NEBRASKA ADMINISTRATIVE CODE

Title 132 - NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

Chapter 3 - CRITERIA FOR MUNICIPAL SOLID WASTE DISPOSAL AREAS, DELISTED WASTE DISPOSAL AREAS, INDUSTRIAL WASTE DISPOSAL AREAS and LAND APPLICATION UNITS FOR REPEATED DISPOSAL OR TREATMENT OF SPECIAL WASTES

001 Applicability**.** The requirements of this chapter apply to all municipal solid waste disposal areas, delisted waste disposal areas, industrial waste disposal areas, and land application units for repeated disposal or treatment of special wastes required to obtain a permit pursuant to Chapter 2, 001.

001.01 In addition to the other requirements of these regulations for delisted waste disposal areas, the Department may place such conditions and restrictions upon a permit issued or renewed under these regulations as deemed necessary to protect public health or the environment.

002 Locational Criteria. New solid waste disposal areas and lateral expansions of existing solid waste disposal areas listed in 001 shall be located in accordance with the standards as described in this section. The application shall include documentation verifying that the solid waste disposal area complies with the following criteria.

002.01 A solid waste disposal area shall not be located in an area where the Department finds that the solid waste activities will have a detrimental effect on the waters of the state based on the following criteria:

002.01A Current and projected use of water resources in the potential zone of influence of the site;

002.01B Ground water elevation and proposed separation between the lowest point of the lowest cell and the predicted maximum water table elevation; areas having high ground water tables may be restricted to landfill operations which will maintain a safe vertical distance between deposited refuse and the maximum water table elevation;

002.01C Potential interrelationship of the local aquifers, and surface waters based on historical records or other sources of information; and

002.01D Background and initial quality of water resources in the potential zone of influence of the site.

002.02 The application shall include a description of the:

002.02A Soil and bedrock to a depth adequate to allow evaluation of the water quality protection provided by the soil and bedrock;

002.02B Potential for leachate generation, and of pollution of the waters of the state;

002.02C Ground water condition, including ground water flow below and adjacent to the proposed facility, with an appraisal of the effect of the facility on ground water and surface waters;

002.02D Name of and distance to nearby surface waters; and

002.02E Land use and population density of the proposed facility and of the area surrounding the facility within one mile of the facility boundaries.

002.03 No person shall locate a solid waste disposal area within one thousand (1,000) feet from the nearest edge of an existing right-of-way of any state, interstate or federal highway unless the active area is screened by natural objects, plantings, fences, or other appropriate means so as to not be visible from such highway.

002.04 Airport Proximity.

002.04A The owner or operator of a new or existing solid waste disposal area shall demonstrate that the solid waste disposal area does not pose a bird hazard to aircraft and include the demonstration in the permit application if the solid waste disposal area is located within:

002.04A1 10,000 feet (3,048 meters) of any airport runway end used by turbojet aircraft; or

002.04A2 5,000 feet (1524 meters) of any airport runway end used by only piston-type aircraft.

002.04B An owner or operator who proposes to site a new solid waste disposal area or a lateral expansion of an existing solid waste disposal area within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft shall notify the affected airport and the Federal Aviation Administration and include documentation of the notification in the permit application.

002.04C An owner or operator of an industrial waste disposal area shall be exempt from the provisions of 002.04A and 002.04B of this section.

002.04D For purposes of this section:

002.04D1 "Airport" shall mean a public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

002.04D2 "Bird hazard" shall mean an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

002.05 Floodplains.

002.05A A new land application unit for repeated disposal or treatment of special wastes, municipal solid waste disposal area, or delisted waste disposal area, or a lateral or vertical expansion of these facilities, shall not be located in a 100-year flood plain.

002.05B An industrial waste disposal area, or a lateral or vertical expansion of these facilities, shall not be located in a 100-year flood plain, unless the owner or operator can demonstrate that the disposal area will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

002.06 Wetlands. A new solid waste disposal area or lateral expansion shall not be located in wetlands.

002.07 Unstable areas. An owner or operator of a new solid waste disposal area, existing solid waste disposal area, or lateral expansion located in an unstable area shall demonstrate in the permit application that engineering measures have been incorporated into the facility's design to ensure that the integrity of the containment systems of a solid waste disposal area will not be disrupted.

