Regulation 61-107.19
Solid Waste Management:
Solid Waste Landfills and Structural Fill

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SC DEPARTMENT *of*
ENVIRONMENTAL
SERVICES

Statutory Authority:	1976 Code Sections 44-96-10 et seq., 48-6-10 et seq., and 2023 Act No. 60, effective July 1, 2024

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Part I. General Requirements.

A. Applicability.

1. This regulation establishes minimum standards for the site selection, design, operation, and closure of all solid waste landfills and structural fill areas. Disposal of waste under the purview of this regulation is based on the waste's chemical/physical properties and is not dependent upon the source of generation with the exception of municipal solid waste that shall be disposed in Class Three landfills. This regulation is divided into the following parts:

a. Part I outlines the general criteria that applies to one or more Parts of the regulation, e.g., the applicability for the regulation, waste characterization requirements for determining the type of landfill needed, definitions for the purposes of this regulation;

b. Part II outlines the Permit-by-rule requirements for structural fill activity using a limited waste stream;

c. Part III outlines the General Permitting requirements for Class One Landfills - using land- clearing debris, and yard trash to fill low areas, including permitted mining sites, for an aesthetic benefit or property enhancement;

d. Part IV outlines the requirements for Class Two Landfills - all landfills for the disposal of waste as outlined in Appendix I of this regulation, and similar waste, and wastes that test, pursuant to Section C of this Part, less than ten (<10) times the maximum contaminant level (MCL) as published in R.61-58, State Primary Drinking Water Regulation current at the time of the permit application. When a waste not listed in Appendix I is approved by the Department for disposal, the landfill's permit will be modified to include the acceptability of the approved waste; and,

e. Part V outlines the requirements for Class Three Landfills that accept municipal solid waste, industrial solid waste, sewage sludge, nonhazardous municipal solid waste incinerator ash and other nonhazardous wastes.

2. This regulation replaces and simultaneously repeals Regulations: 61-107.11 Solid Waste Management: Construction, Demolition, and Land-clearing Debris Landfills; 61-107.13 Solid Waste Management: Municipal Solid Waste Incinerator Ash Landfills; 61-107.16 Solid Waste Management: Industrial Solid Waste Landfills; and 61-107.258 Solid Waste Management: Municipal Solid Waste Landfills. The Department will automatically convert as an administrative modification all existing landfill permits to the appropriate Part as outlined in this regulation.

3. A separate permit shall be required for each landfill even though there may be one or more different types of landfills located in different areas on the same site.

4. This regulation applies to all new and existing solid waste landfills and to all structural fill activities. All new solid waste landfills shall be in compliance with all requirements of this regulation prior to receipt of waste.

5. This regulation becomes effective upon publication as final in the State Register.

6. Existing permitted solid waste landfills shall comply with the following:

a. Existing permitted landfills operating on the effective date of this regulation are not subject to the location criteria outlined herein, but shall be subject to all other provisions of this regulation;

b. Within 180 days of the effective date of this regulation, existing permitted landfills that are not in compliance with required standards, shall submit to the Department a plan to bring the landfill into compliance with requirements of this regulation; and,

c. All landfills operating on the effective date of this regulation shall be in compliance with the requirements of this regulation within 18 months of the effective date of this regulation, unless additional time is allowed pursuant to requirements of this regulation.

7. Landfills for the disposal only of trees, stumps, wood chips, and yard trash when generation and disposal of such waste occurs on properties under the same ownership or control are exempt from the requirements of this regulation. Also, land-clearing debris generated from agricultural or silvicultural operations generated and disposed on site are not subject to the requirements of this regulation.

8. Open dumping is prohibited.

9. Use of Design Document, Plans, and Specifications.

a. The owner/operator of a solid waste landfill shall maintain copies of all Department approved plans and specifications for the landfill at a location readily accessible by landfill personnel and representatives of the Department during regular business hours; and,

b. All landfill operations shall be in accordance with this regulation and with all Department approved plans and specifications for the facility. Failure to operate in accordance with this regulation and/or the approved plans and permit may result in enforcement action by the Department.

