standards).

(e) The layer of material described in subsection (b)(3) and intermediate cover, if required, shall meet the following performance standards. Cover material shall:

(1) Prevent vectors, odors and other nuisances.

(2) Cover residual waste after it is placed without change in its properties and without regard to weather.

- (3) Be capable of controlling fires.
 - (4) Be capable of supporting the germination and propagation of vegetative cover as required by §§ 289.244 and 289.245 (relating to revegetation; and standards for successful revegetation).
 - (5) Not crack excessively when dry.
 - (6) Be capable of preventing frost damage to the cap.
 - (7) For intermediate cover, compact well.
 - (8) Be consistent with the waste acceptance plan.
- (f) Unless alternative design requirements to meet the performance standards in subsection (e) are approved as part of the permit under § 287.231, the layer of material described in subsection (b)(3) shall meet the following design requirements:
- (1) The cover soil shall fall within the United States Department of Agriculture textural classes of sandy loam, loam, sandy clay loam, silty clay loam, loamy sand and silt loam.
 - (2) At least 40% by weight of the cover soil shall be capable of passing through a 2 millimeter, No. 10 mesh sieve.
 - (3) The cover may not include rocks that are greater than 6 inches in diameter.
 - (4) The layer of cover soil shall be at least 2 feet thick.

Source

The provisions of this § 289.242 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226727) to (226728).

Cross References

This section cited in 25 Pa. Code § 289.141 (relating to cover plan).

§ 289.243. Noncontiguous borrow areas.

Extraction and removal of cover and related material from offsite borrow areas shall be subject to the Noncoal Surface Mining Conservation and Reclamation Act (51 P. S. §§ 3301—3326), The Clean Streams Law, and regulations promulgated thereunder, including Chapter 102 (relating to erosion and sediment control). Borrow areas located less than 300 feet from the disposal area shall be included in the permit area for the disposal facility as part of the permit application under this article.

§ 289.244. Revegetation.

- (a) Vegetation shall be established on land affected by a residual waste disposal impoundment.
- (b) Revegetation shall provide for an effective and permanent vegetative cover of the same seasonal variety as vegetation native to the site and capable of self-regeneration and plan succession. Introduced species may be used when

desirable and necessary to achieve the approved postclosure land use. Vegetative cover shall be considered of the same seasonal variety when it consists of a mixture of species that is of equal or superior utility to native vegetation during each season of the year.

(c) Revegetation shall provide a quick germinating, fast-growing vegetative cover capable of stabilizing the soil surface from erosion.

(d) Disturbed areas shall be seeded and planted when weather and planting conditions permit, but the seeding and planting of disturbed areas shall be performed by the first normal period for favorable planting after final grading.

(e) Fertilizer and lime shall be applied to disturbed areas as necessary to maintain plant growth.

(f) Mulch shall be applied to regraded areas where necessary to control erosion, promote germination of seeds and increase the moisture retention of the soil.

Cross References

This section cited in 25 Pa. Code § 289.142 (relating to revegetation plan); 25 Pa. Code § 289.242 (relating to cover); and 25 Pa. Code § 289.252 (relating to soil erosion and sedimentation control).

§ 289.245. Standards for successful revegetation.

(a) The standard for successful revegetation shall be the percent of ground cover of the vegetation which exists on the site. The Department will not approve less than a 70% ground cover of permanent plant species. No more than 1% of the total area may have less than 30% ground cover. A single or contiguous area exceeding 3,000 square feet may not have less than 30% ground cover.

(b) Trees, woody shrubs or deep rooted plants may not be planted or allowed to grow on the revegetated area of capped sites, unless otherwise allowed by the Department in the permit based on a demonstration that roots will not penetrate the cap or drainage layer.

Cross References

This section cited in 25 Pa. Code § 289.142 (relating to revegetation plan); 25 Pa. Code § 289.242 (relating to cover); and 25 Pa. Code § 289.252 (relating to soil erosion and sedimentation control).

WATER QUALITY PROTECTION

§ 289.251. General requirements.

(a) The operator may not cause or allow a point or nonpoint source discharge in violation of The Clean Streams Law from or on the facility to surface waters of the Commonwealth.

(b) A residual waste disposal impoundment shall be operated to prevent and control water pollution. An operator shall operate and maintain necessary water treatment facilities until water pollution from the facility has been permanently abated.

(c) The operator may not cause or allow water pollution within or outside the site.

Cross References

This section cited in 25 Pa. Code § 289.253 (relating to sedimentation ponds).

§ 289.252. Soil erosion and sedimentation control.

(a) The operator shall manage surface water and control soil erosion and sedimentation, based on the 24-hour precipitation event in inches to be expected once in 25 years.

(b) The operator shall:

(1) Prevent or minimize surface water run-on into the solid waste deposited at the facility.

(2) Meet the requirements of Chapter 102 (relating to erosion and sediment control).

(3) Prevent soil erosion and sedimentation to the maximum extent possible.

(c) When rills or gullies deeper than 9 inches form in areas that have been regraded and planted, the rills and gullies shall be filled, graded or otherwise stabilized and the area reseeded or replanted according to §§ 289.244 and 289.245 (relating to revegetation; and standards for successful revegetation). Rills or gullies of lesser size shall be stabilized and the area reseeded or replanted if the rills or gullies are disruptive to the approved postclosure land use or may result in additional erosion and sedimentation.

Cross References

This section cited in 25 Pa. Code § 289.151 (relating to soil erosion and sedimentation control plan); and 25 Pa. Code § 289.223 (relating to access roads).

§ 289.253. Sedimentation ponds.

(a) Surface drainage from the disturbed area, including areas that have been graded, seeded or planted, shall be passed through a sedimentation pond or a series of sedimentation ponds before leaving the site. The Department may, in the permit, waive the required use of sedimentation ponds when a person or municipality demonstrates to the satisfaction of the Department that sedimentation ponds are not necessary to meet the requirements of § 289.251 (relating to general requirements).

(b) Sedimentation ponds shall be constructed, operated and maintained under this section and Chapter 102 and 105 (relating to erosion and sediment control; and dam safety and waterway management) and the minimum design criteria contained in the United States Soil Conservation Service's Engineering Standard 378, 'Pond' Pa.

(c) Sedimentation ponds and other treatment facilities shall be maintained until removal of the ponds and facilities is approved by the Department.

(d) Ponds shall include a nonclogging dewatering device approved by the Department that will permit the draining of the water from the pond. The dewatering device may not be located at a lower elevation than the maximum elevation of the sedimentation storage volume.

(e) Ponds shall be designed, constructed and maintained to prevent short circuiting to the maximum extent possible.

(f) The design, construction and maintenance of a sediment pond under this section does not relieve the person or municipality that operates a facility of the responsibility for complying with the applicable treatment requirements and effluent limitations established under § 289.251.

(g) At a minimum, sedimentation ponds shall be capable of managing the runoff resulting from a 25-year, 24-hour precipitation event.

Cross References

This section cited in 25 Pa. Code § 289.151 (relating to soil erosion and sedimentation control plan).

§ 289.254. Discharge structures.

Discharges from dams, ponds, embankments, impoundments and diversions shall be controlled by energy dissipaters, riprap channels or other devices when necessary to reduce erosion, to prevent deepening or enlargement of stream channels and to minimize disturbance to surface and groundwater. Discharge structures shall be designed and maintained according to standard engineering design procedures, and shall meet the requirements of Chapter 105 (relating to dam safety and waterway management).

Cross References

This section cited in 25 Pa. Code § 289.151 (relating to soil erosion and sedimentation control plan).

§ 289.255. Water supply replacement.

(a) A person or municipality operating a residual waste disposal impoundment which adversely affects a water supply by degradation, pollution or other means shall restore the affected supply at no additional cost to the owner or replace the affected water supply with an alternate source that is of like quantity and quality to the original supply at no additional cost to the owner.

(b) A temporary water supply shall be provided as soon as practicable but not later than 48 hours after one of the following:

(1) Receipt of information showing that the operator is responsible for adversely affecting the water supply.

(2) Receipt of notice from the Department that the operator is responsible for adversely affecting the water supply.

(c) A permanent water supply shall be provided as soon as practicable but not later than 90 days after one of the following:

- (1) Receipt of information showing that the operator is responsible for adversely affecting the water supply.
- (2) Receipt of notice from the Department that the operator is responsible for adversely affecting the water supply.
- (d) Permanent water supplies include development of a new well with a distribution system, interconnection with a public water supply or extension of a private water supply, but do not include provision of bottled water or a water tank supplied by a bulk water hauling system, which are temporary water supplies.

Source

The provisions of this § 289.255 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (266335) to (266336).

Cross References

This section cited in 25 Pa. Code § 289.432 (relating to general limitations); 25 Pa. Code § 289.532 (relating to general limitations); and 25 Pa. Code § 299.144 (relating to operating requirements).

WATER QUALITY MONITORING

§ 289.261. General requirements.

- (a) A person or municipality that operates a residual waste disposal impoundment shall install, operate and maintain a monitoring system that can detect the entry of solid waste, solid waste constituents, leachate, contaminants, degradation or constituents of decomposition into the ground or surface water. The monitoring system shall comply with this section and §§ 289.262—289.268.
- (b) A person may not construct, install or use a monitoring system for a residual waste disposal impoundment until that system has first been approved by the Department in writing.

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.123 (relating to groundwater quality description); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.262. Number, location and depth of monitoring points.

- (a) The water quality monitoring system shall accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area. The system shall consist, at a minimum, of the following:
 - (1) At least one monitoring well at a point hydraulically upgradient from the disposal area in the direction of increasing static head that is capable of providing representative data of groundwater not affected by the facility, except when the facility occupies the most upgradient position in the flow system. In

that case, sufficient downgradient monitoring wells shall be placed to determine the extent of adverse effects on groundwater from the facility.

(2) At least three monitoring wells at points hydraulically downgradient in the direction of decreasing static head from the area in which solid waste has been or will be disposed. In addition to the downgradient wells, the Department may allow one or more springs for monitoring points if the springs are hydraulically downgradient from the area in which solid waste has been or will be disposed, if the springs are developed and protected in a manner approved by the Department and if the springs otherwise meet the requirements of this subchapter.

(3) A leachate detection system for the disposal area, when required for the facility.

(4) A leachate collection system for the disposal areas, when required for the facility.

(5) Surface water monitoring points approved by the Department.

(b) The upgradient and downgradient monitoring wells shall be:

(1) Sufficient in number, location and depth to be representative of water quality.

(2) Located so that they do not interfere with routine facility operations.

(3) Located within 200 feet of the permitted disposal area, except as necessary to comply with subsection (c), and located at the points of compliance.

(c) In addition to the requirements of subsection (b), upgradient monitoring wells shall be located so that they will not be affected by adverse effects on groundwater from the disposal area.

(d) In addition to the requirements of subsection (b), downgradient monitoring wells shall be located so that they will provide early detection of adverse effects on groundwater from the disposal area.

(e) Wells drilled under this section shall be drilled by drillers licensed under the Water Well Drillers License Act (32 P. S. §§ 645.1—645.13).

(f) The well materials shall be decontaminated prior to installation.

Source

The provisions of this § 289.262 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (266336) and (226733).

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.123 (relating to groundwater quality description); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); 25 Pa. Code § 289.266 (relating to groundwater assessment plan); 25 Pa. Code § 289.303 (relating to annual operation report); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.263. Standards for wells and casing of wells.

(a) Monitoring wells shall be cased as follows:

- (1) The casing shall maintain the integrity of the monitoring well borehole and shall be constructed of material that will not react with the groundwater being monitored.
 - (2) The minimum casing diameter shall be 4 inches unless otherwise approved by the Department in writing.
 - (3) The well shall be constructed with a screen that meets the following requirements:
 - (i) The screen shall be factory-made.
 - (ii) The screen may not react with the groundwater being monitored.
 - (iii) The screen shall maximize open area to minimize entrance velocities and allow rapid sample recovery.
 - (4) The well shall be filter-packed with chemically inert clean quartz sand, silica or glass beads. The material shall be well rounded and dimensionally stable.
 - (5) The casing shall be clearly visible and protrude at least 1 foot above the ground, unless the Department has approved flush mount wells.
 - (6) The annular space above the sampling depth shall be sealed to prevent contamination of samples and the groundwater.
 - (7) The casing shall be designed and constructed in a manner that prevents cross contamination between surface water and groundwater.
 - (8) Alternative casing designs for wells in stable formations may be approved by the Department.
- (b) Monitoring well casings shall be enclosed in a protective casing that shall:
- (1) Be of sufficient strength to protect the well from damage by heavy equipment and vandalism.
 - (2) Be installed for at least the upper 10 feet of the monitoring well, as measured from the well cap, with a maximum stick up of 3 feet, unless otherwise approved by the Department in writing.
 - (3) Be grouted and placed with a concrete collar at least 3 feet deep to hold it firmly in position.
 - (4) Be numbered for identification with a label capable of withstanding field conditions and painted in a highly visible color.
 - (5) Protrude above the monitoring well casing.
 - (6) Have a locked cap.
 - (7) Be made of steel or another material of equivalent strength.

Source

The provisions of this § 289.263 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226733) to (226734).

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.123 (relating to groundwater quality description); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); 25 Pa. Code § 289.266 (relating to groundwater assessment plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.264. Sampling and analysis.

(a) A person or municipality operating a residual waste disposal impoundment shall conduct sampling and analysis from each monitoring point for the following parameters at the following frequencies:

(1) Quarterly, for ammonia-nitrogen, bicarbonate, calcium, chloride, fluoride, chemical oxygen demand, nitrate-nitrogen, pH, specific conductance, sulfate, total alkalinity, total dissolved solids, total organic carbon, turbidity, iron, manganese, magnesium, potassium and sodium.

(2) Quarterly, for groundwater elevations in monitoring wells recorded as a distance from the elevation at the well head referenced to mean sea level based on United States Geological Survey datum.

(3) Annually, for total and dissolved concentrations for each of the following: barium, cadmium, chromium, copper, lead, mercury, selenium, silver and zinc.

(4) Annually, for the following volatile organic compounds: Tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, 1,2-dibromoethane, 1,1-dichloroethene, 1,2-dichloroethene (cis and trans isomers), vinyl chloride, 1,1-dichloroethane, 1,2-dichloroethane, methylene chloride, toluene, ethylbenzene, benzene and xylene.

(5) Other constituents contained in the waste that may leach into the environment, as determined under § 287.132 (relating to chemical analysis of waste). The quarterly analysis shall be adjusted to reflect parameters detected from leachate analysis under § 289.456 or § 289.556 (relating to leachate analysis; and sludge handling).

(b) The Department may modify the requirements of this section, based on the waste analysis conducted under § 287.132 for captive residual waste disposal impoundments that receive only one type of waste, for parameters and monitoring frequencies that are not necessary to determine the actual or potential effect of the facility on surface or groundwater. This subsection does not apply to subsection (a)(1).

(c) For facilities permitted before July 4, 1992, the parameters described in this section shall be sampled and analyzed beginning October 4, 1992.

Source

The provisions of this § 289.264 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226735).

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); 25 Pa. Code § 289.435 (relating to leachate detection zone); 25 Pa. Code § 289.534 (relating to leachate detection zone); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.265. Reporting of analysis results and data evaluation.

Analyses of data required by this subchapter shall be submitted, on a form provided by the Department, within 60 days of sampling or 15 days after completion of analyses, whichever is sooner, unless the Department approves another time period in the permit. The data analysis shall be accompanied by a data evaluation as required by § 289.152(b)(4) (relating to water quality monitoring plan).

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.266. Groundwater assessment plan.

(a) *Requirement.* A person or municipality operating a residual waste disposal impoundment shall prepare and submit to the Department a groundwater assessment plan within 60 days after one of the following occurs:

- (1) Data obtained from monitoring by the Department or the operator indicates groundwater degradation at any monitoring point.
- (2) Laboratory analysis of one or more public or private water supplies indicates groundwater degradation that could reasonably be attributed to the facility.

(b) *Exception.* The operator is not required to conduct an assessment under this section if one of the following applies:

- (1) Within 10 working days after receipt of sample results indicating groundwater degradation, the operator resamples the affected wells and analysis from resampling shows to the Department's satisfaction that groundwater degradation has not occurred.
- (2) Within 20 working days after receipt of sample results indicating groundwater degradation, the operator demonstrates that the degradation was caused entirely by earthmoving and other activities related to facility construction, or by seasonal variations.