002.07A An owner or operator shall consider the following factors, at a minimum, when determining whether an area is unstable:

002.07A1 On-site or local soil conditions that may result in significant differential settling;

002.07A2 On-site or local geologic or geomorphologic features; and

002.07A3 On-site or local human-made features or events, both surface and subsurface.

002.07A4 For purposes of this section,

002.07A4(a) "Unstable area" shall mean a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the facility structural components responsible for preventing releases from the facility. This term may include poor foundation conditions, areas susceptible to mass movements, and Karst terranes.

002.07A4(b) "Poor foundation conditions" shall mean those areas where features exist which indicate that a natural or human-induced event may result in inadequate foundation support for the structural components of a solid waste management facility.

002.07A4(c) "Areas susceptible to mass movements" shall mean those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the solid waste disposal area, because of natural or human-induced events, results in the down slope transport of soil and rock material by means of gravitational influence.

002.07A4(c)(1) Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall.

002.07A4(d) "Karst terranes" shall mean areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

002.08 Fault area criteria for municipal solid waste disposal areas.

002.08A A new municipal solid waste disposal area or lateral expansion thereof, shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Department that an alternative setback distance of less than 200 feet will:

002.08A1 Prevent damage to the structural integrity of the solid waste disposal area; and

002.08A2 Be protective of human health and the environment.

002.08B For purposes of this section:

002.08B1 "Fault" shall mean a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side;

002.08B2 "Displacement" shall mean the relative movement of any two sides of a fault measured in any direction; and

002.08B3 "Holocene" shall mean the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

002.09 Seismic impact zone criteria for municipal solid waste disposal areas.

002.09A An owner or operator shall not locate a new municipal solid waste disposal area or lateral expansion thereof, in a seismic impact zone unless the owner or operator demonstrates in the permit application that:

002.09A1 All containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

002.09B For purposes of this section:

002.09B1 "Seismic impact zone" shall mean an area with a ten percent (10%) or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull will exceed 0.10g in 250 years.

002.09B2 "Maximum horizontal acceleration in lithified earth material" shall mean the maximum horizontal acceleration depicted on a seismic hazard map, with a ninety percent (90%) or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

002.09B3 "Lithified earth material" shall mean all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments.

002.09B3(a) This term does not include human-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

003 Design Criteria**.** The construction and design of all solid waste disposal areas shall:

003.01 Be protective of human health and the environment;

003.02 Not result in pollution of the waters of the state; and

003.03 In the case of a new solid waste disposal area or a lateral expansion of an existing solid waste disposal area, the construction and design plans shall include the following:

003.03A A description of the sequence of earth materials at the proposed facility to a depth sufficient to assure the reliability of the facility design;

003.03B A schedule of construction and a construction quality assurance plan as described in 003.04C;

003.03C Data obtained from soil samples taken from the proposed facility site which describe the soil classification, grain size distribution, permeability, compatibility, and ion-exchange properties of the subsurface materials for those strata which are essential to the design of the facility; and

003.03D If exploration holes are drilled to obtain data, information showing the manner of plugging and sealing such holes.

003.04 The construction and design plans for a new or a lateral expansion of an existing solid waste disposal area shall also include the following documentation. Land application units for repeated disposal or treatment of special wastes shall be exempt from the following requirements of this section.

003.04A A liner designed and constructed according to one of the following designs:

003.04A1 With a composite liner consisting of two components: the upper component must consist of a minimum 30-mil flexible membrane liner (FML); and the lower component must consist of at least a two (2) foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil. thick. The FML must be installed in direct and uniform contact with the compacted soil component; or

003.04A2 In accordance with a design approved by the Department, alternate designs shall ensure that the concentration values listed in Appendix III will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Department under 003.04D of this chapter. The Department shall consider the following factors when approving the design of liner systems:

003.04A2(a) The hydrogeologic characteristics of the facility and the surrounding land;

003.04A2(b) The climatic characteristics of the area;

003.04A2(c) The volume and type of waste to be deposited; and

003.04A2(d) The volume and physical and chemical characteristics of the leachate.

003.04A3 All required compacted soil components shall be constructed in lifts which do not exceed six (6) inches in thickness.