10. All activities conducted under the purview of this regulation shall adhere to all Federal and State rules and regulations, and all local zoning, land use, and other applicable ordinances and laws;

B. Definitions for the Purposes of this Regulation.

1. “Active life” means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with this regulation.

2. “Active portion” means that part of a facility that has received or is receiving wastes and that has not been closed in accordance with this regulation.

3. “Administratively complete” means a determination by the Department that all elements of an application, as specified herein, have been received to include all required signatures and tender of the application fee, where required.

4. “Airport” means public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

5. “Applicant” means an individual, corporation, partnership, business association, or government entity that applies for the issuance, transfer, or modification of a permit under this regulation.

6. “Aquifer” means a geological formation, group of formations, or portion of a formation, capable of yielding significant quantities of groundwater to wells or springs.

7. “Areas susceptible to mass movement” means 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 landfill, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall.

8. “Ash” means the solid residue from the incineration of solid wastes.

9. “Beneficial fill” means filling to surrounding grade, low areas or depressions in the surface of the earth to include permitted mining sites for an aesthetic benefit.

10. “Bird hazard” means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

11. “Bulk PCB Waste” means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was ≥50 ppm PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated for disposal under 40CFR761, the Toxic Substances Control Act (TSCA), Sections 761.60(a) through (c), Sec. 761.61, Sec. 761.63, or Sec.761.64. PCB bulk product waste includes, but is not limited to:

(a) Non-liquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with TSCA requirements, Sec. 761.61.

(b) PCB-containing wastes from the shredding of automobiles, household appliances, or industrial appliances.

(c) Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; adhesives; paper; Galbestos; sound deadening or other types of insulation; and felt or fabric products such as gaskets.

(d) Fluorescent light ballasts containing PCBs in the potting material.

12. “Closure” means the discontinuance of operation by ceasing to accept, treat, store, or dispose of solid waste in a manner which minimizes the need for further maintenance and protects human health and the environment.

13. “Commercial solid waste” means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

14. “Construction” means any physical modification to the site at which a potential or proposed solid waste management facility is to be located including, but not limited to, site preparation.

15. “Contingency plan” means a document acceptable to the Department setting out an organized, planned, and coordinated course of action to be followed at or by the facility in case of a fire, explosion, or other incident that could threaten human health and safety or the environment.

16. “Cover” means soil or other suitable material, or both, acceptable to the Department that is used to cover compacted solid waste in a land disposal site.

17. “Department” means the South Carolina Department of Environmental Services.

18. “Disclosure statement” means a sworn statement or affirmation, the form and content of which shall be determined by the department and as required by SC Code Section 44-96-300.

19. “Displacement” means the relative movement of any two (2) sides of a fault measured in any direction.

20. “Disposal” means the discharge, deposition, injection, dumping, spilling, or placing of any solid waste into or on any land or water, so that the substance or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwater.

21. “Existing landfill” means any landfill that is permitted to receive solid waste as of the effective date of this regulation.

22. “Expand” or “Expansion” means, for the purposes of this regulation, any increase in the permitted capacity of a solid waste disposal facility, or any increase in the total volume at a solid waste disposal facility.

23. “Facility” means all contiguous land, structures, other appurtenances and improvements on the land used for treating, storing, or disposing of solid waste. A facility may consist of several treatment, storage, or disposal operational units, including, but not limited to, one or more landfills, surface impoundments, or combination thereof.

24. “Fault” means 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.

25. “Financial assurance mechanism” means a mechanism designed to demonstrate that sufficient funds will be available to meet specific environmental protection needs of solid waste management facilities. Available financial responsibility mechanisms include, but are not limited to insurance, trust funds, surety bonds, letters of credit, certificates of deposit, and financial tests as determined by the Department by regulation.

26. “Flood plain” means the lowland and relatively flat areas adjoining inland and coastal areas of the mainland and off-shore islands including, at a minimum, areas subject to a one percent or greater chance of flooding in any given year.