(c) *Assessment plan.* The groundwater assessment plan shall specify the manner in which the operator will determine the existence, quality, quantity, areal extent and depth of groundwater degradation and the rate and direction of migration of contaminants in the groundwater. A groundwater assessment plan shall be prepared by an expert in the field of hydrogeology. The plan shall contain, at a minimum, the following information:

- (1) The number, location, size, casing type and depth of wells, lysimeters, borings, pits, piezometers and other assessment structures or devices to be used. If the operator establishes compliance points as part of the assessment, the points shall be wells constructed in accordance with §§ 289.262 and 289.263 (relating to number, location and depth of monitoring points; and standards for wells and casing of wells).
 - (2) Sampling and analytical methods for the parameters to be evaluated.
 - (3) Evaluation procedures, including the use of previously gathered groundwater quality information, to determine the concentration, rate and extent of groundwater degradation from the facility.
 - (4) An implementation schedule.
 - (5) Identification of the abatement standard that will be met.
- (d) The groundwater assessment plan shall be implemented upon approval by the Department in accordance with the approved implementation schedule, and shall be completed in a reasonable time not to exceed 6 months unless otherwise approved by the Department. If the Department determines that the proposed plan is inadequate, it may modify the plan and approve the plan as modified. The operator shall notify, in writing, each owner of a private or public water supply that is located within 1/2 mile downgradient of the disposal area that an assessment has been initiated.
- (e) Within 45 days after the completion of the groundwater assessment plan, the operator shall submit a report containing the new data collected, analysis of the data and recommendations on the necessity for abatement.
- (f) If the Department determines after review of the groundwater assessment report that implementation of an abatement plan is not required by § 289.267 (relating to abatement plan), the operator shall submit a permit modification application under § 287.222 (relating to permit modification) for necessary changes to the groundwater monitoring plan. The operator shall implement the modifications within 30 days of the Department's approval.
- (g) This section does not prevent the Department from requiring, or the operator from conducting, groundwater abatement or water supply replacement concurrently with or prior to implementation of the assessment.

Source

The provisions of this § 289.266 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226736) to (226737).

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 287.342 (relating to final closure certification); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); 25 Pa. Code § 289.267 (relating to abatement plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.267. Abatement plan.

(a) The operator of a residual waste disposal impoundment shall prepare and submit to the Department an abatement plan when one of the following occurs:

(1) The groundwater assessment plan prepared and implemented under § 289.266 (relating to groundwater assessment plan) shows the presence of groundwater degradation for one or more contaminants at one or more monitoring points and the analysis under § 289.266(c) indicates that an abatement standard under subsection (c) will not be met.

(2) Monitoring by the Department or operator shows the presence of an abatement standard exceedance for one or more contaminants from one or more compliance points as indicated in subsection (c) even if a groundwater assessment plan has not been completed. The operator is not required to implement an abatement plan under this paragraph if the following apply:

(i) Within 10 days after receipt of sample results showing an exceedance of an abatement standard at a point of compliance described in subsection (c), the operator resamples the affected wells.

(ii) Analysis from resampling shows to the Department's satisfaction that an exceedance of an abatement standard has not occurred.

(b) An abatement plan shall be prepared by an expert hydrogeologist and submitted to the Department. The plan shall contain, at a minimum, the following information:

(1) The specific methods or techniques to be used to abate groundwater degradation from the facility.

(2) The specific methods or techniques to be used to prevent further groundwater degradation from the facility.

(3) A schedule for implementation.

(c) If abatement is required in accordance with subsection (a), the operator shall demonstrate compliance with one or more of the following standards at the identified compliance points:

(1) For constituents for which a Statewide health standards exists, the Statewide health standard for that constituent at and beyond 150 meters of the perimeter of the permitted disposal area or at and beyond the property boundary, whichever is closer.

(2) The background standard for constituents at and beyond 150 meters of the perimeter of the permitted disposal area or at and beyond the property boundary, whichever is closer.

(3) For constituents for which no primary MCL under the Federal and State Safe Drinking Water Acts (42 U.S.C.A. §§ 300f—300j-18 and 35 P. S. §§ 721.1—721.17) exist, the risk-based standard at and beyond the property boundary, whichever is closer, if the following conditions are met:

(i) The risk assessment used to establish the standard assumes that human receptors exist at the property boundary.

(ii) The level is derived in a manner consistent with Department guidelines for assessment the health risks of environmental pollutants.

(iii) The level is based on scientifically valid studies conducted in accordance with good laboratory practice standards (40 CFR Part 792 (relating to good laboratory practice standards)) promulgated under the Toxic Substances Control Act (15 U.S.C.A. §§ 2601—2692), or other scientifically valid studies approved by the Department.

(iv) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level of 1×10^{-5} at the property boundary.

(d) For measuring compliance with secondary contaminants under subsection (c)(1) or (3), the Department may approve a compliance point beyond 150 meters on land owned by the owner or the disposal area.

(e) The abatement plan shall be completed and submitted to the Department for approval within 90 days of the time the obligation arises under this section unless the date is otherwise modified, in writing, by the Department.

(f) If the Department determines that the proposed plan is inadequate, the Department may modify the plan and approve the plan as modified or require the submission of an approval modification.

(g) The abatement plan shall be implemented within 60 days of approval by the Department in accordance with the approved implementation schedule.

(h) If, after plan approval or implementation, the Department finds that the plan is incapable of achieving the groundwater protection contemplated in the approval, the Department may do one or more of the following:

(1) Issue an order requiring the operator to submit proposed modifications to the abatement plan.

(2) Issue an order requiring the operator to implement the abatement plan as modified by the Department.

(3) Issue any order as the Department deems necessary to aid in the enforcement of the act.

Source

The provisions of this § 289.267 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226737) to (226740).

Cross References

This section cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); 25 Pa. Code § 289.266 (relating to groundwater assessment plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.268. Recordkeeping.

A person or municipality subject to the requirements of this subchapter shall retain records of analyses and evaluations of monitoring data and groundwater

elevations required under this subchapter until release of the bonds, and shall make the records available to the Department upon request.

Cross References

This section is cited in 25 Pa. Code § 287.102 (relating to permit-by-rule); 25 Pa. Code § 289.152 (relating to water quality monitoring plan); 25 Pa. Code § 289.261 (relating to general requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

IMPOUNDMENTS

§ 289.271. General requirements.

(a) Impoundments shall be designed, constructed, operated and maintained in accordance with the following:

(1) An impoundment shall have sufficient freeboard to prevent overtopping, including overtopping caused by the 24-hour precipitation event in inches to be expected once in 25 years. The freeboard may not be less than 2 feet.

(2) The dike shall have sufficient structural integrity to prevent failure. The liner system of the impoundment may not be considered in determining the structural integrity of the dike.

(3) The dike shall be capable of withstanding anticipated static and dynamic loadings with a minimum safety factor for the most critical failure surface of 1.5 for static loading and 1.2 for dynamic loading.

(4) An impoundment shall be equipped so that flow of residual waste into the impoundment can be shut off immediately.

(5) Dikes and berms shall be free of burrowing mammals and plants with root systems capable of displacing earthen materials upon which the structural integrity of the dikes or berms is dependent.

(6) An impoundment shall be surrounded by structures sufficient to prevent surface runoff from a 25-year, 24-hour precipitation event from entering the impoundment.

(7) Odors and the dispersal of residual waste or waste constituents by wind and water erosion shall be prevented.

(b) Residual waste may not be disposed in tanks.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.115 (relating to filing by permitted facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.161 (relating to impoundment plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.272. Inside slopes.

Except for impoundments with concrete walls that are approved in the permit, the inside slopes of an impoundment shall be designed, constructed, operated and maintained as follows:

- (1) An inside slope may not exceed a grade of 25%, except that the Department may approve slopes up to 33% based on a stability analysis.
- (2) An inside slope shall be designed and constructed with sufficient protective cover to prevent wind and water erosion, and to preserve the structural integrity of the dike.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.115 (relating to filing by permitted facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.161 (relating to impoundment plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.273. Outside slopes and terraces.

The outside slopes and terraces of an impoundment shall be designed, constructed, operated and maintained as follows:

- (1) The outside slopes of the dike may not exceed 25% unless the following requirements are met:
 - (i) A horizontal terrace with a minimum width of 10 feet is constructed at each 20-foot vertical rise of the slope, or the Department approves in the permit a terrace with different dimensions.
 - (ii) Surface water on the terrace is collected and discharged so that it does not erode or otherwise adversely affect the stability of the dike.
 - (iii) The final slope does not exceed 50%.
- (2) The outside slope and terraces of the dike shall be stabilized with permanent vegetation, rock rip-rap or other nonerodable material to prevent wind and water erosion and preserve the structural integrity of the dike.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.115 (relating to filing by permitted facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.161 (relating to impoundment plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.274. Failure.

- (a) If an impoundment fails, the operator shall immediately comply with the following:
 - (1) Stop adding waste to the impoundment.
 - (2) Contain discharges that have occurred or are occurring.

(3) Notify the Department of the failure of the impoundment and the measures taken to remedy the failure.

(b) An impoundment that has been removed from service due to failure may not be restored to service unless the impoundment has been repaired, the repair has been certified to the Department in writing by a registered professional engineer and the Department has approved in writing the restoration of the impoundment to service.

Cross References

This section cited in 25 Pa. Code § 289.161 (relating to impoundment plan); and 25 Pa. Code § 299.144 (relating to operating requirements).

MINERAL AND GAS

§ 289.281. Mineral resources.

(a) The operator shall isolate coal seams, coal outcrops and coal refuse from combustible waste deposits in a manner that prevents the combustion of the waste and that prevents damage to the liner system.

(b) Mine openings within the site shall be sealed in a manner approved by the Department.

(c) The operator shall implement a plan for controlling potential for damage from subsidence that was submitted and approved under § 289.127 (relating to mineral deposits information).

Source

The provisions of this § 289.281 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226742).

§ 289.282. Gas control and monitoring.

(a) If the waste disposed at the facility generates, or is likely to generate gas, the operator shall establish and implement a gas control and monitoring program plan under § 289.162 (relating to gas monitoring and control plan).

(b) The operator shall control decomposition gases generated within the site to prevent danger to workers, structures and to occupants of adjacent property.

(c) Gas venting and monitoring systems shall be installed during construction at facilities.

(d) Gas monitoring shall be conducted in accordance with the approved plan. Gas monitoring shall be conducted quarterly by the operator during active operations and after closure until the Department determines in writing that gas monitoring is not necessary to ensure compliance with the act, the environmental protection acts, regulations thereunder and the terms and conditions of the permit.

(e) Combustible gas levels may not equal or exceed:

(1) Twenty-five percent of the lower explosive limit in a structure within the site.

- (2) The lower explosive limit at the boundaries of the site.
- (f) The operator shall conduct active forced ventilation of the facility, using vents located at least 3 feet above the disposal impoundment surface, if:
 - (1) Passive venting has caused or may cause violations of subsection (e).
 - (2) Induced positive gas flows will prevent or control offsite odors.

Source

The provisions of this § 289.282 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226742) and (255111).

Cross References

This section cited in 25 Pa. Code § 289.162 (relating to gas monitoring and control plan).

§ 289.283. Gas recovery.

- (a) Gas recovery shall be conducted as follows:
 - (1) So that it does not interfere or conflict with activities on the site or required control measures.
 - (2) Without creating or causing damage to persons or property.
 - (3) According to the plan approved by the Department under § 289.162 (relating to gas monitoring and control plan).
- (b) The operator shall, on an annual basis, physically and chemically characterize recovered gas, condensates or other residues which are generated. Users of the recovered gas shall be informed of the chemical quality of the gas. If the gas, condensates or other residues are hazardous, they shall be managed under Article VII (relating to hazardous waste management).

Cross References

This section cited in 25 Pa. Code § 289.162 (relating to gas monitoring and control plan).

EMERGENCY PROCEDURES

§ 289.291. Hazard prevention.

Residual waste disposal impoundments shall be designed, constructed, maintained and operated to prevent and minimize the potential for fire, explosion or release of solid waste constituents to the air, water or soil of this Commonwealth that could threaten public health or safety, public welfare or the environment.

Source

The provisions of this § 289.291 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (255111).

Cross References

This section cited in 25 Pa. Code § 289.163 (relating to contingency plan).

§ 289.292. Emergency equipment.

(a) Except as provided in subsection (b), the operator shall have available in proper working condition the following equipment at the immediate operating area of the facility:

(1) An internal communications or alarm system capable of providing immediate emergency instruction by voice or signal to facility personnel.

(2) A communications system capable of summoning emergency assistance from local police, fire departments, emergency medical services and from State and local emergency response agencies.

(3) Portable fire extinguishers, fire control equipment, spill control equipment, self-contained breathing apparatus and decontamination equipment. For fire control equipment requiring water, the facility shall have a water supply of adequate quantity and pressure to supply the equipment.

(4) Portable gas explosimeters and gas monitoring equipment.

(b) The Department may waive or modify one or more of the requirements of subsection (a) in the permit if the operator demonstrates to the Department's satisfaction that the requirements are not necessary to protect public health and safety, public welfare and the environment.

(c) Equipment and material required by this section shall be tested and maintained in a manner that is operable in time of emergency.

(d) Adequate space shall be maintained to allow the unobstructed movement of emergency personnel and equipment to any operating area of the facility.

Source

The provisions of this § 289.292 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (255112).

Cross References

This section cited in 25 Pa. Code § 289.163 (relating to contingency plan).

§ 289.293. Implementation of contingency plan.

(a) The operator of the facility shall immediately implement the applicable provisions of the approved contingency plan if there is an emergency. For the purposes of this section, the term "emergency" includes a fire, spill or other event that threatens public health and safety, public welfare or the environment and personal injury.

(b) During an emergency, the operator shall:

(1) Assess actual or potential hazards to public health and safety, public welfare and the environment that are occurring or may occur.

(2) Ensure that fires, spills or other hazards do not occur, reoccur or spread to other solid waste at the facility.

(3) Immediately telephone the Department and county emergency management agency and report the following information:

- (i) The name of the person reporting the incident and telephone number where that person may be reached.
 - (ii) The name, address and permit number of the facility.
 - (iii) The date, time and location of the emergency.
 - (iv) A brief description of the nature of the emergency, the type and quantity of the solid waste involved, and what dangers to public health and safety, public welfare and the environment exist or may occur.
 - (v) The nature of injuries.
 - (vi) The parts of the contingency plan being implemented to alleviate the emergency.
- (c) After an emergency, the operator of the facility shall meet the following requirements:
- (1) Clean up the area affected by the emergency and treat, store or dispose of recovered solid waste, contaminated soil, contaminated water or other material in a manner approved by the Department.
 - (2) Prevent disposal, processing or storage of solid waste in the area affected by the emergency until the operator has cleaned up the area, and the Department has inspected and approved the cleanup.

Cross References

This section cited in 25 Pa. Code § 289.163 (relating to contingency plan).

RECORDKEEPING AND REPORTING

§ 289.301. Daily operational records.

- (a) The operator of a facility shall make and maintain an operational record for each day that residual waste is received, processed or disposed, and each day that construction, monitoring or postclosure activity occurs. The operator of a captive residual waste facility may maintain a monthly operational record instead of a daily operational record for each month in which residual waste is received, processed or disposed, and each month that construction, monitoring or postclosure activity occurs. The monthly operational record shall contain the information required in subsection (b)(1)—(6).
- (b) The operational record shall include the following:
- (1) The type and weight or volume of the solid waste received.
 - (2) A description of waste handling problems or emergency disposal activities.
 - (3) A record of deviations from the approved design or operational plans.
 - (4) A record of activities for which entries are needed to comply with the annual operation report required in § 289.303 (relating to annual operation report).
 - (5) A record of actions taken to correct violations of the act, the environmental protection acts and this title.

(6) A record of rejected waste loads, the reason for rejecting the loads, and for noncaptive facilities, the name of the transporter and the name, mailing address, county and state of the generator shall also be included.

(7) For noncaptive facilities, the following:

- (i) The transporters of the waste.
- (ii) The name, mailing address, county and state of each generator of residual waste.