003.04A3(a) Uniform compaction of the lifts shall be assured through the use of appropriate equipment. Liners shall be supported by material of sufficient bearing strength to prevent subsidence and failure of any component. The bearing strength shall be documented through materials testing.

003.04B A leachate collection and treatment system shall be constructed where necessary to protect the waters of the state. Any required discharge permit shall be obtained from the Department. The leachate collection system shall be maintained as required by section 006.

003.04B1 Leachate collection systems shall be designed and constructed to maintain less than a 30-cm. depth of leachate over the liner.

003.04C A construction quality assurance plan for engineered containment systems and leachate collection systems shall be submitted with the application. The plan shall assure adequate construction and testing of the containment system components as called for in design specifications in the facility plan. The construction quality assurance plan shall be prepared and signed by a professional engineer registered in the State of Nebraska.

003.04D The relevant point of compliance noted in 003.04A2 of this chapter shall be located at the waste management unit boundary. The applicant may request the establishment of an alternate relevant point of compliance. The alternate relevant point of compliance shall be no more than 150 meters from the waste management unit boundary and shall be located on land owned by the solid waste disposal area permittee. The Department will base the decision to approve or deny the applicant's request upon consideration of the following factors:

003.04D1 The hydrogeologic characteristics of the facility and the surrounding land;

003.04D2 The volume and physical and chemical characteristics of the leachate;

003.04D3 The quantity, quality and direction of flow of ground water;

003.04D4 The proximity and withdrawal rate of the ground water users;

003.04D5 The availability of alternative drinking supplies;

003.04D6 Method of operation as outlined in the operational plan;

003.04D7 The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water, and whether the ground water is currently used or reasonably expected to be used for drinking water;

003.04D8 Public health, safety, and welfare effects; and

003.04D9 Practicable capability of the owner or operator.

003.04E Solid waste disposal area run-on/run-off control systems shall be designed, constructed and maintained to meet the following criteria:

003.04E1 A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a twenty-five (25) year storm; and

003.04E2 A run-off control system from the active portion of the landfill to collect and control, at least, the water volume resulting from a twenty-four (24) hour, twenty-five (25) year storm.

003.04E3 Surface water courses and run-off shall be diverted from the solid waste disposal area by devices such as trenches, conduits and proper grading to minimize infiltration and erosion of cover material. The solid waste disposal area shall be constructed and graded so as to promote rapid surface water run-off without excessive erosion. Excessive erosion shall mean an erosion rate of five (5) tons per acre per year, or more.

003.04E4 Run-off from the active portion of the solid waste disposal area shall be handled in accordance with 004.08.

003.04E5 Regrading shall be done as required during construction and after completion to avoid ponding of precipitation and to maintain cover material integrity. On-site drainage structures and channels shall be designed for at least a twenty-four (24) hour, twenty-five (25) year storm.

003.04F Plans for the construction of a municipal solid waste disposal area shall include the location and design of the gas control and monitoring system and include vents, barriers, or other control measures.

003.05 In the case of a land application unit for repeated disposal or treatment of special waste, the construction and design plans, in addition to section 003.01 to 003.03, shall include the following:

003.05A Measures taken to protect the ground water;

003.05B A description of the system for collection, containment, treatment and/or use of all waters within the site confines, which shall include:

003.05B1 A monitoring program for surface run-off from the site shall be developed and implemented to determine the need and extent of containment facilities; or

003.05B2 A containment facility shall be designed to contain all site run-off from a twenty-four (24) hour twenty-five (25) year storm.

003.06 Small landfill partial exemption. Owners and operators of new municipal solid waste disposal areas, existing municipal solid waste disposal areas and lateral expansions at which less than twenty (20) tons of municipal solid waste is disposed of daily, based on an annual average, may be exempt from Section 003.04A, so long as there is no evidence of existing ground water contamination from the solid waste disposal area, and the solid waste disposal area serves:

003.06A A community that has no practicable waste management alternative and the municipal solid waste disposal area is located in an area that annually receives less than or equal to 25 inches of precipitation.

003.06A1 Owners and operators of new municipal solid waste disposal areas, existing solid waste disposal areas, and lateral expansions that meet the criteria of Sections 003.06 and 003.06A shall demonstrate compliance with each criteria by placing documentation in the operating record, and providing copies of such documentation to the Director.