27. “100-year flood” means a flood that has a 1-percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on the average over a significantly long period.

28. “Footprint” means the outer most edges of the waste disposal area.

29. “Gas condensate” means the liquid generated as a result of gas recovery process(es) at the landfill.

30. “Generator” means any person, by site, whose action or process produces solid waste, or whose action first causes a solid waste to become subject to regulation.

31. “Groundwater” means water beneath the land surface in the saturated zone.

32. “Hazardous waste” has the meaning provided in Section 44-56-20 of the South Carolina Hazardous Waste Management Act.

33. “High water table” means the highest water elevations measured at the uppermost aquifer.

34. “Holocene” means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

35. “Household waste” means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreational areas).

36. “Industrial waste” means solid waste that results from industrial processes including, but not limited to, factories and treatment plants.

37. “Karst terranes” means 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.

38. “Landfill” means a disposal facility or part of a facility where solid waste is placed in or on land, and which is not a land treatment facility, a surface impoundment, or an injection well.

39. “Land-clearing debris” means solid waste which is generated solely from land-clearing activities, but does not include solid waste from agricultural or silvicultural operations.

40. “Lateral expansion” means a horizontal expansion of the footprint of an existing landfill.

41. “Leachate” means the liquid that has percolated through or drained from solid waste or other man-emplaced materials and that contains soluble, partially soluble, or miscible components removed from such waste.

42. “Lead-based paint” means paint containing greater than 600 parts per million (ppm) total lead by weight, calculated as lead metal in the total nonvolatile content, i.e., >0.06%; or, when measured in situ with an X-ray Fluorescence Spectrum Analyzer (XRF), paint containing >0.7 mg/cm^2.

43. “Liquid waste” means any waste material that is determined to contain “free liquids” as defined by Method 9095B (Paint Filter Liquids Test), and as described in “Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods” (EPA Pub. No. SW-846, as amended by EPA final updates).

44. “Lithified earth material” means 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. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth’s surface.

45. “Local government” means a county, any municipality located wholly or partly within the county, and any other political subdivision located wholly or partly within the county when such political subdivision provides solid waste management services.

46. “Lower explosive limit” means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25°C and atmospheric pressure.

47. “Maximum horizontal acceleration in lithified earth material” means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 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.

48. “Modification” means changes to a solid waste landfill as follows:

a. “Minor modification” means a change that keeps the permit current with routine changes to the facility or its operations, or an administrative change; and,

b. “Major modification” means a change that substantially alters the facility or its operations, e.g., tonnage increase above 25%, any volumetric capacity increase, alternate designs that vary from the design prescribed in this regulation.

49. “Municipal solid waste” includes, but is not limited to, wastes that are durable goods, nondurable goods, containers and packaging, food scraps, and miscellaneous inorganic wastes from residential, commercial, institutional, and industrial sources including, but not limited to, appliances, automobile tires, newspapers, clothing, disposable tableware, office and classroom paper, wood pallets, and cafeteria wastes.

50. “Municipal solid waste incinerator” means any solid waste incinerator, publicly or privately owned, that receives household waste. Such incinerator may receive other types of solid waste such as commercial or industrial solid waste.

51. “On-site landfill” means landfills that accept only solid waste generated in the course of normal operations on property under the same ownership or control as the waste management facility.

52. “Open burning” means any fire or smoke-producing process which is not conducted in any boiler plant, furnace, high temperature processing unit, incinerator or flare, or in any other such equipment primarily designed for the combustion of fuel or waste material.

53. “Open dumping” means any unpermitted or unregistered solid waste disposal or land filling activity.

54. “Pay-in period” means the time frame allotted for making annual payments into a trust fund.

55. “Perennial stream” means a stream or reach of a stream that flows continuously throughout the year and whose upper surface generally stands lower than the water table in the region adjoining the stream.

56. “Permit” means the process by which the department can ensure cognizance of, as well as control over, the management of solid wastes.