(iii) An analysis of the quality and quantity of leachate flowing from the impoundment into the leachate storage and treatment systems.

(iv) A record of each incident in which radioactive material is detected in waste loads. The record shall include:

- (A) The date, time and location of the occurrence.
- (B) A brief narrative description of the occurrence.
- (C) Specific information on the origin of the material, if known.
- (D) A description of the radioactive material involved, if known.
- (E) The name, address and telephone numbers of the supplier or handler of the radioactive material and the name of the driver.
- (F) The final disposition of the material.

(v) A record of each vehicle, other than a combination that exceeds 73,280 pounds gross weight and of each combination that exceeds 80,000 pounds gross weight.

(A) The record shall include:

- (I) The gross weight of the vehicle when weighed at the facility.
- (II) The registration plate number and home, or base state registration of the vehicle.
- (III) The name, business address and telephone number of the owner of the vehicle.
- (IV) The date that the weight scale was last tested in accordance with 3 Pa.C.S. Chapter 41 (relating to the Consolidated Weights and Measures Act).

(V) The date and time when the vehicle was weighed at the facility.

(B) For purposes of this subparagraph, the following terms shall have the following meanings:

(I) *Combination*—Two or more vehicles physically interconnected in tandem. An example of a combination is a truck trailer attached to a semitrailer.

(II) *Gross weight*—The combined weight of a vehicle or combination of vehicles and its load excluding the driver's weight.

(III) *Registration*—The authority for a vehicle to operate on a highway as evidenced by the issuance of an identifying card and plate or plates.

(c) The operator shall maintain accurate operational records sufficient to determine whether residual waste is being stored under Chapter 299, Subchapter A (relating to standards for storage of residual waste).

(d) Daily and monthly operational records shall be retained for the life of the facility bond, or longer if determined by the Department to be necessary to meet the standards of the environmental protection acts. These records shall be made available to the Department upon request.

Authority

The provisions of this § 289.301 amended under the Solid Waste Management Act (35 P. S. §§ 6108.101—6018.1003); the Municipal Waste Planning, Recycling and Waste Reduction Act (53 P. S. §§ 4000.101—4000.1904); The Clean Streams Law (35 P. S. §§ 691.1—691.1001); and the Infectious and Chemotherapeutic Waste Law (35 P. S. §§ 6019.1—6019.6).

Source

The provisions of this § 289.301 amended November 28, 1997, effective November 29, 1997, 27 Pa.B. 6190; amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (239027) to (239028).

§ 289.302. [Reserved].

Source

The provisions of this § 289.302 reserved January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (239028).

§ 289.303. Annual operation report.

(a) An operator shall submit to the Department an annual operation report on or before June 30 of each year.

(b) The annual operation report, which shall be submitted on a form supplied by the Department, shall include the following information:

(1) The weight or volume of each type of solid waste received. For non-captive facilities, the report shall include the average daily volume totals computed in accordance with § 289.229 (relating to daily volume).

(2) A volumetric calculation of capacity used in the previous year and remaining permitted capacity.

(3) A description of the acreage used for disposal, the acreage seeded, the acreage that has been vegetated, the acreage where vegetation is permanently established and a narrative of the operator's progress in implementing its closure plan.

(4) A current certificate of insurance as specified in § 287.373(a) (relating to proof of insurance coverage), evidencing continuous coverage for comprehensive general liability insurance as required by § 287.371 (relating to insurance requirement).

(5) Changes in the previous year concerning the information required by §§ 287.124 and 287.125 (relating to identification of interests; and compliance information). The report shall state if no changes have occurred.

(6) A change in the ownership of the land upon which the facility is located or a change in a lease agreement for the use of the land that may affect or alter the operator's rights upon the land.

(7) A written update of the total bond liability for the facility under § 287.331 (relating to bond amount determination). If additional bond is determined to be necessary, it shall be submitted to the Department within 90 days after the annual report is due.

(8) Certification that the operator has received the analysis or certification required by § 287.54 (relating to chemical analysis of waste) for each type of residual waste received at the facility, and that the residual waste that is received at the facility meets the conditions in the facility's permit.

(9) For noncaptive facilities, the type and weight or volume of solid waste received from each generator, including the name, mailing address, county and state of each generator.

(10) A record of detected radioactive materials.

(c) The annual operation report shall be accompanied by a nonrefundable annual permit administration fee of \$4,600 in the form of a check payable to the "Commonwealth of Pennsylvania."

(d) The report shall include an evaluation of whether the monitoring plan implemented under this subchapter needs to be revised to comply with § 289.262 (relating to number, location and depth of monitoring points) because of changes in groundwater elevation or other reasons. If this evaluation determines that changes in the approved groundwater monitoring plan are necessary, the operator shall immediately notify the Department and submit an application for permit modification under § 287.222 (relating to permit modification) for necessary changes in the monitoring plan.

Authority

The provisions of this § 289.303 issued under the Solid Waste Management Act (35 P. S. §§ 6018.101—6018.1003); the Pennsylvania Used Oil Recycling Act (58 P. S. §§ 471—480); The Clean Streams Law (35 P. S. §§ 691.1—691.1001); sections 1905-A, 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-5, 510-17 and 510-20); and the Municipal Waste Planning, Recycling and Waste Reduction Act (53 P. S. §§ 4000.101—4000.1904); amended under sections 5(b) and 402 of The Clean Streams Law (35 P. S. §§ 691.5(b) and 691.402); section 302 of the Municipal Waste Planning, Recycling and Waste Reduction Act (53 P. S. § 4000.302); section 408(e) of the Pennsylvania Used Oil Recycling Act (58 P. S. § 408(e)); sections 1905-A, 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-5, 510-17 and 510-20); section 105(4) of the Waste Tire Recycling Act (35 P. S. § 6029.105(4)); sections 301 and 302 of the Radiation Protection Act (35 P. S. §§ 7110.301 and 7110.302); the Infectious and Chemotherapeutic Waste Law (35 P. S. §§ 6019.1—6019.6); and the Vehicle Code, 75 Pa.C.S. § 4909(e).

Source

The provisions of this § 289.303 amended November 28, 1997, effective November 29, 1997, 27 Pa.B. 6190; amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (239028) to (239029).

Cross References

This section cited in 25 Pa. Code § 289.301 (relating to daily operational records).

CLOSURE PROVISIONS**§ 289.311. Postclosure land use.**

The operator shall implement the postclosure land use plan approved by the Department under § 289.171 (relating to postclosure land use plan).

§ 289.312. Closure.

(a) The operator shall implement the closure plan approved by the Department under § 289.172 (relating to closure plan).

(b) At least 180 days before implementation of a closure plan, the operator shall review its approved closure plan to determine whether the plan requires modification, and shall submit proposed changes to the Department for approval under § 287.222 (relating to permit modification).

(c) If groundwater degradation exists at closure or occurs after closure, a person shall meet one of the following:

(1) Continue to implement an approved abatement plan.

(2) Submit an application for a closure plan modification in accordance with the procedures for a major permit modification. The operator shall select one or more remediation standards that will be met in accordance with the final closure certification requirements in § 287.342 (relating to final closure certification).

(d) An application for a closure plan modification shall include the following:

(1) Technical information and supporting documentation identifying the remediation activities that will be conducted to meet and maintain the remediation standards.

(2) If a remedy relies on access to or use of properties owned by third parties, for remediation or monitoring, documentation of cooperation or agreement.

Source

The provisions of this § 289.312 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (239030).

Cross References

This section cited in 25 Pa. Code § 299.144 (relating to operating requirements).

**Subchapter D. ADDITIONAL REQUIREMENTS FOR CLASS I
RESIDUAL WASTE DISPOSAL IMPOUNDMENTS****SCOPE**

Sec.
289.401. Scope.

289-54

(273692) No. 316 Mar. 01

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ADDITIONAL APPLICATION REQUIREMENTS

- 289.411. Additional provisions.
- 289.412. Liner system and leachate control plan.
- 289.413. Leachate treatment plan.
- 289.414. Modification of leachate treatment plan.
- 289.415. Waste classification plan.

**ADDITIONAL OPERATING REQUIREMENTS—
GENERAL PROVISIONS**

- 289.421. Basic limitations.
- 289.422. Areas where Class I residual waste disposal impoundments are prohibited.
- 289.423. Minimum requirements for acceptable waste.

**ADDITIONAL OPERATING REQUIREMENTS—
LINER SYSTEM**

- 289.431. Scope and requirements.
- 289.432. General limitations.
- 289.433. Subbase.
- 289.434. Secondary liner.
- 289.435. Leachate detection zone.
- 289.436. Primary liner.
- 289.437. Protective cover.
- 289.438. Leachate collection system within protective cover.
- 289.439. Liner system; initial placement of solid waste.

**ADDITIONAL OPERATING REQUIREMENTS—
LEACHATE TREATMENT**

- 289.451. Scope.
- 289.452. Basic treatment methods.
- 289.453. Leachate transportation.
- 289.454. Leachate recirculation.
- 289.455. Leachate collection and storage.
- 289.456. Leachate analysis and sludge handling.
- 289.457. Departmental notice and remedial action.

SCOPE**§ 289.401. Scope.**

This subchapter sets forth additional application and operating requirements for Class I residual waste disposal impoundments.

ADDITIONAL APPLICATION REQUIREMENTS**§ 289.411. Additional provisions.**

In addition to the application requirements in Subchapter B (relating to application requirements), an application for a permit to operate a Class I residual waste disposal impoundment shall comply with §§ 289.412—289.414 (relating to liner system and leachate control plan; leachate treatment plan; and modification of leachate treatment plan). These requirements shall be part of the Phase II permit application.

§ 289.412. Liner system and leachate control plan.

(a) The application shall contain plans, drawings, cross sections and specifications for a liner system to demonstrate compliance with §§ 289.431—289.439 (relating to additional operating requirements—liner system), including the following:

(1) The design of the liner system, including thickness and characteristics of the subbase, the thickness and characteristics of the leachate detection zone, the design for the leachate monitoring system in the leachate detection zone, the nature and thickness of the liner material, the thickness and characteristics of the protective cover and leachate collection zone, and the design for the leachate collection system in the collection zone.

(2) A plan for installing the liner system.

(b) The application shall include a quality assurance and quality control plan for the construction and installation of the liner system. The plan shall include, at a minimum, the following:

(1) A description of the testing procedures and construction methods proposed to be implemented during construction of the liner system.

(2) A description of the manner in which the protective cover and liner system will be maintained and protected in unfilled portions of the disposal area prior to and during initial disposal of solid waste.

(3) A description of the manner in which the protective cover and liner system will be protected from weather prior to and during initial disposal of solid waste.

(4) A description of the qualifications of the quality assurance and quality control personnel, presented in terms of experience and training necessary to implement the plan.

(5) A sampling plan for every component of the liner system, including sample size, methods for determining sample locations, sampling frequency, acceptance and rejection criteria and methods for ensuring that corrective measures are implemented as soon as possible.

(6) A plan for documenting compliance with the quality assurance and quality control plan.

(c) The application shall demonstrate that leachate will not adversely affect the physical or chemical characteristics of the proposed liner system, or inhibit the liner's ability to restrict the flow of solid waste, solid waste constituents or leachate, based on EPA or ASTM guidelines approved by the Department.

(d) The application shall include a complete description of the physical, chemical, mechanical and thermal properties for the proposed primary and secondary liners, based on ASTM methods when appropriate. Except to the extent that the Department waives, in writing, one or more of the following for nonsynthetic secondary liners, these properties shall include, at a minimum:

- (1) Thickness.
- (2) Tensile strength at yield.
- (3) Elongation at yield.
- (4) Elongation at break.
- (5) Density.
- (6) Tear resistance.
- (7) Carbon black content.
- (8) Puncture resistance.
- (9) Seam strength—% of liner strength.
- (10) Ultraviolet light resistance.
- (11) Carbon black dispersion.
- (12) Permeability.
- (13) Liner friction.
- (14) Stress crack resistance.
- (15) Oxidative induction time.
- (16) Chemical compatibility.
- (17) Percent recycled materials.

Source

The provisions of this § 289.412 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226750) to (226751).

Cross References

This section cited in 25 Pa. Code § 289.411 (relating to additional provisions); 25 Pa. Code § 289.434 (relating to secondary liner); and 25 Pa. Code § 299.143 (relating to application requirements).

§ 289.413. Leachate treatment plan.

(a) An application shall contain a plan for leachate treatment from the proposed facility in a manner that complies with §§ 289.451—289.457 (relating to additional operating requirements—leachate treatment). The plan shall include the following:

(1) An estimate of the quality and quantity of leachate to be produced annually by the facility, based on the water balance method set forth in “Use of Water Balance Method for Predicting Leachate Generation from Solid Waste Disposal Sites” EPA SW-168 (1975), or another method of accurately projecting leachate flows that is approved by the Department, in writing. The estimate shall include the 30-day leachate volume and average flow rate for each month of the year. A separate estimate shall be submitted for anticipated leachate generation at the end of 5-year increments of operation for 20 years, or until closure, whichever date is earlier. For existing facilities, current leachate generation shall be included with this separate estimate.

(2) Plans, designs and cross sections for the proposed collection and handling system.

(3) Plans, designs and cross sections for onsite leachate treatment or disposal systems, including tanks and impoundments that are proposed to be used or constructed for storage, pretreatment or treatment of leachate from the facility.

(4) If an onsite treatment system already in operation is proposed to treat leachate from the facility, a description of the system, including its NPDES permit number, its capability to treat leachate from the facility and its compliance status under The Clean Streams Law and regulations thereunder.

(b) If interim vehicular transportation to an offsite treatment facility is proposed, the applicant shall:

(1) Provide a copy of a signed contractual agreement with the operator of a primary offsite facility that provides for treatment of leachate at the facility, and which covers the period of time that offsite treatment will be provided; or provide a signed letter of intent from the operator of the offsite facility to enter a contractual agreement for leachate treatment if the permit application is approved by the Department.

(2) Provide a copy of a signed contractual agreement with the operator of a second offsite treatment facility that provides for backup treatment of leachate at the second treatment facility if leachate cannot be treated by the primary treatment facility operator; or provide a signed letter of intent from the operator of the second offsite facility to enter a contractual agreement if the permit application is approved by the Department.

(3) Submit additional bond to the Department in an amount sufficient to pay for the cost of vehicular transportation and offsite leachate treatment until

final closure, if the disposal impoundment operator fails to provide offsite treatment in a manner that is consistent with the permit, the act and this chapter.

(4) Submit plans, designs and cross sections for an onsite pretreatment facility as required by § 289.453(b)(1) (relating to leachate transportation).

(c) If recirculation of raw or pretreated leachate is proposed in conjunction with another method, the application shall describe the following:

(1) The proposed leachate distribution method over the filled area, including designs and cross sections.

(2) The methods that will be used to prevent leachate seeps and breakouts.

(3) The methods that will be used to prevent odors, runoff and ponding.

(4) The impact that recirculation of the leachate will have on the solidification of waste at the impoundment.

(d) The application shall also contain a schedule and method for cleaning sludges from the leachate storage and treatment system, and a plan for disposing of the sludges.

Cross References

This section cited in 25 Pa. Code § 289.411 (relating to additional provisions); 25 Pa. Code § 289.414 (relating to modification of leachate treatment plan); and 25 Pa. Code § 289.455 (relating to leachate collection and storage).

§ 289.414. Modification of leachate treatment plan.

(a) If a problem identified in § 289.457 (relating to Departmental notice and remedial action) occurs, the operator shall submit to the Department, within 60 days, a permit modification application under § 287.222 (relating to permit modification), with plans, designs and cross sections to modify its leachate treatment plan.

(b) The Department may approve permit modification applications under § 287.222 to extend, by 1 year at a time, the 3-year limitation for leachate transportation in § 289.453(a) (relating to leachate transportation), if the following apply:

(1) The applicant complies with § 289.413(b) (relating to leachate treatment plan).

(2) The applicant has obtained necessary permits to construct and operate a leachate treatment system under § 289.452 (relating to basic treatment methods).

(3) Leachate transportation from the facility has not caused or contributed to violations of the terms or conditions of the permit.

(4) The applicant has a valid contract for the treatment of leachate at an offsite treatment facility for the 1-year term of the proposed permit modification.