003.06B If, at any time, owners and operators who have asserted the exemption of Section 003.06, have knowledge of ground water contamination resulting from such new municipal solid waste disposal area, existing solid waste disposal area or lateral expansion, such owner or operator shall notify the Director of such contamination, in writing, and thereafter shall comply with all of section 003 of these regulations for all areas previously exempt.

004 Operational Criteria**.** Operations of all solid waste disposal areas shall be in accordance with the approved operational plan and Chapter 2 requirements.

004.01 A solid waste disposal area shall be designed and operated at all times so as to not constitute a hazard, or a threat to human health or the environment.

004.02 The operation of a solid waste disposal area shall include effective noise control and odor control programs.

004.03 Litter shall be controlled at solid waste disposal areas.

004.04 Disease vector control. An owner or operator of a solid waste disposal area shall prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

004.05 Air Criteria. An owner or operator of a solid waste disposal area shall ensure that the landfill unit does not violate any applicable requirements developed under Title 129 - Nebraska Air Quality Regulations. Measures shall be taken to control fugitive dust in accordance with Title 129 - Nebraska Air Quality Regulations during excavation, vehicle movement, placement of waste or covering deposits.

004.06 Procedures for Excluding the Receipt of Regulated Hazardous Waste or TSCA Regulated PCB Wastes. Owners or operators of solid waste disposal areas shall implement a program for detecting and preventing the acceptance or disposal of regulated hazardous wastes and TSCA regulated polychlorinated biphenyl (PCB) wastes. This program shall include, at a minimum:

004.06A Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes. Random inspections must be conducted on a minimum of one percent (1.0%) of the incoming loads per week or at least one load per week if less than one hundred (100) loads per week are received and processed;

004.06B Records of any inspections;

004.06C Training of facility personnel to recognize regulated hazardous wastes and PCB wastes; and

004.06D Notification to the Department if a regulated hazardous waste or PCB waste is discovered at the facility.

004.06E Any regulated hazardous or PCB waste identified must be removed and handled in accordance with procedures of the approved operating plan.

004.07 Access Requirements.

004.07A An owner or operator of a solid waste disposal area shall control public access and prevent unauthorized vehicular traffic and illegal dumping of wastes by using artificial barriers, natural barriers, or both, as appropriate, to protect human health and the environment.

004.07B Access roads to the site shall be maintained so as to be negotiable by vehicles.

004.07C Necessary measures shall be taken (supervision, placarding, fencing) to reduce trespassing.

004.07D The site shall be supervised to satisfy requirements of these rules and regulations; placarding or posting instructions shall be used as a supplement to on-site supervision.

004.07E Access to the site shall be permitted only during the hours when operating personnel are on the site.

004.07F All vehicular access points shall be equipped with gates that can be locked. Operating procedures shall be clearly listed on signs posted at the site entrance.

004.08 Surface Water Requirements. A solid waste disposal area shall not:

004.08A Cause a discharge of pollutants into waters of the state, including wetlands, that violate any requirements of Title 119 - Rules and Regulations Pertaining to the Issuance of Permits Under the National Pollutant Discharge Elimination System.

004.08B Cause the discharge of a non-point source of pollution to waters of the State that violate any requirement of an area-wide or state-wide water quality management plan that has been approved under section 208 or 319 of the Clean Water Act, as amended (33 U.S.C. 1251 et seq).

004.09 An owner or operator shall not accept solid waste at the facility if the disposal capacity has been reached. Solid waste shall only be placed in areas designated for disposal.

004.10 Liquids Restrictions.

004.10A Bulk or non-containerized liquid wastes shall not be placed in a solid waste disposal area unless:

004.10A1 The waste is household waste other than septic waste; or

004.10A2 The waste is leachate or gas condensate derived from the solid waste disposal area and the solid waste disposal area is designed with a composite liner and leachate collection system described in section 003.

004.10B Containers holding liquid waste may not be placed in a solid waste disposal area unless:

004.10B1 The container is a small container similar in size to that normally found in household waste;

004.10B2 The container is designed to hold liquids for use other than storage; or

004.10B3 The waste is household waste.

004.11 Any materials salvaged from the solid waste disposal area shall be removed daily or stored in a manner protective of the public health and environment.