57. “Permittee” means the person to whom the Department issued either a permit, an approval to operate under a General Permit, or a Permit-by-rule, pursuant to this regulation.

58. “Person” means an individual, corporation, company, association, partnership, unit of local government, state agency, federal agency, or other legal entity.

59. “Poor foundation conditions” means those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a landfill.

60. “Practical Quantitation Limit (PQL)” means the lowest concentration of an analyte that can be measured within specified limits of precision and accuracy during routine laboratory operating conditions.

61. “Putrescible wastes” means solid waste that contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to be capable of creating foul smelling odors and attracting or providing food for animals.

62. “Qualified professional” means a qualified South Carolina registered professional geologist or qualified South Carolina registered professional engineer. Under Part IV Section E and Part V Subpart E the qualified professional shall have sufficient training and experience in groundwater hydrology and related fields, including groundwater monitoring, contaminant fate and transport, and corrective-action.

63. “Recharge area” for a particular aquifer is defined as areas where water enters the aquifer through downward migration. Principal examples include: outcrop areas of a particular aquifer where the potentiometric head within the unit decreases with depth; and, in the subsurface, where the potentiometric head relationship and leakage factors across any confining unit allow for downward flow into other aquifer systems.

64. “Region” means a group of counties in South Carolina that is planning to or has prepared, approved, and submitted a regional Solid Waste Management Plan to the Department pursuant to S.C. Code Section 44-96-80.

65. “Regulated hazardous waste” means a solid waste that is a hazardous waste, as defined in R.61-79.261.3, Hazardous Waste Management Regulations, that is not excluded from regulation as a hazardous waste under R.61-79.261.4(b), or was not generated by a conditionally exempt small quantity generator as defined in R.61-79.261.5.

66. “Regulatory threshold” means promulgated levels that can not be equaled or exceeded.

67. “Representative sample” means a sample that statistically represents the population.

68. “Responsible party” means:

a. Any officer, corporation director, or senior management official of a corporation, partnership, or business association that is an applicant;

b. A management employee of a corporation, partnership, or business association that is an applicant who has overall responsibility for operations and financial management of the facility under consideration;

c. An individual, officer, corporation director, senior management official of a corporation, partnership, or business association under contract to the applicant to operate the facility under consideration; or,

d. An individual, corporation, partnership, or business association that holds, directly or indirectly, at least five percent (5%) equity or debt interest in the applicant. If any holder of five percent or more of the equity or debt of the applicant is not a natural person, the term means any officer, corporation director, or

senior management official of the equity or debt holder who is empowered to make discretionary decisions with respect to the operation and financial management of the facility under consideration.

69. "Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

70. "Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

71. "Saturated zone" means that part of the earth's crust in which all voids are filled with water.

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

73. "Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

74. "Small business" means a commercial retail service, industry entity, or nonprofit corporation, including its affiliates, that:

a. Is, if a commercial retail service or industry service, independently owned and operated; and,

b. Employs fewer than one hundred (100) full-time employees or has gross annual sales or program service revenues of less than five million dollars.

75. "Sole source aquifer" is defined as specified in the Federal Safe Drinking Water Act.

76. "Solid waste" means any garbage, refuse, or sludge from a waste treatment facility, water supply plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. This term does not include solid or dissolved material in domestic sewage, recovered materials, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to NPDES permits under the Federal Water Pollution Control Act, as amended, or the Pollution Control Act of South Carolina, as amended, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended. Also excluded from this definition are application of fertilizer and animal manure during normal agricultural operations or refuse as defined and regulated pursuant to the South Carolina Mining Act, including processed mineral waste, which will not have a significant adverse impact on the environment.

77. "Special Wastes" means nonresidential or commercial solid wastes, other than regulated hazardous wastes, that are either difficult or dangerous to handle and require unusual management at Class Three landfills, including, but not limited to, those wastes contained in S.C. Code Section 44-96-390.(A).

78. "Special Wastes Analysis and Implementation Plan" means the procedures used to identify and manage special wastes at Class Three landfills, pursuant to SC Code Section 44-96-390.