(5) The offsite treatment facility to which leachate would be transported is operating in compliance with The Clean Streams Law and regulations thereunder, and is otherwise capable of accepting and treating leachate from the disposal impoundment.

(6) The disposal impoundment has a remaining permitted life, based on permitted capacity, of at least 3 years.

Cross References

This section cited in 25 Pa. Code § 289.411 (relating to additional provisions); and 25 Pa. Code § 289.453 (relating to leachate transportation).

§ 289.415. Waste classification plan.

In addition to the application requirements in Subchapter B (relating to application requirements), the application shall demonstrate that waste that is proposed to be disposed of at the facility complies with § 289.423 (relating to minimum requirements for acceptable waste).

ADDITIONAL OPERATING REQUIREMENTS— GENERAL PROVISIONS

§ 289.421. Basic limitations.

In addition to the operating requirements in Subchapter C (relating to operating requirements), a person or municipality that operates a Class I residual waste disposal impoundment shall comply with §§ 289.422, 289.423, 289.431—289.439 and 289.451—289.457.

§ 289.422. Areas where Class I residual waste disposal impoundments are prohibited.

(a) Except for areas that were permitted prior to July 4, 1992, Class I residual waste disposal impoundments may not be operated:

(1) In the 100-year floodplain of waters of this Commonwealth.

(2) In or within 300 feet of an exceptional value wetland.

(3) In or within 100 feet of a wetland other than an exceptional value wetland, unless storage, processing and disposal will not occur within that distance and one of the following is true:

(i) If the operation is in or along the wetland, the operator has received a permit from the Department under Chapter 105 (relating to dam safety and waterway management).

(ii) If the operation is not in or along the wetland, no adverse hydrologic or water quality impacts will result.

(4) In coal bearing areas underlain by recoverable or mineable coals unless the permittee owns the underlying coal.

(5) In a valley, ravine or head of hollow where the operation would result in the elimination, pollution or destruction of a portion of a perennial stream, except that rechanneling may be allowed as provided in Chapter 105.

(6) In areas underlain by limestone or carbonate formations where the formations are greater than 5 feet thick and present at the topmost geologic unit. These areas include areas mapped by the Pennsylvania Geological Survey as underlain by the formations, unless competent geologic studies demonstrate the absence of limestone and carbonate formations.

(7) If occupied dwellings are nearby, the following apply:

(i) Except as provided in subparagraphs (ii) and (iii), a residual waste disposal impoundment may not be operated within 300 feet measured horizontally from an occupied dwelling, unless the owner thereof has provided a written waiver consenting to the facility being closer than 300 feet. Except as provided in subparagraphs (ii) and (iii), the disposal area of a residual waste landfill may not be within 500 feet measured horizontally from an occupied dwelling, unless the owner thereof has provided a written waiver consenting to the disposal area being closer than 500 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(ii) For a permitted noncaptive residual waste disposal impoundment that was operating and not closed as of January 13, 2001, an expansion permitted on or after January 13, 2001, may not be operated within 900 feet measured horizontally from an occupied dwelling, unless one or both of the following conditions are met:

(A) The owner of the dwelling has provided a written waiver consenting to the facility or disposal area being closer than 900 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(B) The applicant owned or entered into an enforceable option contract to purchase the land on which the expansion would operate on or before January 13, 2001, and still holds the option rights, still owns the land or owns the land pursuant to the option rights contract when the permit expansion is issued. Even if the requirement of this subparagraph is met, the expansion may not be operated within 300 feet measured horizontally from an occupied dwelling and the disposal area may not be within 500 feet measured horizontally from an occupied dwelling.

(iii) A new, noncaptive residual waste disposal impoundment, permitted on or after January 13, 2001, may not be operated within 900 feet measured horizontally from an occupied dwelling, unless the owner of the dwelling has provided a written waiver consenting to the facility being closer than 900 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner. A closed,

noncaptive disposal impoundment that submits an application to reopen and expand shall also be subject to this paragraph.

(iv) Notwithstanding the prohibitions in subparagraphs (ii) and (iii), an access road to a residual waste disposal impoundment may not be operated within 300 feet measured horizontally from an occupied dwelling, unless the owner of the dwelling has provided a written waiver consenting to the access road being closer than 300 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(8) Within 100 feet of a perennial stream, unless storage, processing and disposal will not occur within that distance and no adverse hydrologic or water quality impacts will result.

(9) Within 100 feet of a property line, unless one of the following applies:

(i) Actual disposal will not occur within that distance.

(ii) The owner has provided a written consent to the facility being closer than 100 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(10) For disposal, processing and storage areas, within 1/4 mile upgradient, and within 300 feet downgradient, of a private or public water source, except that the Department may waive or modify these isolation distances if the operator demonstrates and the Department finds, in writing, that the following conditions have been met:

(i) The owners of the public and private water sources in the isolation area have consented, in writing, to the location of the proposed facility.

(ii) The operator and each water source owner have agreed, in writing, that the applicant will construct and maintain at the operator's expense a permanent alternative water supply of like quantity and quality at no additional cost to the water source owner if the existing source is adversely affected by the facility.

(iii) The applicant has demonstrated that a replacement water source is technically and economically feasible and readily available for every public or private water source in the isolation area.

(11) If the facility receives or proposes to receive putrescible waste:

(i) Within 10,000 feet—or 3,048 meters—of an airport runway that is or will be used by turbine-powered aircraft during the life of disposal operations under the permit.

(ii) Within 5,000 feet—or 1,524 meters—of an airport runway that is or will be used by piston-type aircraft during the life of disposal operations under the permit.

(iii) For areas permitted on or after January 13, 2001, in a manner in which any portion of the impoundment would be an obstruction to air navigation under 14 CFR 77.23(a)(5) (relating to standards for determining obstructions).

(12) If a school, park or playground is nearby, the following apply:

(i) Except for an expansion of a noncaptive residual waste disposal impoundment permit issued prior to January 13, 2001, for a noncaptive residual waste disposal impoundment permit issued on or after January 13, 2001, within 300 yards of the following:

(A) A building which is owned by a school district or school and used for instructional purposes.

(B) A park.

(C) A playground.

(ii) The current property owner of a school building, park or playground may waive the 300-yard prohibition by signing a written waiver. Upon receipt of the waiver, the Department will waive the 300-yard prohibition and will not use the prohibition as the basis for the denial of a new permit.

(b) The Department may waive or modify one or more of the isolation distances in subsection (a)(1), (5), (7), (8) and (10) for expansions of captive facilities if the operator of the captive facility demonstrates all of the following to the Department's satisfaction:

(1) The captive facility was permitted prior to July 4, 1992, or was permitted after July 4, 1992, if the Department determined the permit application for the facility to be administratively complete prior to July 4, 1992.

(2) The captive facility routinely and regularly disposed of residual waste on and after July 4, 1992.

(3) The expansion of the captive facility solely includes land which is contiguous to the captive facility.

(4) The expansion of the captive facility solely includes land which is owned by the applicant on July 4, 1992.

(5) No other site is available on contiguous land for the expansion of the captive facility.

(6) The expansion of the captive facility will be designed and operated to ensure that the facility does not harm public health, safety, welfare or the environment.

(c) Subsection (b) does not authorize the expansion of a captive facility onto land which is located closer to any occupied dwelling than the facility is located prior to the expansion.

(d) Except as provided in subsection (e), this section does not apply to features that may come into existence after the date of the first newspaper notice of the filing of a permit application under § 287.151 (relating to public notice by applicant).

(e) This section does not apply to features that may come into existence after the date of the first newspaper notice under this subsection if the following apply:

(1) The person or municipality publishes a notice of intent to file an application for a residual waste disposal impoundment permit. The notice, which is separate from the newspaper notice required by § 287.151, shall be published once a week for 3 consecutive weeks in a newspaper of general circulation in the area where the facility is proposed to be located. The notice shall include a brief description of the location and proposed operation of the facility.

(2) The person or municipality files an administratively complete application under § 287.202 (relating to completeness review) with the Department within 1 year from the date of the first newspaper notice under this subsection.

(f) The Department may waive the isolation distances in this section for areas that were included in the permit area of a permit application that was determined by the Department to be administratively complete before July 4, 1992.

Source

The provisions of this § 289.422 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226754) to (226756).

Cross References

This section cited in 25 Pa. Code § 287.111 (relating to notice by impoundments and unpermitted processing or disposal facilities); 25 Pa. Code § 289.113 (relating to maps and related information); and 25 Pa. Code § 289.421 (relating to basic limitations).

§ 289.423. Minimum requirements for acceptable waste.

(a) A person or municipality may not dispose of residual waste at a Class I residual waste disposal impoundment unless the waste meets the following criteria:

(1) Neither the residual waste nor leachate from the waste will adversely affect the ability of the liner system to prevent groundwater degradation.

(2) Leachate generated from the residual waste will be treated by the facility's leachate treatment system in accordance with the applicable laws and in a manner that will protect public health, safety and the environment.

(3) The residual waste will not react, combine or otherwise interact with other waste that is or will be disposed at the facility in a manner that will adversely affect the ability of the liner system to prevent groundwater pollution.

(4) The residual waste may not be allowed to react, combine or otherwise interact with other waste or materials to endanger public health, safety and welfare or the environment by generating extreme heat or pressure, fire or explosion, or toxic mists, fumes, dusts or vapors. The potential for this interaction shall be determined using the procedure set forth in the EPA's "A Method for Determining the Compatibility of Hazardous Wastes" (EPA-600/2-80-076)—available through the Department or the National Technical Information

Service (NTIS) United States Department of Commerce, Springfield, VA 22161— or another equivalent method approved by the Department in the permit.

(5) The physical characteristics of the waste will not cause or contribute to structural instability or other operating problems at the site.

(b) A person or municipality may not store or dispose of municipal waste or special handling waste at a Class I residual waste disposal impoundment.

(c) A person or municipality may not dispose of hazardous waste at a Class I residual waste disposal impoundment unless the following are met:

(1) Disposal of the waste at a residual waste disposal impoundment is authorized by Article VII (relating to hazardous waste management).

(2) The Department approves of the disposal of the waste at the residual waste disposal impoundment in the permit.

(d) A person or municipality may not dispose of solid waste at a Class I residual waste disposal impoundment if the Toxic Substances Control Act (15 U.S.C.A. §§ 2601—2629) prohibits the disposal of the solid waste at the residual waste disposal impoundment.

Source

The provisions of this § 289.423 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226756) and (255113).

Cross References

This section cited in 25 Pa. Code § 289.132 (relating to operation plan); 25 Pa. Code § 289.211 (relating to waste analysis); 25 Pa. Code § 289.415 (relating to waste classification plan); 25 Pa. Code § 289.421 (relating to basic limitations); and 25 Pa. Code § 299.144 (relating to operating requirements).

ADDITIONAL OPERATING REQUIREMENTS— LINER SYSTEM

§ 289.431. Scope and requirements.

(a) A person or municipality operating a Class I residual waste disposal impoundment shall design, construct, operate and maintain a liner system for disposal areas of a residual waste disposal impoundment or components thereof under this section and §§ 289.432—289.439.

(b) The liner system for a Class I residual waste disposal impoundment shall include the following elements:

(1) The subbase, which is the prepared layer of soil or earthen materials upon which the remainder of the liner system is constructed.

(2) The secondary liner, which is a continuous layer of synthetic materials or remolded clay placed on the subbase.

- (3) The leachate detection zone, which is a prepared layer placed on top of the secondary liner and upon which the primary liner is placed, and in which a leachate detection system is located.
 - (4) The primary liner, which is a continuous layer of synthetic materials placed on the leachate detection zone.
 - (5) The protective cover and leachate collection zone, which is a prepared layer placed over the primary liner in which a leachate collection system is located.
- (c) Either the primary liner or the secondary liner shall be a composite liner, which is a continuous layer of synthetic materials over earthen materials.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); and 25 Pa. Code § 289.421 (relating to basic limitations).

§ 289.432. General limitations.

- (a) The bottom of the subbase of the liner system cannot be in contact with the seasonal high water table or perched water table without the use of ground-water pumping systems.
- (1) Soil mottling may indicate the presence of a seasonal high water table.
 - (2) Drainage systems may be utilized to prevent contact between the bottom of the subbase of the liner system and the seasonal high water table or perched water table. The operator may not use a drainage system if the system is likely to adversely affect the quality or quantity of water provided by a public or private water supply, even if a replacement supply is available under § 289.255 (relating to water supply replacement). The drainage system shall be limited to drain tile, piping, french drains or equivalent methods.
- (b) For unconfined aquifers, at least 8 feet shall be maintained between the bottom of the subbase of the liner system and the regional groundwater table. The regional groundwater table may not be artificially lowered.
- (c) For confined aquifers, at least 8 feet shall be maintained between the bottom of the subbase of the liner system and the top of the confining layer or the shallowest level below the bottom of the subbase where groundwater occurs as a result of upward leakage from natural or other preexisting causes. The integrity of the confining layer may not be compromised by excavation.
- (d) If the approved design plans provide for the placement of additional adjacent liner:
- (1) Waste may not be placed within 25 feet of an edge of the liner.
 - (2) The edge of the liner shall be protected by approved soil cover, or another material approved in the permit, until additional liner is added.

- (e) If the approved design plans do not provide for the placement of additional adjacent liner, waste may not be placed within 4 feet of an edge of the liner.
- (f) The edge of the liner shall be clearly marked.

Source

The provisions of this § 289.432 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (255114) and (226759).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.433. Subbase.

(a) The subbase shall meet the following performance standards. The subbase shall:

- (1) Bear the weight of the liner system, waste, waste cover material and equipment operating on the facility without causing or allowing a failure of the liner system.
- (2) Accommodate potential settlement without damage to the liner system.
- (3) Be a barrier to the transmission of liquids.
- (4) Cover the bottom and sidewalls of the facility.

(b) Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the subbase shall meet the following design requirements. The subbase shall:

- (1) Consist of an upper 6 inches that is:
 - (i) Compacted to a standard proctor density of at least 95%.
 - (ii) No more permeable than 1.0×10^{-5} cm/sec., based on laboratory and field testing, unless the clay component of a composite liner is located directly above the subbase.
 - (iii) Hard, uniform, smooth and free of debris, rock fragments, plant materials and other foreign material.
- (2) Have a postsettlement slope of at least 2% and no more than 33%.

Source

The provisions of this § 289.433 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226759) to (226760).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25

Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.434. Secondary liner.

(a) *Requirements.* The secondary liner shall meet the following requirements:

(1) The secondary liner shall prevent the migration of leachate through the liner to the greatest degree that is technologically possible.

(2) The effectiveness of the secondary liner in preventing the migration of leachate may not be adversely affected by the physical or chemical characteristics of solid waste, solid waste constituents or leachate from the facility.

(3) The secondary liner shall be resistant to physical failure, chemical failure and other failure from the sources identified under § 289.412(d) (relating to liner system and leachate control plan).

(4) The secondary liner shall cover the bottom and sidewalls of the facility.

(b) *Design requirements.* Unless alternative design requirements to meet the performance standards in subsection (a) as part of the permit under § 287.231 (relating to equivalency review procedure) are approved, the secondary liner shall meet, at the minimum, the requirements of Appendix A, Table I (relating to minimum liner design standards).

(c) *Construction requirements.* A secondary liner shall:

(1) Be no more permeable than 1.0×10^{-7} cm/sec., based on laboratory testing. For nonsynthetic liners, field testing shall also be conducted.

(2) Be installed, if the liner is synthetic, according to manufacturer's specifications under the supervision of an authorized representative of the manufacturer. An approved quality assurance and quality control plan shall be implemented in the field during the installation of the liner.

(3) Be designed, installed and maintained, if the liner is remolded clay, according to a quality assurance and quality control plan approved by the Department.

(4) Be inspected for uniformity, damage and imperfections during construction and installation.

(d) *Compacted lifts.* Secondary liners made of clay, bentonite and bentonite-like materials shall be constructed in compacted lifts not exceeding 6 inches in depth. A lift shall be scarified before placement of the next lift.

(e) *Composite secondary liners.*

(1) If the operator does not design, construct, operate and maintain a composite primary liner, the operator shall design, construct, operate and maintain a composite secondary liner which has the following:

(i) An upper component made of a manufactured geosynthetic liner that meets the requirements of this section independently of the composite component.