004.12 The following activities shall be prohibited in conjunction with, or upon the site of a solid waste disposal area:

004.12A All scavenging operations;

004.12B All grazing or feeding of farm or domestic animals.

004.13 For any area where wastes will not be disposed for a period of one hundred eighty (180) days or longer, that area shall be covered with the required daily cover material and an additional twelve (12) inches of intermediate cover. Vegetative cover shall be established as soon as possible on these areas.

004.14 All completed areas of a solid waste disposal area shall be properly reclaimed with final cover pursuant to the requirements of Section 005 of these regulations.

004.15 On-site vegetation should be cleared only as necessary to conduct an efficient operation and to comply with these rules and regulations. Natural windbreaks, such as green belts, should be maintained where they will improve the appearance and operation of the disposal site.

004.16 Reasonable measures shall be taken to control dust during excavation, vehicle movement or covering deposits.

004.17 General operating requirements for municipal solid waste disposal areas and delisted waste disposal areas.

004.17A Litter Control Requirements.

004.17A1 Litter fences or other devices shall be used in the immediate vicinity of the working face or at other appropriate locations to control blowing litter.

004.17A2 At the end of each operating day, or more often as required, litter shall be removed from the fences and the grounds and incorporated

into the working face. Alternatively, the litter may be containerized for disposal on the next operating day.

004.17A3 Wastes that are easily moved by wind shall be covered as necessary throughout the operating day to prevent their becoming airborne and scattered.

004.17B Cover material requirements.

004.17B1 Except as provided in 004.17B2 of this chapter, an owner or operator of a municipal solid waste disposal area shall cover waste with six (6) inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

004.17B2 Alternative materials of an alternative thickness may be approved by the Department if an owner or operator demonstrates that the alternative material and thickness control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.

004.17B3 The Department may grant a temporary waiver from the requirements of 004.17B1 and 004.17B2 if an owner or operator demonstrates that there are extreme climatic conditions that make meeting such requirements impractical. All periods during which daily cover is not applied shall be entered in the operating record.

004.17B4 Owners and operators of delisted waste disposal areas shall cover deposited materials in the manner specified in the operational plan.

004.17B5 Owners and operators of industrial waste disposal areas shall cover deposited materials as needed to control disease vectors, fires, odors, blowing litter, fugitive dust, and scavenging.

004.17C Explosive Gases Control.

004.17C1 An owner or operator of a municipal solid waste disposal area shall ensure that:

004.17C1(a) The concentration of methane gas generated by the facility does not exceed twenty-five percent (25%) of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and

004.17C1(b) The concentration of methane gas does not exceed the lower explosive limit for methane at the solid waste disposal area property boundary.

004.17C2 Owners or operators of a municipal solid waste disposal area shall implement a routine methane monitoring program to ensure that the standards of 004.17C1 of this chapter are met. The monitoring program shall be included in the facility's operational plan.

004.17C2(a) The type and frequency of monitoring shall be determined by the following factors:

004.17C2(a)(1) Soil conditions;

004.17C2(a)(2) The hydrogeologic conditions surrounding the facility;

004.17C2(a)(3) The hydraulic conditions surrounding the facility; and

004.17C2(a)(4) The location of facility structures and property boundaries.

004.17C2(b) The minimum frequency of monitoring shall be quarterly.

004.17C3 If methane gas levels exceeding the limits specified in 004.17C1 of this chapter are detected, an owner or operator shall:

004.17C3(a) Immediately take all necessary steps to ensure protection of human health;

004.17C3(a)(1) Immediately notify the Department;

004.17C3(b) Within seven (7) days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health;

004.17C3(c) Within sixty (60) days of detection: the owner or operator shall implement a remediation plan for the methane gas releases which describes the nature and extent of the problem and the proposed remedy. Any proposed remedy must protect human health and the environment. A copy of the plan shall be placed in the operating record. The owner or operator shall notify the Department that the plan has been implemented.

004.17C3(d) The Department may establish alternative schedules for compliance with 004.17C3(b) and 004.17C3(c) of this chapter.

004.17D Solid waste received at a municipal solid waste disposal area shall be deposited in the smallest practical area and shall occur at the toe of the slope and in a manner which controls windblown materials. Waste may be deposited at locations other than the toe of the slope if site conditions do not allow access to the toe or instances for depositing waste at locations other than the toe of the slope are in the operational plan.