79. "State" means the State of South Carolina.

80. “Structural components” means liners, leachate collection systems, final covers, run-on/run-off systems, and any other component used in the construction and operation of the landfill that is necessary for protection of human health and the environment.

81. “Structural fill” means landfilling for future beneficial use utilizing land-clearing debris, hardened concrete, hardened/cured asphalt, bricks, blocks, and other materials specified by the department by regulation, compacted and landfilled in a manner acceptable to the department, consistent with applicable engineering and construction standards and carried out as a part of normal activities associated with construction, demolition, and land-clearing operations; however, the materials utilized must not have been contaminated by hazardous constituents, petroleum products, or painted with lead-based paint. Structural fill may not provide a sound structural base for building purposes.

82. “Structural integrity” means the ability of a landfill to withstand physical forces exerted upon designed components, appurtenances, and containment structures (e.g., liners, dikes) of the landfill.

83. “Surface water” means lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within territorial limits, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private. (This does not include drainage ditches, sedimentation ponds and other operational features on the site.)

84. “Unstable area” means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and Karst terranes.

85. “Uppermost aquifer” means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

86. “Vector” means a carrier that is capable of transmitting a pathogen from one organism to another including, but not limited to, flies and other insects, rodents, birds, and vermin.

87. “Vertical expansion” means an expansion of an existing solid waste landfill above previously permitted elevations for the purposes of gaining additional capacity.

88. “Washout” means the carrying away of solid waste by waters of the one-hundred year base flood.

89. “Wetlands” means those areas that are defined in 40 Code of Federal Regulations (CFR) Section 232.2(r) or State law.

90. “Yard trash” means solid waste consisting solely of vegetative matter resulting from landscaping maintenance.

C. Waste Characterization.

1. Waste Characterization Report.

a. Determination of the proper landfill class for disposal of a waste stream is based on the chemical and physical properties of the waste and not on the source of generation of the waste. To determine the class of landfill required for proper disposal of a waste stream, the permittee shall submit to the Department a waste characterization report. The waste characterization report shall consist of a comprehensive

analytical evaluation of the chemical and physical nature of each waste stream. Hazardous wastes as defined in R.61-79, Hazardous Waste Management Regulations shall not be disposed of in the landfills under the purview of this regulation. The wastes acceptable for disposal in a Class One landfill, and waste items listed in Appendix I are exempt from the waste characterization process outlined in this regulation. Class Three landfills shall adhere to their approved Special Waste Analysis and Implementation Plan (SWAIP), pursuant to S.C. Code Section 44-96-390 which shall be deemed to be in compliance with this Section.

b. The toxicity characteristic leaching procedure (TCLP) (USEPA method 1311) shall be used to obtain all extracts for the purpose of characterizing a waste stream proposed for disposal in a solid waste landfill.

c. The analytical results of the TCLP shall be compared to the MCLs in South Carolina R.61-58 State Primary Drinking Water Regulation to determine the appropriate class landfill in which the waste stream may be disposed. If no MCL exists for a parameter, then those drinking water risk-based concentrations recognized by EPA Region IV shall be used to determine the appropriate class landfill for the waste. For those parameters where no MCL or Region IV number exists, the Department, using input from the permittee, will develop an appropriate number for determining the landfill class for disposal of that waste stream.

d. Unless otherwise exempted in this regulation, all wastes shall be characterized in accordance with the following schedule:

(1) A minimum of every three years using certified knowledge of the process by which the waste stream was generated;

(2) At a minimum of every six years using analytical test data from the TCLP;

(3) According to a Department approved alternate schedule based on the variability or non-variability noted in previous sampling events or other factors that affect the predictability of waste characteristics;

(4) When the process or raw materials used in the process that generates the waste changes significantly enough to alter the chemical makeup or chemical ratios of the waste stream; and,

(5) When a new waste stream is proposed for disposal.

e. Waste streams not listed in Appendix I, that demonstrate properties similar to the waste listed on Appendix I, may be exempted from testing as determined by the Department on a case-by-case basis. Requests for an exemption from testing, along with technical rationale for the exemption, shall be submitted to the Department in writing.

f. The Department will provide current forms and guidance documents needed for the successful completion of the waste characterization process. All analytical results from the characterization process shall be submitted to the Department on these forms or in a format approved by the Department.