(ii) A composite component made of earthen material that meets the requirements of this section independently of the upper component, except that the composite component may not be more permeable than 1.0×10^{-6} cm/sec., based on laboratory and field testing.

(2) The two components of the composite liner shall be designed, constructed and maintained to provide a compression connection, or direct continuous contact, between them.

(3) Use of a composite secondary liner does not relieve the operator of responsibility for a separate primary liner under § 289.436 (relating to primary liner).

(f) *Natural attenuation prohibited.* A facility or a component thereof that is subject to this section may not have a secondary liner based upon natural attenuation of leachate.

Source

The provisions of this § 289.434 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226760) to (226761).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); 25 Pa. Code § 289.436 (relating to primary liner); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.435. Leachate detection zone.

(a) The leachate detection zone shall meet the following performance standards. The leachate detection zone shall:

(1) Rapidly detect and collect liquid entering the leachate detection zone, and rapidly transmit the liquid to the leachate treatment system.

(2) Withstand chemical attack from waste or leachate.

(3) Withstand anticipated loads, stresses and disturbances from overlying waste, waste cover materials and equipment operation.

(4) Function without clogging.

(5) Prevent the liner from puncturing, cracking, tearing, stretching or otherwise losing its physical integrity.

(6) Cover the bottom and sidewalls of the facility.

(b) Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the leachate detection zone of a liner system shall meet the following design requirements. The leachate detection zone shall:

(1) Be at least 12 inches thick.

(2) Contain no material exceeding 0.5 inches in particle size.

- (3) Create a flow zone between the secondary liner and the primary liner equal to, or more permeable, than 1.0×10^{-2} cm/sec., based on a laboratory testing and, when required by the Department, field testing.
- (4) Contain a perforated piping system capable of detecting and intercepting liquid within the leachate detection zone and conveying the liquid to a collection sump for storage, processing or disposal. The sump shall be separate from the leachate collection sump, and shall be of a sufficient size to transmit leachate that is generated.
- (5) The piping system shall also meet the following requirements:
 - (i) The slope, size and spacing of the piping system shall assure that liquids drain from the leachate detection zone.
 - (ii) The pipes shall be installed primarily perpendicular to the flow and shall have a minimum postsettlement grade of at least 2%.
 - (iii) The minimum diameter of the perforated pipe shall be 4 inches with a wall thickness of Schedule-80 or greater, as specified by ASTM, or equivalent.
 - (iv) The pipes shall be cleaned and maintained as necessary.
- (6) The leachate detection zone shall have a minimum bottom slope of 2%.
- (7) Contain noncarbonate stones or aggregate with no sharp edges.
- (c) The operator shall monitor the leachate detection zone weekly to determine whether liquid is flowing from the zone.
- (d) If liquid is flowing from the leachate detection zone, the operator shall immediately do the following:
 - (1) Notify the Department in writing.
 - (2) Estimate on a weekly basis, the volume of liquid flowing from the zone.
 - (3) Sample and analyze the liquid quarterly, unless a more frequent basis is required by the Department, for pH, specific conductivity, total organic carbon, chlorides and other parameters specified in the permit. The Department may also require sampling and analysis for other constituents expected to be found in the waste.
 - (4) Provide written copies of flow and analysis data to the Department.
- (e) If leachate flow is greater than 100 gallons per acre of lined collection area per day, or more than 10% of leachate generation, the operator shall:
 - (1) Submit to the Department within 30 days a plan for locating the source of leachate in the leachate detection zone, and for determining the severity and cause of leachate penetration.
 - (2) Implement the plan upon Department approval, and complete the plan in a reasonable time not to exceed 6 months.
 - (3) Submit to the Department within 45 days after completion of the plan a report containing the new data collected, analysis of the data and recommendations concerning a remedial plan.

- (4) Conduct quarterly sampling and analysis for the parameters in § 289.264(a)(1) (relating to sampling and analysis), and submit copies of the results of the analysis to the Department.
- (f) If sampling results indicate the presence of constituents at concentrations that could result in groundwater degradation at a monitoring well, the operator shall:
- (1) Submit a remedial plan for controlling the source of leachate in the leachate detection zone and correcting a malfunction or defect in the liner system, and implement the plan upon Department approval.
 - (2) Submit a permit modification application under § 287.222 (relating to permit modification) for increased groundwater monitoring, giving consideration to monitoring frequency, number of wells and other factors, and conduct increased groundwater monitoring upon Department approval of the application.

Source

The provisions of this § 289.435 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226761) to (226763).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.436. Primary liner.

- (a) *Requirements.* The primary liner shall meet the following requirements:
- (1) The primary liner shall prevent the migration of leachate through the liner to the greatest degree that is technologically possible.
 - (2) The effectiveness of the primary liner in preventing the migration of leachate may not be adversely affected by the physical or chemical characteristics of solid waste, solid waste constituents or leachate from the facility.
 - (3) The primary liner shall be resistant to physical failure, chemical failure and other failure from the properties identified under § 289.161 (relating to impoundment plan).
 - (4) The primary liner shall cover the bottom and sidewalls of the facility.
- (b) *Design requirements.* Unless alternative design standards to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the primary liner shall meet, at the minimum, the requirements of Appendix A, Table I (relating to minimum liner design standards).
- (c) *Specifications.* A primary liner shall be:

- (1) No more permeable than 1.0×10^{-7} cm/sec., based on laboratory testing.
- (2) Installed, if the liners are synthetic, according to the manufacturer's specifications under the supervision of an authorized representative of the manufacturer. The approved quality control program shall be implemented in the field during the installation of the liner.
- (3) Inspected for uniformity, damage and imperfections during construction or installation.
- (d) *Composite primary liner.*
 - (1) If the operator does not design, construct, operate and maintain a composite secondary liner, the operator shall design, construct, operate and maintain a composite primary liner which has the following characteristics:
 - (i) An upper component made of a manufactured geosynthetic liner that meets the requirements of this section independently of the composite component.
 - (ii) A composite component made of earthen material that meets the requirement of § 289.434 (relating to secondary liner) independently of the upper component, except that the composite component may not be more permeable than 1.0×10^{-6} cm/sec., based on laboratory and field testing.
 - (2) The two components of the composite liner shall be designed, constructed and maintained to provide a compression connection, or direct continuous contact between them.
 - (3) The use of a composite primary liner does not relieve the operator of responsibility for a separate secondary liner under § 289.434.
- (e) *Clay or earthen material prohibited.* Except as provided in subsection (d), a facility or component thereof that is subject to this section may not have a primary liner made of clay or earthen material or a primary liner based upon natural attenuation of leachate.

Source

The provisions of this § 289.436 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226763) to (226764).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.242 (relating to cover); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); 25 Pa. Code § 289.434 (relating to secondary liner); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.437. Protective cover.

- (a) The protective cover shall meet the following performance standards. The protective cover shall:

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- (1) Protect the primary liner from physical damage from stresses and disturbances from overlying wastes, waste cover materials and equipment operation.
 - (2) Protect the leachate collection system within the protective cover from stresses and disturbances from overlying wastes, waste cover materials and equipment operation.
 - (3) Allow the continuous and free flow of leachate into the leachate collection system within the protective cover.
 - (4) The protective cover shall cover the bottom and sidewalls of the facility.
- (b) Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the protective cover shall meet the following design requirements. The protective cover shall be:
- (1) Comprised of clean earthen material that contains no aggregate, rocks, debris, plant material or other solid material larger than 1/2 inch in diameter, and no material with sharp edges.
 - (2) Graded, uniformly compacted and smooth.
 - (3) As permeable as, or more permeable than, 1.0×10^{-2} cm/sec. based on laboratory testing, and shall allow the free flow of liquids and leachate passing through or generated by solid waste. Field testing shall also be conducted if required by the Department.
 - (4) At least 18 inches thick.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.438. Leachate collection system within protective cover.

- (a) The leachate collection system within the protective cover shall meet the following performance standards. The leachate collection system shall:
- (1) Ensure that free flowing liquids and leachate will drain continuously from the protective cover to the leachate treatment system.
 - (2) Withstand chemical attack from leachate.
 - (3) Withstand anticipated loads, stresses and disturbances from overlying waste, waste cover materials and equipment operation.
 - (4) Function without clogging.
 - (5) Cover the bottom and sidewalls of the facility.
- (b) Unless alternative design requirements to the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to

equivalency review procedure), the leachate collection system with the protective cover shall comply with the following design requirements.

- (1) The leachate collection system shall include a perforated piping system which is capable of intercepting free flowing liquids and leachate within the protective cover and conveying them to a collection sump for storage, processing or disposal. The collection sump shall be of a sufficient size to transmit leachate that is generated and shall be capable of automatic and continuous functioning.
 - (2) The perforated piping system shall be sloped, sized and spaced to assure that free flowing liquids and leachate will drain continuously from the protective cover to the collection sump or point.
 - (3) The minimum diameter of the perforated pipes shall be 6 inches with a wall thickness of Schedule-80 or greater as specified by ASTM, or equivalent.
 - (4) The leachate collection system shall contain stones or aggregates.
 - (5) The pipes shall be installed primarily perpendicular to the flow and shall have a minimum postsettlement grade of at least 2%.
 - (6) The leachate collection system shall be cleaned and maintained as necessary.
 - (7) The leachate collection system shall have a minimum bottom slope of 2%.
- (c) The Department may, in the permit, authorize the operator to delay activation of the leachate collection system until closure if the following are met:
- (1) The impoundment is designed so that liquid covers waste during the active life of the facility.
 - (2) Wastes disposed at the impoundment are free draining.
 - (3) Solidification is solely dependent on gravity drainage.
 - (4) Test data or historical information, or both, from impoundments that received similar wastes show that the requirements of § 289.212(b) (relating to waste solidification) will be met 2 years after waste disposal ceases.

Source

The provisions of this § 289.438 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226765) to (226766).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.212 (relating to waste solidification); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.431 (relating to scope and requirements); and 25 Pa. Code § 289.455 (relating to leachate collection and storage).

§ 289.439. Liner system; initial placement of solid waste.

The first 8 feet of solid waste placed on the protective cover may not contain material capable of penetrating or puncturing the protective cover.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.412 (relating to liner system and leachate control plan); 25 Pa. Code § 289.421 (relating to basic limitations); and 25 Pa. Code § 289.431 (relating to scope and requirements).

**ADDITIONAL OPERATING REQUIREMENTS—
LEACHATE TREATMENT****§ 289.451. Scope.**

A person or municipality operating a Class I residual waste disposal impoundment shall comply with this section and §§ 289.452—289.457.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.413 (relating to leachate treatment plan); and 25 Pa. Code § 289.421 (relating to basic limitations).

§ 289.452. Basic treatment methods.

(a) Except as otherwise provided in this section, leachate shall be collected and handled by direct discharge into a permitted publicly-owned treatment works, following pretreatment, if pretreatment is required by Federal, state or local law or by discharge into another permitted treatment facility.

(b) Leachate may be collected and handled by onsite treatment and discharged into a receiving stream under a permit issued by the Department under The Clean Streams Law and regulations thereunder, if the Department approves this method in a residual waste disposal impoundment permit.

(c) Leachate may be collected and handled by spray irrigation following treatment. This method will not be allowed unless, at a minimum, the following apply:

(1) Discharge into a publicly-owned treatment works or other permitted treatment facility is not practicable.

(2) Discharge of treated leachate into a receiving stream in a manner consistent with The Clean Streams Law and the regulations thereunder is not attainable.

(3) Spray irrigation will not cause air or water pollution.

(d) If the leachate is hazardous, it shall be managed under Article VII (relating to hazardous waste management).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.413 (relating to leachate treatment plan); 25 Pa. Code § 289.414 (relating to modification of leachate treatment plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.451 (relating to scope); 25 Pa. Code § 289.453 (relating to leachate transportation); and 25 Pa. Code § 289.454 (relating to leachate recirculation).

§ 289.453. Leachate transportation.

(a) For the first 3 years following initial discharge of leachate into the collection and handling system, leachate may be handled by vehicular transportation to, and leachate treatment at, an offsite treatment facility. Except as provided in § 289.414 (relating to modification of leachate treatment plan), the operator shall operate a leachate collection and treatment facility as provided in § 289.452 (relating to basic treatment methods) within 3 years following the detection of leachate in the collection or handling system.

(b) Vehicular transportation of leachate to an offsite treatment facility will not be allowed, unless the following requirements are met:

(1) Prior to the disposal of waste at the facility, the operator has in place at the site a permitted and fully operational system for fully pretreating the leachate in accordance with applicable pretreatment requirements of the primary and backup offsite treatment facilities.

(2) One of the following applies:

(i) Direct discharge into a publicly-owned treatment works or other permitted treatment facility is attainable within 3 years.

(ii) Discharge of treated leachate into a receiving stream in a manner consistent with The Clean Streams Law and regulations thereunder is attainable within 3 years.

(3) A leachate recirculation system under § 289.454 (relating to leachate recirculation) is constructed and fully operational.

(4) The disposal impoundment operator has a valid contract for the treatment of leachate at an offsite treatment facility for up to 3 years. The contract shall prohibit the treatment facility operator from refusing to treat leachate without 6 months' advance written notice to the landfill operator.

(5) The offsite treatment facility to which the leachate would be transported is operating in compliance with The Clean Streams Law and the regulations thereunder, and is otherwise authorized and capable of accepting and treating leachate from the disposal impoundment.

(c) If the operator loses the ability to dispose of leachate at the facility and is unable to secure an alternate offsite treatment facility acceptable to the Department within 15 days from loss of its approved treatment facility, implementation of the treatment plan required by § 289.452 shall begin immediately.

(d) If the operator cannot immediately implement a treatment plan under § 289.452 in compliance with this article, The Clean Streams Law and regula-

tions thereunder, and cannot locate an alternative offsite treatment facility within 15 days, the operator shall cease accepting waste at the facility for storage, processing or disposal. Cessation shall continue until the operator obtains an acceptable means of treating its leachate from the facility.

(e) Notwithstanding other provisions of this subchapter, the operator shall have in place at the site a permitted and fully operational system for fully treating leachate at least 3 full years before closure of the facility.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.413 (relating to leachate treatment plan); 25 Pa. Code § 289.414 (relating to modification of leachate treatment plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.451 (relating to scope); and 25 Pa. Code § 289.454 (relating to leachate recirculation).

§ 289.454. Leachate recirculation.

(a) In conjunction with the treatment methods in §§ 289.452 and 289.453 (relating to basic treatment methods; and leachate transportation), recirculation of leachate generated at the facility may be utilized if the following exist:

- (1) The area subject to leachate recirculation previously has been filled with solid waste.
- (2) There is sufficient residual waste capacity to absorb the leachate.
- (3) The area subject to leachate recirculation is underlain by a leachate collection system.
- (4) Leachate recirculation is conducted with an approved piping system located under the intermediate cover, and causes no odors, runoff or ponding.
- (5) The leachate is not a hazardous waste.
- (6) The leachate will not interfere with the solidification of waste at the impoundment.

(b) An alternate leachate recirculation method may be used if approved by the Department.

Source

The provisions of this § 289.454 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (255117).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.413 (relating to leachate treatment plan); 25 Pa. Code § 289.421 (relating to basic limitations); 25 Pa. Code § 289.451 (relating to scope); and 25 Pa. Code § 289.453 (relating to leachate transportation).

§ 289.455. Leachate collection and storage.

(a) Impoundments or tanks for storing leachate before or during treatment shall be constructed in accordance with §§ 299.122, 299.142 and 299.145 (relating to storage tanks; general requirements; and failure).

(b) An onsite leachate storage system shall be part of each leachate treatment method used by the operator. The storage system shall contain impoundments or tanks for storage of leachate. For noncaptive facilities, the tanks or impoundments shall have a storage capacity at least equal to the maximum expected production of leachate for a 30-day period for the life of the facility estimated under § 289.413 (relating to leachate treatment plan). For captive facilities, the tank or impoundment shall have sufficient storage capacity to ensure proper operation of the treatment facility in accordance with the approved leachate treatment plan and shall meet the performance standard in § 289.438(a)(1) (relating to leachate collection system within protective cover). No more than 25% of the total leachate storage capacity may be used for flow equalization on a regular basis.