004.17D1 Unloading shall be supervised.

004.17D2 Sufficient equipment and personnel shall be available to operate the solid waste disposal area according to the approved plan.

004.17D3 Arrangements shall be made for access to back up equipment within a reasonable time.

004.17D4 Leachate collections systems shall operate according to operational plan. Leachate shall be collected and transported to a waste water treatment facility or treated as indicated in Section 004.10A2.

004.17D5 Dead animals, carcasses, or parts thereof may be placed in a municipal solid waste disposal area, with the following exception:

004.17D5(a) Diseased animals shall be disposed pursuant to the requirements of Neb. Rev. Stat. §54-744.

004.18 The operational plan for a solid waste disposal area shall include a description of the methods of operations which comply with the requirements of 004.01 to 004.17. The operational plan shall also include:

004.18A A description of the days and hours of operations;

004.18B A description of the number and duties of employees;

004.18C A listing of sources and types of waste to be received; and an estimate of daily quantity of wastes to be received; origin of wastes to be received; and load inspection techniques;

004.18D Numbers, type and size of equipment on site as well as provisions for obtaining back up equipment, if necessary;

004.18E A contingency plan for addressing reasonably foreseeable events including, but not limited to, wet weather, high winds, frozen conditions, fires, or natural disaster;

004.18F A schedule of filling; methods and compaction of wastes; and a phased site development plan; and

004.18G The types and sources of daily, intermediate, and final cover to be used.

004.19 Additional operational requirements to be included in the operational plan for land application units for repeated disposal or treatment of special wastes shall include:

004.19A Methods of operation shall be described, including windrow, static pile or other method, and added to the operational plan;

004.19B If necessary, chemical analysis of the materials to be land applied; and

004.19C If determined necessary by the Department, provisions for at least annual laboratory analysis of underlying soils for leachate detection.

005 Closure criteria**.** Owners or operators of solid waste disposal areas shall close according to the approved closure plan, and shall install the final cover within six months of the last receipt of waste.

005.01 Those solid waste disposal areas, receiving waste after October 1, 1993, shall close all areas which have not received final cover, in accordance with the requirements of sections 005.01A to 005.01E below.

005.01A A final cover system shall be installed which shall be comprised of an erosion layer underlain by an infiltration layer as follows:

005.01A1 The infiltration layer shall be comprised of a minimum of eighteen (18) inches of earthen material that has a permeability less than or equal to the permeability of the bottom liner system or natural subsoil present, or a permeability no greater than $1x10^{-5}$ centimeters per second, measured at the site, whichever is less; and

005.01A2 The erosion layer shall consist of a minimum of eighteen (18) inches of earthen material that is capable of sustaining adequate vegetative cover.

005.01B The applicant may request an alternate final cover design that includes:

005.01B1 An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in 005.01A1 of this chapter.

005.01B2 An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in 005.01A2 of this chapter.

005.01B3 The Director may establish alternative requirements for the infiltration barrier in accordance with Section 005.01B1 of this chapter, after public review and comment, for any owners or operators of municipal solid waste landfills (MSWLF's) that dispose of twenty (20) tons of municipal solid waste per day or less, based on an annual average. Any alternative requirements established under this section must:

005.01B3(a) Consider the unique characteristics of small communities;

005.01B3(b) Take into account climatic and hydrogeologic conditions; and

005.01B3(c) Be protective of human health and the environment.

005.01C Final surface grades and side slopes of the closed solid waste disposal area shall prevent run-on and runoff from eroding or otherwise damaging the final cover.

005.01D Appropriate vegetative cover shall be established and maintained as soon as practical after final grading.

005.01E Unauthorized public access, vehicular traffic, and illegal dumping shall be prevented by the use of artificial barriers, natural barriers, or both, along with signs prohibiting such access.

005.02 Owners or operators of a land application unit for repeated disposal or treatment of special waste shall close in accordance with the approved closure plan as described in section 005.11.