2. Waste Testing and Waste Stream Determination.

a. The permittee shall submit to the Department a comprehensive determination of the chemical and physical nature of each waste stream to be landfilled in accordance with the following sampling and analytical requirements:

(1) To ensure that representative samples are obtained, the sampler shall develop a sampling plan and employ all reasonable measures, such as sampling different sources of solid waste at different times, or conducting random sampling of a representative pile of the waste generated from different sources at different times. All samples of waste shall be collected using procedures as described in EPA Publication SW-846.

(2) All analytical testing required by this regulation shall be performed by a laboratory certified by the Department for the appropriate methodologies, to both properly prepare and analyze for the required parameters. The current guidelines for applicable regulatory thresholds, practical quantitation limits, and required quality assurance data shall be obtained from the Department prior to the start of the characterization project. Analytical results shall be submitted to the Department within 60 days of the sample collection date.

(3) Mixing of individual wastes to be disposed of prior to testing is acceptable only if:

(a) The individual wastes are mixed prior to discharge in the normal production process of the generator or the individual wastes are generated by identical processes and identical raw materials; or,

(b) The mixing of individual non-hazardous wastes results in a waste in which leaching characteristics are no greater than the leaching characteristics of one or more of the individual wastes; and,

i. A demonstration is submitted to the Department for review and approval that details how a reduction in leaching occurs due to some factor other than dilution. The demonstration shall include, at a minimum:

aa. The concentration, determined in accordance with the requirements of this Section, for each parameter which undergoes a reduction in concentration. Concentrations of parameters shall be determined for each individual waste in the mixture and for each parameter as a result of the mixture;

bb. A listing and the ratio, by weight and volume, of the individual wastes which comprise the mixture;

cc. Calculations using the concentration and weight data required in paragraphs aa. and bb. above, which demonstrate quantitatively that the reduction in leaching characteristics is not solely due to dilution; and,

dd. An identification and explanation of the chemical reactions, including chemical equations, which cause the reduction.

ii. The individual non-hazardous wastes are mixed in the same ratios and in the same manner in which they will be mixed prior to disposal.

(4) For the purpose of obtaining an extract, which will be analyzed for any volatile organic compounds, a zero head space extraction apparatus, as specified in the TCLP, shall be used.

(5) Practical Quantitation Limits (PQLs) for the analytical methods shall be one order of magnitude below the required regulatory threshold for the particular landfill class desired for disposal. Slight deviations in minimum PQL may be granted, on a case-by-case basis, with proper application and technical justification to the Department.

b. For the initial characterization of solid waste to be disposed of in a solid waste landfill, a minimum of two (2) representative samples of the waste shall be collected and tested in accordance with the TCLP. TCLP testing of additional samples of the solid waste may be required by the Department, based on a high degree of variability in the concentration of a parameter at or near the maximum allowable concentration for a particular landfill class. The Department may allow, with prior approval, the testing for selected constituents based on the generators knowledge of the process.

c. The permittee shall notify and obtain approval from the Department prior to making any physical or chemical changes to the waste stream being disposed of in a solid waste landfill.

(1) Significant changes in the chemical or physical nature of the waste stream may require disposal of the waste stream in a different class of landfill.