(c) The impoundments or tanks shall be aerated as necessary to prevent and control odors. Impoundments or tanks shall each have a capacity of at least 250,000 gallons, unless otherwise approved by the Department.

(d) The storage capacity of impoundments and tanks at a site shall be increased, if additional storage is required, prior to each major phase of construction and as otherwise necessary.

(e) Leachate storage capacity may not be considered to include leachate that may have collected in or on the liner system.

(f) Necessary collection and containment systems shall be installed prior to the deposition of solid waste at the site. The leachate treatment or handling system approved by the Department under § 289.413 shall be installed or ready for use prior to the storage or disposal of solid waste at the site.

(g) For areas permitted after January 13, 2001, all underground pipes used for the transport of leachate from the liner system to the leachate storage impoundments or tanks shall be equipped with secondary containment or comply with the requirements in § 245.445 (relating to methods for release detection for piping). Secondary containment shall be designed, constructed and installed to direct any release to an area that can be inspected for leaks.

Source

The provisions of this § 289.455 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (255117) to (255118).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.413 (relating to leachate treatment plan); 25 Pa. Code § 289.421 (relating to basic limitations); and 25 Pa. Code § 289.451 (relating to scope).

§ 289.456. Leachate analysis and sludge handling.

(a) Upon commencement of leachate flow from the facility, the operator shall sample, analyze and maintain a record of the following:

(1) On a daily basis, the average flow rate and volume of leachate flowing from the disposal impoundment into the leachate storage and treatment system.

(2) On a quarterly basis unless otherwise provided in the permit, the chemical composition of leachate flowing into the leachate treatment system. The analysis shall be sufficient to determine the impact of leachate on the liner system, the effectiveness of the leachate treatment system, the need for modification of the groundwater monitoring system or the effluent limitations in an NPDES permit and the actual characteristics of leachate from the waste disposed at the facility. For the purpose of this analysis, the leachate sample shall be collected from the influent storage tank or impoundment and shall be representative of the average mixed influent leachate quality.

(b) Sludges resulting from the treatment of leachate may be disposed at the facility if the sludges are not hazardous under Article VII (relating to hazardous waste management).

Source

The provisions of this § 289.456 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (255118).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.264 (relating to sampling and analysis); 25 Pa. Code § 289.413 (relating to leachate treatment plan); 25 Pa. Code § 289.421 (relating to basic limitations); and 25 Pa. Code § 289.451 (relating to scope).

§ 289.457. Departmental notice and remedial action.

The operator shall immediately notify the Department and describe remedial steps to be taken if:

(1) Operation of the treatment facilities in accordance with the approved plan cannot prevent violation of the terms of its permits, The Clean Stream Law or regulations thereunder.

(2) The facility is generating a quality or quantity of leachate that exceeds the design capacity of the onsite pretreatment system.

(3) The contractual agreement for leachate treatment by an offsite treatment system is breached or expired.

(4) The quality or quantity of solid waste being disposed at the site changes from that set forth in the permit.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.413 (relating to leachate treatment plan); 25 Pa. Code § 289.414 (relating to modification of leachate treatment plan); 25 Pa. Code § 289.421 (relating to basic limitations); and 25 Pa. Code § 289.451 (relating to scope).

**Subchapter E. ADDITIONAL REQUIREMENTS FOR CLASS II
RESIDUAL WASTE DISPOSAL IMPOUNDMENTS****SCOPE**

Sec.
289.501. Scope.

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289.512. Liner system and leachate control plan.
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**ADDITIONAL OPERATING REQUIREMENTS—
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- 289.551. Scope.
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SCOPE

§ 289.501. Scope.

This subchapter sets forth additional application and operating requirements for Class II residual waste disposal impoundments.

ADDITIONAL APPLICATION REQUIREMENTS

§ 289.511. General requirements.

In addition to the application requirements in Subchapter B (relating to application requirements), an application for a permit to operate a Class II residual waste disposal impoundment shall comply with §§ 289.512—289.514 (relating to liner system and leachate control plan; leachate treatment plan; and modifications of leachate treatment plan). These requirements shall be part of the Phase II permit application.

§ 289.512. Liner system and leachate control plan.

(a) The application shall contain plans, drawings, cross sections and specifications for a liner system to demonstrate compliance with §§ 289.531—289.538 (relating to additional operating requirements—liner system), including the following:

(1) The design of the liner system, including thickness and characteristics of the subbase, the thickness and characteristics of the leachate detection zone, the design for the leachate monitoring system in the leachate detection zone, the nature and thickness of the liner material, the thickness and characteristics of the protective cover and leachate collection zone and the design for the leachate collection system in the collection zone.

(2) A plan for installing the liner system.

(b) The application shall include a quality assurance and quality control plan for the construction and installation of the liner system. The plan shall include, at a minimum, the following:

(1) A description of the testing procedures and construction methods proposed to be implemented during construction of the liner system.

- (2) A description of the manner in which the protective cover and the liner system will be maintained and protected in unfilled portions of the disposal area prior to and during initial disposal of solid waste.
 - (3) A description of the manner in which the protective cover and liner system will be protected from weather prior to and during initial disposal of solid waste.
 - (4) A description of the qualifications of the quality assurance and quality control personnel, presented in terms of experience and training necessary to implement the plan.
 - (5) A sampling plan for every component of the liner system, including sample size, methods for determining sample locations, sampling frequency, acceptance and rejection criteria, and methods for ensuring that corrective measures are implemented as soon as possible.
 - (6) A plan for documenting compliance with the quality assurance and quality control plan.
- (c) The application shall demonstrate that leachate will not adversely affect the physical or chemical characteristics of the proposed liner system, or inhibit the liner's ability to restrict the flow of solid waste, solid waste constituents or leachate based on EPA or ASTM guidelines approved by the Department.
- (d) The application shall include a complete description of the physical, chemical, mechanical and thermal properties for the proposed liner, based on ASTM methods when appropriate. These properties shall include, at a minimum:
- (1) Thickness.
 - (2) Tensile strength at yield.
 - (3) Elongation at yield.
 - (4) Elongation at break.
 - (5) Density.
 - (6) Tear resistance.
 - (7) Carbon black content.
 - (8) Puncture resistance.
 - (9) Seam strength—% of liner strength.
 - (10) Ultraviolet light resistance.
 - (11) Carbon black dispersion.
 - (12) Permeability.
 - (13) Liner friction.
 - (14) Stress crack resistance.
 - (15) Oxidative induction time.
 - (16) Chemical compatibility.
 - (17) Percent recycled materials.

Source

The provisions of this § 289.512 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226772) to (226774).

Cross References

This section cited in 25 Pa. Code § 289.511 (relating to general requirements); 25 Pa. Code § 289.535 (relating to liner); and 25 Pa. Code § 299.143 (relating to application requirements).

§ 289.513. Leachate treatment plan.

(a) An application shall contain a plan for leachate treatment from the proposed facility that complies with §§ 289.551—289.557 (relating to additional operating requirements—leachate treatment). The plan shall include the following:

(1) An estimate of the quality and quantity of leachate to be produced annually by the facility, based on the water balance method set forth in “Use of Water Balance Method for Predicting Leachate Generation from Solid Waste Disposal Sites” EPA SW-168 (1975), (available through the Department or the National Technical Information Service (NTIS), United States Department of Commerce, Springfield, VA. 22161), or another method of accurately projecting leachate flows that is approved by the Department, in writing. The estimate shall include the 30-day leachate volume and average flow rate for each month of the year. A separate estimate shall be submitted for anticipated leachate generation at the end of 5-year increments of operation for 20 years, or until closure, whichever date is earlier. For existing facilities, current leachate generation shall be included with this separate estimate.

(2) Plans, designs and cross sections for the proposed collection and handling system.

(3) Plans, designs and cross sections for onsite leachate treatment or disposal systems, including tanks and impoundments that are proposed to be used or constructed for storage, pretreatment or treatment of leachate from the facility.

(4) If an onsite treatment system already in operation is proposed to treat leachate from the facility, a description of the system, including its NPDES permit number, its capability to treat leachate from the facility and its compliance status under The Clean Streams Law and regulations thereunder.

(b) If interim vehicular transportation to an offsite treatment facility is proposed, the applicant shall:

(1) Provide a copy of a signed contractual agreement with the operator of a primary offsite facility that provides for treatment of leachate at the facility, and which covers the period of time that offsite treatment will be provided; or provide a signed letter of intent from the operator of the offsite facility to enter a contractual agreement for leachate treatment if the permit application is approved by the Department.

(2) Provide a copy of a signed contractual agreement with the operator of a second offsite treatment facility that provides for backup treatment of leachate at the second treatment facility if leachate cannot be treated by the primary treatment facility operator; or provide a signed letter of intent from the

operator of the second offsite facility to enter a contractual agreement if the permit application is approved by the Department.

(3) Submit additional bond to the Department in an amount sufficient to pay for the cost of vehicular transportation and offsite leachate treatment until final closure, if the disposal impoundment operator fails to provide offsite treatment in a manner that is consistent with the permit, the act and this chapter.

(4) Submit plans, designs and cross sections for an onsite pretreatment facility as required by § 289.553(b)(1) (relating to leachate transportation).

(c) If recirculation of raw or pretreated leachate is proposed in conjunction with another method, the application shall describe the following:

(1) The proposed leachate distribution method over the filled area, including designs and cross sections.

(2) The methods that will be used to prevent leachate seeps and breakouts.

(3) The methods that will be used to prevent odors, runoff and ponding.

(4) The impact that recirculation of the leachate will have on the solidification of waste at the impoundment.

(d) The application shall also contain a schedule and method for cleaning sludges from the leachate storage and treatment system, and a plan for disposing of the sludges.

Cross References

This section cited in 25 Pa. Code § 289.511 (relating to general requirements); 25 Pa. Code § 289.514 (relating to modifications of leachate treatment plan); and 25 Pa. Code § 289.555 (relating to leachate collection and storage).

§ 289.514. Modifications of leachate treatment plan.

(a) If a problem identified in § 289.557 (relating to Departmental notice and remedial action) occurs, the operator shall submit to the Department, within 60 days, a permit modification application under § 287.222 (relating to permit modification), with plans, designs and cross sections to modify its leachate treatment plan.

(b) The Department may approve permit modification applications under § 287.222 to extend, by 1 year at a time, the 3-year limitation for leachate transportation in § 289.553(a) (relating to leachate transportation), if the following conditions apply:

(1) The applicant complies with § 289.513(b) (relating to leachate treatment plan).

(2) The applicant has obtained necessary permits to construct and operate a leachate treatment system under § 289.552 (relating to basic treatment methods).

(3) Leachate transportation from the facility has not caused or contributed to violations of the terms or conditions of the permit.

(4) The applicant has a valid contract for the treatment of leachate at an offsite treatment facility for the 1-year term of the proposed permit modification.

(5) The offsite treatment facility to which leachate would be transported is operating in compliance with The Clean Streams Law and regulations thereunder, and is otherwise capable of accepting and treating leachate from the disposal impoundment.

(6) The disposal impoundment has a remaining permitted life, based on permitted capacity, of at least 3 years.

Cross References

This section cited in 25 Pa. Code § 289.511 (relating to general requirements); and 25 Pa. Code § 289.553 (relating to leachate transportation).

§ 289.515. Waste classification plan.

In addition to the application requirements set forth in Subchapter B (relating to application requirements), the application shall demonstrate that waste that is proposed to be disposed of at the facility complies with § 289.523 (relating to minimum requirements for acceptable waste).

ADDITIONAL OPERATING REQUIREMENTS—GENERAL

§ 289.521. Limitations.

(a) In addition to the operating requirements in Subchapter C (relating to operating requirements), a person or municipality that operates a Class II residual waste disposal impoundment shall comply with §§ 289.522, 289.523, 289.531—289.538 and 289.551—289.557.

(b) If a facility is a noncaptive facility, it shall be operated as a monofill.

§ 289.522. Areas where Class II residual waste disposal impoundments are prohibited.

(a) Except for areas that were permitted prior to July 4, 1992, Class II residual waste disposal impoundments may not be operated as follows:

(1) In the 100-year floodplain of waters of this Commonwealth.

(2) In or within 300 feet of an exceptional value wetland.

(3) In or within 100 feet of a wetland other than an exceptional value wetland, unless storage, processing and disposal will not occur within that distance and one of the following is true:

(i) If the operation is in or along the wetland, the operator has received a permit from the Department under Chapter 105 (relating to dam safety and waterway management).

(ii) If the operation is not in or along the wetland, no adverse hydrologic or water quality impacts will result.

(4) In coal bearing areas underlain by recoverable or mineable coals, unless the permittee owns the underlying coal.

(5) In a valley, ravine or head of hollow where the operation would result in the elimination, pollution or destruction of a portion of a perennial stream, except that rechanneling may be allowed as provided in Chapter 105.

(6) In areas underlain by limestone or carbonate formations where the formations are greater than 5 feet thick and present at the topmost geologic unit. The areas include area mapped by the Pennsylvania Geological Survey as underlain by these formations, unless competent geologic studies demonstrate the absence of limestone and carbonate formations.

(7) If occupied dwellings are nearby, the following apply:

(i) Except as provided in subparagraphs (ii) and (iii), a residual waste disposal impoundment may not be operated within 300 feet measured horizontally from an occupied dwelling, unless the owner thereof has provided a written waiver consenting to the facility being closer than 300 feet. Except as provided in subsections (ii) and (iii), the disposal area of a residual waste landfill may not be within 500 feet measured horizontally from an occupied dwelling, unless the owner thereof has provided a written waiver consenting to the disposal area being closer than 500 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(ii) For a permitted noncaptive residual waste disposal impoundment that was operating and not closed as of January 13, 2001, an expansion permitted on or after January 13, 2001, may not be operated within 900 feet measured horizontally from an occupied dwelling, unless one or both of the following conditions are met:

(A) The owner of the dwelling has provided a written waiver consenting to the facility or disposal area being closer than 900 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(B) The applicant owned or entered into an enforceable option contract to purchase the land on which the expansion would operate on or before January 13, 2001, and still holds the option rights, still owns the land or owns the land pursuant to the option rights contract when the permit expansion is issued. Even if the requirement of this subparagraph is met, the expansion may not be operated within 300 feet measured horizontally from an occupied dwelling and the disposal area may not be within 500 feet measured horizontally from an occupied dwelling.

(iii) A new, noncaptive residual waste disposal impoundment, permitted on or after January 13, 2001, may not be operated within 900 feet measured horizontally from an occupied dwelling, unless the owner of the dwelling has provided a written waiver consenting to the facility being closer than 900 feet. A waiver shall be knowingly made and separate from a lease or deed

unless the lease or deed contains an explicit waiver from the owner. A closed, noncaptive disposal impoundment that submits an application to reopen and expand shall also be subject to this paragraph.

(iv) Notwithstanding the prohibitions in subparagraphs (ii) and (iii), an access road to a residual waste disposal impoundment may not be operated within 300 feet measured horizontally from an occupied dwelling, unless the owner of the dwelling has provided a written waiver consenting to the access road being closer than 300 feet. A waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(8) Within 100 feet of a perennial stream, or in or within 100 feet of a wetland other than an exceptional value wetland, unless disposal, processing and storage will not occur within that distance and no adverse hydrologic or water quality impacts will result.

(9) Within 100 feet of a property line, unless one of the following applies:

(i) Actual disposal will not occur within that distance.

(ii) The owner has provided a written consent to the facility being closer than 100 feet. The waiver shall be knowingly made and separate from a lease or deed unless the lease or deed contains an explicit waiver from the owner.

(10) For disposal, processing and storage areas, within 1/4 mile upgradient, and within 300 feet downgradient, of a private or public water source, except that the Department may waive or modify these isolation distances if the operator demonstrates and the Department finds, in writing, that the following conditions have been met:

(i) The owners of the public and private water sources in the isolation area have consented, in writing, to the location of the proposed facility.

(ii) The operator and each water source owner have agreed, in writing, that the applicant will construct and maintain at the operator's expense a permanent alternative water supply of like quantity and quality at no additional cost to the water source owner if the existing source is adversely affected by the facility.

(iii) The applicant has demonstrated that a replacement water source is technically and economically feasible and readily available for every public or private water source in the isolation area.

(11) If the facility receives or proposes to receive putrescible waste:

(i) Within 10,000 feet—or 3,048 meters—of an airport runway that is or will be used by turbine-powered aircraft during the life of disposal operations under the permit.