005.03 Within 90 days following the installation of the final cover system, the owner or operator shall record a permanent notation on the deed to the disposal area property, or some other permanent property record or instrument that is normally examined during the title search and shall provide documentation to the Department that such notation or instrument has been recorded in the permanent records of the county Register of Deeds. A copy of this record and documentation shall be placed in the operating record. This notation or instrument must, in perpetuity, notify any potential purchaser of the following information:

005.03A The existence of a closed solid waste disposal area on the property;

005.03B The type, depth and location of the waste on the property, as well as the existence of any monitoring systems; and

005.03C Any restrictions on the use of the property which may be provided to protect the integrity of the final cover, liner, monitoring systems or any other components of the containment system.

005.04 The owner or operator of a permitted solid waste disposal area shall notify the Department, in writing, at least 180 days prior to the date the owner or operator expects to begin closure. Such notice shall also be placed in the operating record.

005.05 The owner or operator of a solid waste disposal area shall begin implementation of the closure plan required in 005.10 and 005.11 of this rule within thirty (30) days after the date on which the facility receives the final volume of waste. The owner or operator shall notify the Department, in writing, of the date of the receipt of the final volume of waste, the date of the initiation of closure, and the date of the installation of the final cover system, as applicable. Copies of these notices shall also be placed in the operating record.

005.06 The owner or operator of a solid waste disposal area shall complete closure activities in accordance with the closure plan within 180 days after the last receipt of waste. Extensions of the closure period may be granted by the Department if the owner or operator demonstrates that closure will, due to circumstances beyond the operator's control, take longer than 180 days and the owner or operator has taken, and will continue to take, all steps to prevent threats to human health and the environment from the unclosed solid waste disposal area.

005.07 Following the closure of a solid waste disposal area or any part of the area, the owner or operator shall submit Construction Quality Assurance documentation, a topographical survey showing final contours, and a certification to the Department signed by an independent professional engineer registered in the State of Nebraska verifying that closure has been completed in accordance with the approved closure plan. This closure documentation and certification shall also be placed in the operating record.

005.08 Owners or operators shall not implement modifications to the design or operation of a solid waste disposal area which results in modifications to the closure plan without prior approval of the Department.

005.09 No person shall excavate, disturb the final cover, or remove any deposited materials from any active or closed solid waste disposal area without having received prior approval from the Department. Requests for approval shall demonstrate that disturbance of the final cover, liner, or other component of the containment system,

including any removal of waste, will not increase the potential threat to human health and the environment and shall include:

005.09A An operational plan identifying the planned activities and the area involved;

005.09B A survey identifying the lines and grades defining the limits of the proposed excavation both vertically and horizontally;

005.09C Estimated number of cubic yards and type of material to be excavated;

005.09D Location where excavated material is to be deposited;

005.09E Type of equipment to be used to transport material;

005.09F Estimated time required for excavation and disposal procedure; and

005.09G Provisions for closing the excavated or disturbed area.

005.10 Closure plan. Owners or operators of solid waste disposal areas shall prepare and submit a written closure plan that describes the steps necessary to close the solid waste disposal area in phases, or the entire area, whichever is applicable. This closure plan shall be part of the permit application. The closure plans shall include but not be limited to, a description of the methods of closure which comply with the requirements of 005 and the following:

005.10A A description of the final cover designed in accordance with the methods and procedures to be used to install the cover;

005.10B An estimate of the largest area of the solid waste disposal area ever requiring a final cover at any time during the active life of the solid waste disposal area;

005.10C An estimate of the maximum inventory of wastes ever on-site over the active life of the solid waste disposal area;

005.10D A schedule for the completion of all activities necessary to satisfy the closure criteria; and

005.10E Installation of any or all of the following, as required by the Department and not already present at the site: landfill gas control systems, leachate collection systems, and/or groundwater monitoring wells.

005.11 The owner or operator of a land application unit for repeated disposal or treatment of special waste shall prepare a written closure plan that describes the steps necessary to close the facility at any point during the active life of the facility. This

closure plan and any revisions shall be placed in the operating record. The closure plans shall include, but are not limited to the following:

005.11A A description of the activities required to close the site in a manner protective of human health and the environment;

005.11B A description of the post-closure plans for the inactive site;

005.11C Methods or means for notifying facility users of the closure of the facility; and

005.11D A description of the location where all materials remaining at the site will be disposed, when applicable.

006 Post-closure criteria. The owners or operators of solid waste disposal areas shall provide for post-closure care for a period of thirty (30) years.