(2) Significant changes to the chemical or physical nature of the waste stream may require modification of the environmental monitoring program.

d. Any person seeking to utilize a testing or analytical method other than the TCLP method described in Section C.1.b. above may request authorization to do so. To be successful, the applicant shall demonstrate to the satisfaction of the Department that the proposed method is equal to or superior to the TCLP in terms of its sensitivity, accuracy, and precision (i.e., reproducibility). The request shall include, at a minimum:

(1) A full description of the proposed method, including all procedural steps and equipment used in the method;

(2) Description of the types of wastes or waste matrices for which the proposed method may be used;

(3) Comparative results obtained from using the proposed method with those obtained from using the TCLP;

(4) An assessment of any factors, which may interfere with, or limit the use of, the proposed method;

(5) A description of the quality control procedures necessary to ensure the sensitivity, accuracy, and precision of the proposed method; and,

(6) Any other information on the proposed method, which the Department may reasonably request to evaluate the proposed method.

e. The outcome of an alternate testing procedure as outlined in Section C.2.d. above may result in revision of the landfill class limits as defined in Part I, Section A.1. of this regulation to ensure equivalent protection of human health and the environment.

f. Solid waste streams that contain chemicals or chemical properties potentially harmful to human health and the environment, for which TCLP or other approved testing procedures as outlined in Section C.2.d. above is not sufficient, shall be classified on a case-by-case basis by the Department. The permit applicant may be required to perform alternate testing procedures as necessary to determine the potential adverse effects to human health and the environment.

g. A sampling and analysis plan for performing the activities outlined in Section C.2.a.-f. above shall be submitted to the Department for review and approval prior to sampling for waste characterization purposes.

h. If the waste characterization test results indicate that a landfill reclassification is necessary based on exceedance of the landfill classification level outlined in Part IV A.1., the Department may require additional sampling and testing to confirm or reject such indication. If exceedance of the landfill classification level outlined in Part IV A.1 is confirmed and the facility intends to continue to accept the waste stream in question, the Department will require the permittee to submit a permit application for appropriate modifications to the landfill. The required modifications shall insure that the facility meets the requirements of the new landfill classification.

3. Waste Characterization Report for Class Two Landfills.

a. Class Two landfills shall, prior to permit issuance, submit a waste characterization report that contains at a minimum, the following:

(1) A listing of each solid waste proposed for disposal in the facility;

(2) The solid waste sampling plan used to ensure that accurate and representative samples are collected in accordance with Section C.2.a. above;

(3) A detailed description of any mixing to be proposed as described in Section C.2.a. above, and any available information that is required by that section;

(4) All laboratory results and quality assurance/quality control documentation that fully characterizes each waste; and,

(5) The name, location, and contact person of each generator of solid waste to be disposed of at the facility.

b. Class Two landfills that accept ONLY those wastes specifically listed in Appendix I are exempt from the waste characterization report requirements.

c. Class Three landfills shall adhere to their approved Special Waste Analysis and Implementation Plan (SWAIP), pursuant to S.C. Code Section 44-96-390.

4. Compliance with the Department approved SWAIP will satisfy requirements of this section for Class Three landfills.

D. Permit Application Process.

1. Determination of Need and Consistency.

a. Prior to submittal of a permit application to the Department for a new or expanded Class Two or Class Three Landfill, the applicant shall provide documentation of property ownership (e.g., tax map or deed) or proof of property control (e.g., contract) and request the following determinations by the Department:

(1) That there is a need for the proposed landfill or landfill expansion pursuant to Regulation 61-107.17 and that the Department has determined the maximum yearly disposal rate pursuant to Regulation 61-107.17;

(2) That the proposed landfill or landfill expansion is consistent with the State and county/region solid waste management plans pursuant to S.C. Section 44-96-290(F);

(3) That the proposed landfill or landfill expansion is consistent with local zoning, land use, and any other applicable ordinances pursuant to S.C. Code Section 44-96-290(F);

(4) That the proposed landfill or landfill expansion meets the buffer requirements set forth in Part IV, B.1.a. of this Regulation for Class Two landfills and Part V, Subpart B.258.18.a. of this Regulation for class Three landfills;

b. Where, prior to the effective date of this regulation, the Department has made determinations required under Part I.D.1.a. of this regulation, such determinations shall remain applicable and become the agency's final determination under Part I.D.1, subject to the appeal provision in Part I.D.1.c and the subsequent public notice and application process.

c. A Department decision involving a determination listed herein, may be appealed by an affected person with standing pursuant to applicable law, including S.C. Code Title 48, Chapter 6; and Title 1, Chapter 23.