(ii) Within 5,000 feet—or 1,524 meters—of an airport runway that is or will be used by piston-type aircraft during the life of disposal operations under the permit.

(iii) For areas permitted on or after January 13, 2001, in a manner in which any portion of the impoundment would be an obstruction to air navigation under 14 CFR 77.23(a)(5) (relating to standards for determining obstructions).

(12) If a school, park or playground is nearby, the following apply:

(i) Except for an expansion of a noncaptive residual waste disposal impoundment permit issued prior to January 13, 2001, for a noncaptive residual waste disposal impoundment permit issued on or after January 13, 2001, within 300 yards of the following:

(A) A building which is owned by a school district or school and used for instructional purposes.

(B) A park.

(C) A playground.

(ii) The current property owner of a school building, park or playground may waive the 300-yard prohibition by signing a written waiver. Upon receipt of the waiver, the Department will waive the 300-yard prohibition and will not use the prohibition as the basis for the denial of a new permit.

(b) The Department may waive or modify one or more of the isolation distances in subsection (a)(1), (5), (7), (8) and (10) for expansions of captive facilities if the operator of the captive facility demonstrates the following to the Department's satisfaction:

(1) The captive facility was permitted prior to July 4, 1992, or was permitted after July 4, 1992, if the Department determined the permit application for the facility to be administratively complete prior to July 4, 1992.

(2) The captive facility routinely and regularly disposed of residual waste on and after the effective date of these regulations.

(3) The expansion of the captive facility solely includes land which is contiguous to the captive facility.

(4) The expansion of the captive facility solely includes land which is owned by the applicant on July 4, 1992.

(5) No other site is available on contiguous land for the expansion of the captive facility.

(6) The expansion of the captive facility will be designed and operated to ensure that the facility does not harm public health, safety, welfare or the environment.

(c) Subsection (b) does not authorize the expansion of a captive facility onto land which is located closer to an occupied dwelling than the facility is located prior to the expansion.

(d) Except as provided in subsection (e), this section does not apply to features that may come into existence after the date of the first newspaper notice of the filing of a permit application under § 287.151 (relating to public notice by applicant).

(e) This section does not apply to features that may come into existence after the date of the first newspaper notice under this subsection if the following apply:

(1) The person or municipality publishes a notice of intent to file an application for a residual waste disposal impoundment permit. The notice, which is separate from the newspaper notice required by § 287.151, shall be published once a week for 3 consecutive weeks in a newspaper of general circulation in the area where the facility is proposed to be located. The notice shall include a brief description of the location and proposed operation of the facility.

(2) The person or municipality files an administratively complete application under § 287.202 (relating to completeness review) with the Department within 1 year from the date of the first newspaper notice under this subsection.

(f) The Department may waive the isolation distances in this section for areas that were included in the permit area of a permit application that was determined by the Department to be administratively complete before July 4, 1992.

Source

The provisions of this § 289.522 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226777) to (226779).

Cross References

This section cited in 25 Pa. Code § 287.111 (relating to notice by impoundments and unpermitted processing or disposal facilities); 25 Pa. Code § 289.113 (relating to maps and related information); 25 Pa. Code § 289.521 (relating to limitations); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.523. Minimum requirements for acceptable waste.

(a) A person or municipality may not dispose of residual waste at a Class II residual waste disposal impoundment unless the waste meets the following criteria:

(1) The residual waste may not be of a type from which the maximum concentration obtained for a contaminant, based on a chemical analysis of its leachate submitted under § 287.132 (relating to chemical analysis of waste), and approved by the Department, exceeds 50 times the waste classification standard for that contaminant. If analytical quantification limits prevent determination of the acceptability of a residual waste under this paragraph, the Department may consider the total analysis of the waste as well as the physical and chemical characteristics of the contaminant in making a determination of acceptability of the waste at the facility.

(2) Notwithstanding the limitation in paragraph (1), the Department may authorize the disposal of residual waste at a monofill if the waste is of a type from which the maximum concentration obtained for a contaminant, based on a chemical analysis of its leachate submitted under § 287.132, exceeds 50 times the SMCL for that contaminant if the SMCL is the waste classification standard for the contaminant. The Department may authorize the disposal of

the waste only upon a demonstration that disposal of the waste at the facility will not cause groundwater degradation that exceeds the SMCL for a contaminant at a monitoring point or groundwater degradation that exceeds background levels at the property boundary for the contaminant.

(3) Even if a waste meets the requirements of this section, and the Department has previously authorized the disposal of the waste at the facility, the Department may require that the waste be disposed at a Class I disposal impoundment if one of the following apply:

(i) Monitoring data indicate that the waste or contaminants of the waste are migrating from the impoundment.

(ii) The approved chemical and leaching analysis no longer accurately predicts the leachability of the waste.

(4) The Department may authorize a facility which disposes of a waste in accordance with a permit under this article to continue to dispose of the waste at the facility although a waste classification standard for a contaminant has been changed so that the waste would no longer meet the criteria for disposal of the waste at the facility under paragraph (1), if the operator of the facility demonstrates to the Department's satisfaction that disposal of the waste will not cause groundwater degradation that exceeds the waste classification standard for a contaminant at a monitoring point or groundwater degradation that exceeds background levels at the property boundary for a contaminant.

(5) If more than one type of waste or waste contaminants are identified in the chemical and leaching analysis, the waste shall be disposed at the most protective type of facility required for the waste types and waste contaminants identified in the analysis.

(6) Neither residual waste nor leachate from the waste will adversely affect the ability of the liner system to prevent groundwater degradation.

(7) Leachate generated from the residual waste will be treated by the facility's leachate treatment system in accordance with applicable laws and in a manner that will protect public health, safety and the environment.

(8) The residual waste will not react, combine or otherwise interact with other waste that is or will be disposed at the facility in a manner that will adversely affect the ability of the liner system to prevent groundwater degradation.

(9) The residual waste shall have a pH between 5.0 and 12.5 unless otherwise specified by the Department in the permit. The pH may be adjusted to meet this requirement.

(10) The residual waste may not be allowed to react, combine or otherwise interact with other waste or materials to endanger public health, safety and welfare or the environment by generating extreme heat or pressure, fire or explosion, or toxic mists, fumes, dusts or vapors. The potential for this interaction shall be determined using the procedure set forth in the EPA's "A Method

for Determining the Compatibility of Hazardous Wastes” (EPA-600/2-80 076) or another equivalent method approved by the Department in the permit.

(11) The physical characteristics of the waste will not cause or contribute to structural instability or other operating problems at the site.

(b) A person or municipality may not store or dispose of municipal waste or special handling waste at a Class II residual waste disposal impoundment.

(c) A person or municipality may not dispose of hazardous waste at a Class II residual waste disposal impoundment.

(d) A person or municipality may not dispose of solid waste at a Class II residual waste disposal impoundment if the Toxic Substances Control Act (15 U.S.C.A. 2601—2629) prohibits the disposal of the solid waste at the residual waste disposal impoundment.

Source

The provisions of this § 289.523 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226779) to (226781).

Cross References

This section cited in 25 Pa. Code § 289.132 (relating to operation plan); 25 Pa. Code § 289.211 (relating to waste analysis); 25 Pa. Code § 289.515 (relating to waste classification plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 299.143 (relating to application requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

ADDITIONAL OPERATING REQUIREMENTS— LINER SYSTEM

§ 289.531. Scope and requirements.

(a) A person or municipality operating a Class II residual waste disposal impoundment shall design, construct, operate and maintain a liner system for disposal areas of the facility or components thereof in accordance with this section and §§ 289.532—289.538.

(b) The liner system for a Class II residual waste disposal impoundment shall include the following elements:

(1) The subbase, which is the prepared layer of soil or earthen material upon which the remainder of the liner system is constructed.

(2) The leachate detection zone, which is a prepared layer placed on top of the subbase and upon which the liner is placed, and in which a leachate detection system is located.

(3) The composite liner, which is a continuous layer of synthetic material over earthen material, placed on the leachate detection zone.

(4) The protective cover and leachate collection zone, which is a prepared layer placed over the liner in which a leachate collection system is located.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); and 25 Pa. Code § 289.521 (relating to limitations).

§ 289.532. General limitations.

(a) The bottom of the subbase of the liner system cannot be in contact with the seasonal high table or perched water table without the use of groundwater pumping systems.

(1) Soil mottling may indicate the presence of a seasonal high water table.

(2) Drainage systems may be utilized to prevent contact between the bottom of the subbase of the liner system and the seasonal high water table or perched water table. The operator may not use a drainage system if the system is likely to adversely affect the quality or quantity of water provided by a public or private water supply, even if a replacement supply is available under § 289.255 (relating to water supply replacement). The drainage system shall be limited to drain tile, piping, french drains or equivalent methods.

(b) For unconfined aquifers, at least 8 feet shall be maintained between the bottom of the subbase of the liner system and the regional groundwater table. The regional groundwater table may not be artificially lowered.

(c) For confined aquifers, at least 8 feet shall be maintained between the bottom of the subbase of the liner system and the top of the confining layer or the shallowest level below the bottom of the subbase where groundwater occurs as a result of upward leakage from natural or other preexisting causes. The integrity of the confining layer may not be compromised by excavation.

(d) If the approved design plans provide for the placement of an additional adjacent liner, the following apply:

(1) Waste may not be placed within 25 feet of an edge of the liner.

(2) The edge of the liner shall be protected by approved soil cover, or another material approved in the permit, until additional liner is added.

(e) If the approved design plans do not provide for the placement of additional adjacent liner, waste may not be placed within 4 feet of an edge of the liner.

(f) The edge of the liner shall be clearly marked.

Source

The provisions of this § 289.532 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226782) to (226783).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.531 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.533. Subbase.

(a) The subbase shall meet the following performance standards. The subbase shall:

- (1) Bear the weight of the liner system, waste, waste cover material and equipment operating on the facility without causing or allowing a failure of the liner system.
- (2) Accommodate potential settlement without damage to the liner system.
- (3) Be a barrier to the transmission of liquids.
- (4) Cover the bottom and sidewalls of the facility.

(b) Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the subbase shall meet the following design requirements. The subbase shall:

- (1) Consist of an upper 6 inches that is:
 - (i) Compacted to a standard proctor density of at least 95%.
 - (ii) No more permeable than 1.0×10^{-5} cm/sec., based on laboratory and field testing.
 - (iii) Hard, uniform, smooth and free of debris, rock fragments, plant materials and other foreign material.
- (2) Have a minimum bearing capacity of 4,500 pounds per square foot plus the total applied load in pounds per square foot.
- (3) Have a slope of at least 2% and no more than 25%.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.531 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.534. Leachate detection zone.

(a) The leachate detection zone shall meet the following performance standards. The leachate detection zone shall:

- (1) Rapidly detect and collect liquid entering the leachate detection zone, and rapidly transmit the liquid to the leachate treatment system.
- (2) Withstand chemical attack from waste or leachate.
- (3) Withstand anticipated loads, stresses and disturbances from overlying waste, waste cover materials and equipment operation.
- (4) Function without clogging.
- (5) Prevent the liner from puncturing, cracking, tearing, stretching or otherwise losing its physical integrity.
- (6) Cover the bottom and sidewalls of the facility.

(b) Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the leachate detection zone of a liner system shall meet the following design requirements. The leachate detection zone shall:

- (1) Be at least 12 inches thick.
 - (2) Contain no material exceeding 0.5 inches in particle size.
 - (3) Create a flow zone between the subbase and the liner equal to or more permeable than 1.0×10^{-2} cm/sec. based on laboratory testing, and when required by the Department, field testing.
 - (4) Contain a perforated piping system capable of detecting and intercepting liquid within the leachate detection zone and conveying the liquid to a collection sump for storage, processing or disposal. The sump shall be separate from the leachate collection sump and shall be of a sufficient size to transmit leachate that is generated. The piping system shall also meet the following requirements:
 - (i) The slope, size and spacing of the piping system shall assure that liquids drain from the leachate detection zone.
 - (ii) The pipes shall be installed primarily perpendicular to the flow and shall have a minimum postsettlement grade of at least 2%.
 - (iii) The minimum diameter of the perforated pipe shall be 4 inches with a wall thickness of Schedule-80 or greater as specified by ASTM or equivalent.
 - (iv) The pipes shall be cleaned and maintained as necessary.
 - (5) Have a minimum bottom slope of 2%.
 - (6) Contain noncarbonate stones or aggregates with no sharp edges.
- (c) The operator shall monitor the leachate detection zone weekly to determine whether liquid is flowing from the zone.
- (d) If liquid is flowing from the leachate detection zone, the operator shall immediately do the following:
- (1) Notify the Department in writing.
 - (2) Estimate, on a weekly basis, the volume of liquid flowing from the zone.
 - (3) Sample and analyze the liquid quarterly, unless a more frequent basis is required by the Department, for pH, specific conductivity, total organic carbon, chlorides and other parameters specified in the permit. The Department may also require sampling and analysis for other constituents expected to be found in the waste.
 - (4) Provide written copies of flow and analysis data to the Department.
- (e) If leachate flow is greater than 100 gallons per acre of lined collection area per day, or more than 10% of leachate generation the operator shall do the following:

- (1) Submit to the Department a plan within 30 days for locating the source of leachate in the leachate detection zone, and for determining the severity and cause of leachate penetration.
- (2) Implement the plan upon Department approval, and complete the plan in a reasonable time not to exceed 6 months.
- (3) Submit to the Department within 45 days after completion of the plan a report containing the new data collected, analysis of the data and recommendations concerning a remedial plan.
- (4) Conduct quarterly sampling and analysis for the parameters in § 289.264(a)(1) (relating to sampling and analysis), and submit copies of the results of the analysis to the Department.
- (f) If sampling results indicate the presence of constituents at concentrations that could result in groundwater degradation, the operator shall submit the following to the Department:
 - (1) A remedial plan for controlling the source of leachate in the leachate detection zone and correcting a malfunction or defect in that liner system, and implement the plan upon Department approval.
 - (2) A permit modification application under § 287.222 (relating to permit modification) for increased groundwater monitoring, giving consideration to monitoring frequency, number of wells and other factors, and conduct increased groundwater monitoring upon Department approval of the application.

Source

The provisions of this § 289.534 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226783) to (226785).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.531 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.535. Liner.

- (a) *Standards of performance.* The liner shall meet the following standards of performance:
 - (1) The liner shall prevent the migration of leachate through the liner to the greatest degree that is technologically possible.
 - (2) The effectiveness of the liner in preventing the migration of leachate may not be adversely affected by the physical or chemical characteristics of solid waste, solid waste constituents or leachate from the facility.

- (3) The liner shall be resistant to physical failure, chemical failure, and other failure from the sources identified under § 289.512(d) (relating to liner system and leachate control plan).
- (4) The liner shall cover the bottom and sidewalls of the facility.
- (b) *Alternative design requirements.* Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the liner shall meet, at the minimum, the requirements of Appendix A, Table II (relating to minimum liner design standards).
- (c) *Requirements.* A liner shall meet the following standards. A liner shall include:
- (1) An upper component made of a manufactured geosynthetic liner that meets the following requirements independently of the composite component:
 - (i) The upper component is no more permeable than 1.0×10^{-7} cm/sec. based on laboratory testing.
 - (ii) The upper component is installed according to manufacturer's specifications under the supervision of an authorized representative of the manufacturer. An approved assurance and quality control program shall be implemented in the field during the installation of the liner.
 - (iii) The upper component is inspected for uniformity, damage and imperfections during construction and installation.
 - (2) A composite component made of earthen material that meets the following requirements independent of the upper component:
 - (i) The composite component is no more permeable than 1.0×10^{-6} cm/sec., based on laboratory testing and field testing.
 - (ii) The composite component is designed, installed and maintained according to a quality assurance and quality control plan approved by the Department.
 - (iii) The composite component is inspected for uniformity, damage and imperfections during construction and installation.
 - (iv) The composite component shall be constructed in compacted lifts not exceeding 6 inches in depth. A lift shall be scarified before placement of the next lift.
 - (3) The two components of the composite liner shall be designed, constructed and maintained to provide a compression connection, or direct continuous contact, between them.
- (d) *Compacted lifts.* Liners made of clay, bentonite and bentonite-like materials shall be constructed in compacted lifts not exceeding 6 inches in depth. A lift shall be scarified before placement of the next lift.