006.01 Post-closure care shall include, at a minimum, the performance and recording of each of the following activities in the operating record:

006.01A Annual inspection and maintenance of the cover to ensure integrity and effectiveness, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and runoff from eroding or otherwise damaging the final cover;

006.01B Annual inspection and maintenance of access control structures and posted signs;

006.01C Maintenance and operation of any existing leachate collection system;

006.01D Maintenance and semiannual sampling and testing of any existing groundwater monitoring well, and maintenance and quarterly sampling of any landfill gas monitoring systems. Results of testing shall be reported to the Department, and placed in the operating record; and

006.01E Maintenance and operation of any other environmental control features which are included in the design and operation of the solid waste disposal area or required by the Department to protect human health and the environment.

006.02 Owners or operators of solid waste disposal areas shall submit a post-closure plan to the Department for approval. This post-closure plan and any revisions shall be placed in the operating record, with copies of any such revisions forwarded to the Department.

006.03 Post-closure plans required pursuant to 006.02 shall include annual maintenance and monitoring activities to be performed at a solid waste disposal area for the specified post-closure period after the approved completion of closure. The length of the post-

closure period may be increased, if the Department determines that the lengthened period is necessary to protect human health and the environment. The length of the post-closure period may be reduced, if the Department determines that the reduced period is sufficient to protect human health and the environment.

006.04 A detailed written post-closure plan shall include, at a minimum, the following information:

006.04A A description of the monitoring and maintenance activities required in 006 for each solid waste disposal area and the frequency at which these activities will be performed;

006.04B Name, address, and telephone number of the person or office to contact about the closed solid waste disposal area during the post-closure period; and

006.04C A description of the planned uses of the property during the post-closure period and a description of the period of time during which access to the facility will be controlled. Post-closure use of the property shall not disturb the integrity of the final cover, liner, or any other components of the containment system, or the function of the monitoring systems.

006.05 The owner or operator shall begin implementing the post-closure plan required in Section 006.02 immediately after final closure of the solid waste disposal area is completed and continue implementing the plan over the entire post-closure period.

006.06 Following the post-closure period of each solid waste disposal area, the owner or operator shall submit a certification to the Department signed by an independent professional engineer registered in the State of Nebraska verifying that post-closure care has been completed in accordance with the approved post-closure plan.

007 Required Maps and Drawings. The permit application for a solid waste disposal area shall include the following maps. When a structure described in 007.03 and 007.04 is not present at the site, a notation shall be made on the required map or drawing.

007.01 A topographic map or maps of any solid waste disposal area drawn to the scale of 200 feet to the inch or larger, containing 5-foot contour intervals where the relief exceeds 20 feet, and 2-foot contour intervals where the relief is 20 feet or less, and referred to a United States Geological Survey datum.

007.02 A topographic map indicating the proposed final contours and landscaping of completed solid waste disposal areas with a statement of the proposed final use of the site, if known.

007.03 Maps of the site, drawn to scale, indicating the location of:

007.03A Ground water monitoring wells and gas monitoring locations, if required;

007.03B Points of entrance to and exit from the facility and to and from the operating area of the facility;

007.03C Loading, dumping and any temporary storage areas;

007.03D Interior roads and ramps;

007.03E Devices for controlling litter;

007.03F Devices for controlling unauthorized access to the facility site;

007.03G Drainage facilities, structures, walls, cribbing, surface protection devices, and any other devices as are necessary to comply with applicable water quality standards;

007.03H Fire protection facilities;

007.03I Utilities to service the site;

007.03J Gas and oil wells;

007.03K High tension power lines;

007.03L Fuel transmission pipelines;

007.03M Salvage operations;

007.03N Fill area;

007.03O Borrow areas; and

007.03P Provisions for concealing a solid waste disposal area from public view.

007.04 Maps of the area within one-quarter mile of the boundaries of the site, drawn to scale, showing the location of:

007.04A Waterways and surface drains;

007.04B Borings, wells, springs, and their surface elevations, and depths and elevations of water levels;

007.04C Field tile drains; and

007.04D Underground and surface mines, elevations of mine pools, and mine pool discharges.

Enabling Legislation: Neb. Rev. Stat. §§13-2034; 13-2036; 81-1504 (1), (2), (7), (11)-(13), (20); 81-1505; 81-1528 (7);

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