Source

The provisions of this § 289.535 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226785) to (226787).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.531 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.536. Protective cover.

(a) The protective cover shall meet the following performance standards. The protective cover shall:

- (1) Protect the primary liner from physical damage from stresses and disturbances from overlying wastes, waste cover materials and equipment operation.
- (2) Protect the leachate collection system within the protective cover from stresses and disturbances from overlying wastes, waste cover materials and equipment operation.
- (3) Allow the continuous and free flow of leachate into the leachate collection system within the protective cover.
- (4) The protective cover shall cover the bottom and sidewalls of the facility.

(b) Unless alternative design requirements to meet the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the protective cover shall meet the following design requirements. The protective cover shall be:

- (1) Comprised of clean earth material that contains no aggregate, rocks, debris, plant material or other solid material larger than 1/2 inch in diameter, and no material with sharp edges.
- (2) Graded, uniformly compacted and smooth.
- (3) As permeable as, or more permeable than 1.0×10^{-2} cm/sec., based on laboratory testing, and shall allow the free flow of liquids and leachate passing through or generated by solid waste. Field testing shall also be conducted if required by the Department.
- (4) At least 18 inches thick.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.531 (relating to scope and requirements); and 25 Pa. Code § 299.144 (relating to operating requirements).

§ 289.537. Leachate collection system within protective cover.

(a) The leachate collection system within the protective cover shall meet the following performance standards. The leachate collection system shall:

- (1) Ensure that free flowing liquids and leachate will drain continuously from the protective cover to the leachate treatment system.
 - (2) Withstand chemical attack from leachate.
 - (3) Withstand anticipated loads, stresses and disturbances from overlying waste, waste cover materials and equipment operation.
 - (4) Function without clogging.
 - (5) Cover the bottom and sidewalls of the facility.
- (b) Unless alternative design requirements to the performance standards in subsection (a) are approved as part of the permit under § 287.231 (relating to equivalency review procedure), the leachate collection system with the protective cover shall comply with the following design requirements.
- (1) The leachate collection system shall include a perforated piping system which is capable of intercepting free flowing liquids and leachate within the protective cover and conveying them to a collection sump for storage, processing or disposal. The collection sump shall be of sufficient size to transmit leachate that is generated and shall be capable of automatic and continuous functioning.
 - (2) The perforated piping system shall be sloped, sized and spaced to assure that free flowing liquids and leachate will drain continuously from the protective cover to the collection sump or point.
 - (3) The minimum diameter of the perforated pipes shall be 6 inches with a wall thickness of Schedule-80 or greater as specified by ASTM, or equivalent.
 - (4) The leachate collection system shall contain stones or aggregates.
 - (5) The pipes shall be installed primarily perpendicular to the flow, and shall have a minimum postsettlement grade of at least 2%.
 - (6) The leachate collection system shall be cleaned and maintained as necessary.
 - (7) The leachate collection system shall have a minimum bottom slope of 2%.
- (c) The Department may, in the permit, authorize the operator to delay activation of the leachate collection system until closure if the following are met:
- (1) The impoundment is designed so that liquid covers waste during the life of the facility.
 - (2) Waste disposed at the impoundment are free draining.
 - (3) Solidification is solely dependent on gravity drainage.
 - (4) Test data or historical information, or both, from impoundments that received similar wastes show that the requirements of § 289.212(b) (relating to waste solidification) will be met within 2 years after waste disposal ceases.

Source

The provisions of this § 289.537 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226787) to (226788) and (255119).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.212 (relating to waste solidification); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.531 (relating to scope and requirements); and 25 Pa. Code § 289.555 (relating to leachate collection and storage).

§ 289.538. Initial placement of solid waste.

The first 8 feet of solid waste placed on the protective cover may not contain material capable of penetrating or puncturing the protective cover.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.512 (relating to liner system and leachate control plan); 25 Pa. Code § 289.521 (relating to limitations); and 25 Pa. Code § 289.531 (relating to scope and requirements).

**ADDITIONAL OPERATING REQUIREMENTS—
LEACHATE TREATMENT****§ 289.551. Scope.**

A person or municipality operating a Class II residual waste disposal impoundment shall comply with the requirements of this section and §§ 289.552—289.557.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.521 (relating to limitations); and 25 Pa. Code § 289.552 (relating to basic treatment methods).

§ 289.552. Basic treatment methods.

(a) Except as otherwise provided in this section, leachate shall be collected and handled by direct discharge into a permitted publicly-owned treatment works, following pretreatment, if pretreatment is required by Federal, State or local law or by discharge into another permitted treatment facility.

(b) Leachate may be collected and handled by onsite treatment and discharged into a receiving stream under a permit issued by the Department under The Clean Streams Law and regulations thereunder, if the Department approves this method in the permit.

(c) Leachate may be collected and handled by spray irrigation following treatment. This method will not be allowed unless, at a minimum, the following conditions are met:

- (1) Discharge into a publicly-owned treatment works or other permitted treatment facility is not practicable.
- (2) Discharge of treated leachate into a receiving stream in a manner consistent with The Clean Streams Law and the regulations thereunder is not attainable.
- (3) Spray irrigation will not cause air or water pollution.
- (d) If the leachate is hazardous, it shall be managed under Article VII (relating to hazardous waste management).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.514 (relating to modifications of leachate treatment plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.551 (relating to scope); 25 Pa. Code § 289.553 (relating to leachate transportation); and 25 Pa. Code § 289.554 (relating to leachate recirculation).

§ 289.553. Leachate transportation.

- (a) For the first 3 years following initial discharge of leachate into the collection and handling system, leachate may be handled by vehicular transportation to, and leachate treatment at, an offsite treatment facility. Except as provided in § 289.514 (relating to modifications of leachate treatment plan), the operator shall operate a leachate collection and treatment facility as provided in § 289.552 (relating to basic treatment methods) within 3 years following the detection of leachate in the collection or handling system.
- (b) Vehicular transportation of leachate to an offsite treatment facility will not be allowed unless the following requirements are met:
 - (1) Prior to the disposal of waste at the facility, the operator shall have in place at the site a permitted and fully operational system for fully pretreating the leachate in accordance with applicable pretreatment requirements of the primary and backup offsite treatment facilities.
 - (2) One of the following applies:
 - (i) Direct discharge into a publicly-owned treatment works or other permitted treatment facility is attainable within 3 years.
 - (ii) Discharge of treated leachate into a receiving stream in a manner consistent with The Clean Streams Law and regulations thereunder is attainable within 3 years.
 - (3) A leachate recirculation system under § 289.554 (relating to leachate recirculation) is constructed and fully approved.
 - (4) The disposal impoundment operator has a valid contract for the treatment of leachate at an offsite treatment facility for up to 3 years. The contract shall prohibit the treatment facility operator from refusing to treat leachate without 6 months' advance written notice to the disposal impoundment operator.

(5) The offsite treatment facility to which leachate would be transported is operating in compliance with The Clean Streams Law and regulations thereunder, and is otherwise capable of accepting and treating leachate from the disposal impoundment.

(c) If the operator loses the ability to dispose of leachate at the facility and is unable to secure an alternate offsite treatment facility acceptable to the Department within 15 days from loss of its approved treatment facility, implementation of the treatment plan required by § 289.552 shall begin immediately.

(d) If the operator cannot immediately implement a treatment plan under § 289.552 to comply with this article, The Clean Streams Law and regulations thereunder, and cannot locate an alternative offsite treatment facility within 15 days, the operator shall cease accepting waste at the facility for storage, processing or disposal. Cessation shall continue until the operator obtains an acceptable means of treating its leachate.

(e) Notwithstanding other provisions of this subchapter, the operator shall have in place at the site a permitted and fully operational system for treating leachate at least 3 full years before closure of the facility.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.514 (relating to modifications of leachate treatment plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.551 (relating to scope); and 25 Pa. Code § 289.554 (relating to leachate recirculation).

§ 289.554. Leachate recirculation.

(a) In conjunction with the treatment methods in §§ 289.552 and 289.553 (relating to basic treatment methods; and leachate transportation), recirculation of leachate generated at the facility may be utilized if the following conditions exist:

(1) The area subject to leachate recirculation previously has been filled with solid waste.

(2) There is sufficient residual waste capacity to absorb the leachate.

(3) The area subject to leachate recirculation is underlain by a leachate collection system.

(4) Leachate recirculation is conducted with an approved piping system located under the intermediate cover, and causes no odors, runoff or ponding.

(5) The leachate is not a hazardous waste.

(6) The leachate will not interfere with the solidification of waste at the impoundment.

(b) An alternate leachate recirculation method may be used if approved by the Department.

Source

The provisions of this § 289.554 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial pages (226791) to (226792).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.521 (relating to limitations); 25 Pa. Code § 289.551 (relating to scope); and 25 Pa. Code § 289.553 (relating to leachate transportation).

§ 289.555. Leachate collection and storage.

(a) Impoundments or tanks for storing leachate before or during treatment shall be constructed in accordance with §§ 299.122, 299.142 and 299.145 (relating to storage tanks; general requirements; and failure).

(b) An onsite leachate storage system shall be part of each leachate treatment method used by the operator. The storage system shall contain impoundments or tanks for storage of leachate. For noncaptive facilities, the tanks or impoundments shall have a storage capacity at least equal to the maximum expected production of leachate for a 30-day period for the life of the facility estimated under § 289.513 (relating to leachate treatment plan). For captive facilities, the tank or impoundment shall have sufficient storage capacity to ensure proper operation of the treatment facility in accordance with the approved leachate treatment plan and shall meet the performance standards in § 289.537(a)(1) (relating to leachate collection system within protective cover). No more than 25% of the total leachate storage capacity may be used for flow equalization on a regular basis.

(c) The impoundments or tanks shall be aerated as necessary to prevent and control odors. Impoundments or tanks shall each have a capacity of at least 250,000 gallons, unless otherwise approved by the Department.

(d) The storage capacity of impoundments and tanks at a site shall be increased, if additional storage is required, prior to each major phase of construction and as otherwise necessary.

(e) Leachate storage capacity may not be considered to include leachate that may have collected in or on the liner system.

(f) Necessary collection and containment systems shall be installed prior to the deposition of solid waste at the site. A leachate treatment or handling system approved by the Department under § 289.513 shall be installed or ready for use prior to the storage or disposal of solid waste at the site.

(g) For areas permitted after January 13, 2001, all underground pipes used for the transport of leachate from the liner system to the leachate storage impoundments or tanks shall be equipped with secondary containment or comply with § 245.445 (relating to methods for release detection for piping). Secondary containment shall be designed, constructed and installed to direct any release to an area that can be inspected for leaks.

Source

The provisions of this § 289.555 amended January 12, 2001, effective January 13, 2001, 31 Pa.B. 235. Immediately preceding text appears at serial page (226792).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.521 (relating to limitations); and 25 Pa. Code § 289.551 (relating to scope).

§ 289.556. Leachate analysis and sludge handling.

(a) Upon commencement of leachate flow from the facility, the operator shall sample, analyze and maintain a record of the following:

(1) On a daily basis, the average flow rate and volume of leachate flowing from the disposal impoundment into the leachate storage and treatment system.

(2) On a quarterly basis, unless otherwise specified in the permit the chemical composition of leachate flowing into the leachate treatment system. The analysis shall be sufficient to determine the impact of leachate on the liner system, the effectiveness of the leachate treatment system, the need for modification of the groundwater monitoring system or the effluent limitations in an NPDES permit, and the actual characteristics of leachate from the waste disposed at the facility. For the purpose of the analysis, the leachate sample shall be collected from the influent storage tank or impoundment and shall be representative of the average mixed influent quality.

(b) Sludges resulting from the treatment of leachate may be disposed at the facility if the sludges are not hazardous under Article VII (relating to hazardous waste management).

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.264 (relating to sampling and analysis); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.514 (relating to modifications of leachate treatment plan); 25 Pa. Code § 289.521 (relating to limitations); and 25 Pa. Code § 289.551 (relating to scope).

§ 289.557. Departmental notice and remedial action.

The operator shall immediately notify the Department and describe remedial steps to be taken whenever:

(1) Operation of the treatment facility in accordance with the approved plan cannot prevent violation of the terms of its permits, The Clean Streams Law or regulations thereunder.

(2) The facility is generating a quality or quantity of leachate that exceeds the design capacity of the onsite pretreatment or treatment system.

(3) The contractual agreement for leachate treatment by an offsite treatment system is breached or expired.

(4) The quality or quantity of waste being disposed at the site changes from that in the permit.

Cross References

This section cited in 25 Pa. Code § 287.114 (relating to interim operational requirements for unpermitted processing or disposal facilities); 25 Pa. Code § 287.116 (relating to interim operational requirements); 25 Pa. Code § 289.513 (relating to leachate treatment plan); 25 Pa. Code § 289.514 (relating to modification of leachate treatment plan); and 25 Pa. Code § 289.551 (relating to scope).

APPENDIX A
TABLE I
MINIMUM LINER DESIGN STANDARDS

<i>Liner Material</i>	<i>Function</i>	<i>Minimum Field Thickness (Units as Specified)</i>	<i>Liner Density (Tests as Specified)</i>	<i>Remarks</i>
Geosynthetics	Primary or Secondary Liner	30 mil	N/A	1. A greater thickness may be required depending upon the recommendations of the manufacturer. HDPE liners shall be at least 60 mil.
Geosynthetics	Cap	30 mil	N/A	1. A greater thickness may be required depending upon the recommendations of the manufacturer.
Natural & Remolded Clay	Secondary Liner, Cap, Composite Component	2 feet 2 feet 1 foot	>=90%* >=90%* >=90%*	1. Minimum of 30% fines by weight less than 0.074 mm particle size (#200 sieve). 2. Plasticity Index greater than or equal to 10. 3. No coarse fragments greater than 3/4 inch in diameter.
Sodium bentonite & Bentonite-like materials/soil mixtures	Secondary Liner, Cap, Composite Component	2 feet 2 feet 1 foot	>=90%* >=90%* >=90%*	1. Minimum of 8% powdered sodium bentonite or manufacturer's recommendations, whichever is greater. 2. No coarse fragments greater than 3/4 inch in diameter. 3. No organic matter. 4. Coarse fragment content (those materials greater than 4.76 mm. in diameter) shall not exceed 10% by weight.
Geosynthetic clay liner (GCL)	Composite Component	N/A	N/A	1. Minimum of 3/4 pound of powdered or granular sodium bentonite per square foot.

* Percentage of maximum when using Standard Proctor method of design (Pa. PTM No. 106, Method B).

Cross References

This table is cited in 25 Pa. Code § 289.242 (relating to cover); 25 Pa. Code § 289.434 (relating to secondary liner); and 25 Pa. Code § 289.436 (relating to primary liner).

**TABLE II
MINIMUM LINER DESIGN STANDARDS**

Liner Material	Function	Minimum Field Thickness (Units as Specified)	Liner Density (Tests as Specified)	Remarks
Geosynthetics	Liner Cap	30 mil	N/A	1. A greater thickness may be required depending upon the recommendations of the manufacturer. HDPE liners shall be at least 60 mil.
Natural & Remolded Clay	Cap, Composite Component	2 feet 1 foot	>=90%* >=90%*	1. Minimum of 30% fines by weight less than 0.074 mm particle size (#200 sieve). 2. Plasticity Index greater than or equal to 10. 3. No coarse fragments greater than 3/4 inch in diameter.
Sodium bentonite & Bentonite-like materials/soil mixtures	Cap, Composite Component	2 feet 1 foot	>=90%* >=90%*	1. Minimum of 8% powdered sodium bentonite or manufacturer's recommendations, whichever is greater. 2. No coarse fragments greater than 3/4 inch in diameter. 3. No organic matter. 4. Coarse fragment content (those materials greater than 4.76 mm. in diameter), shall not exceed 10% by weight.
Geosynthetic Clay Liner (GCL)	Composite Component	N/A	N/A	1. Minimum of 3/4 pound of powdered or granular sodium bentonite per square foot.

* Percentage of maximum when using Standard Proctor method of design (Pa. PTM No. 106, Method B).

Cross References

This table cited in 25 Pa. Code § 289.535 (relating to liner).

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