2. Public Notification and Participation.

a. Notice of Intent to File a Permit Application.

(1) Within 15 days of notification from the Department that all requests for need and consistency determinations as outlined in Section D.1.a. above have been submitted to the Department for a new or expanding Class Two or Class Three Landfill, the applicant shall publish Notice of Intent to File a Permit Application in a newspaper of general circulation in the area of the proposed landfill project. The notice shall be published in the legal section of the paper for three consecutive days. This section does not apply to major permit modifications that are not expansions of an existing landfill.

(2) The notice shall contain at least the following:

(a) Name and address of the applicant;

(b) The location of the proposed landfill or landfill expansion to include the county, roads and crossroads;

(c) The town or community nearest to the proposed landfill or landfill expansion;

(d) The proposed size of the landfill or landfill expansion, i.e., footprint acreage;

(e) An explanation of the type(s) of waste that will be accepted;

(f) A statement that a request has been submitted to the Department for a determination that there is a need for the proposed landfill or landfill expansion pursuant to Regulation 61-107.17 and for a determination of the maximum yearly disposal rate pursuant to Regulation 61-107.17;

(g) A statement that a request has been submitted to the Department for a determination that the proposed landfill or landfill expansion is consistent with the State and county/region solid waste management plans pursuant to S.C. Section 44-96-290(F);

(h) A statement that a request has been submitted to the Department for a determination that the proposed landfill or landfill expansion is consistent with local zoning, land use, and any other applicable ordinances pursuant to S.C. Code Section 44-96-290(F);

(i) A statement that a request has been submitted to the Department for a determination that the proposed landfill or landfill expansion meets the buffer requirements set forth in Part IV, B.1.a. of this Regulation for Class Two landfills and Part V, Subpart B.258.18.a. of this Regulation for Class Three landfills;

(j) Department locations (Central Office and appropriate Regional Office) where a copy of these documents can be viewed during normal working hours; and,

(k) The Department's address and contact name for submittal of inquiries and placement of name on the Department's mailing list for future decisions.

(3) No permit application may be accepted by the Department for filing unless accompanied by documentation from the newspaper that publication has been made.

(4) No later than the first date of publication in the newspaper, the applicant shall mail a copy of the Notice of Intent to File a Permit Application by certified mail, return receipt requested, to all adjoining landowners of the proposed landfill or landfill expansion.

b. Notice of Draft Determinations of Need and Consistency Under Section D.1.a. Above.

(1) For Class Two and Class Three landfills, the Department will publish a notice when the draft determinations are ready for review for all new or expanded landfills. This notice will be published in a newspaper of general circulation in the area of the proposed landfill and sent to affected persons who have asked to be notified. The notice will list locations where a copy of the draft determinations can be reviewed. The public will have a 30-day period to review the draft determinations and submit comments to the Department, pursuant to the Administrative Procedures Act, SC Code Section 1-23-10 et seq.

(2) Public Hearings for Draft Determinations.

(a) The Department will conduct a public hearing upon receipt of requests in writing by ten (10) persons or by a governmental subdivision or agency or by an association having not less than ten members.

(b) A request for a public hearing must be mailed (postmarked) to the Department during the 30 day comment period and shall be based on technical reasons relating to siting, design, or operation of the landfill. The Department will send a notice acknowledging receipt of a request for a public hearing to the applicant and to the person(s) requesting a hearing within 15 days following receipt of the request. The Department will publish a notice of the time, date, and location of the hearing.

(3) Notice of Department Determinations. After close of the public comment period on the draft determination and the public hearing, if held, the Department will issue a Department Decision. Notice of the Department Decision will be sent by certified mail, return receipt requested, to the applicant. Notice of the Department's decision will be sent by regular mail, unless certified mail is requested, to affected persons who have asked to be notified, to all persons who commented in writing to the Department, and to all

persons who attended the public hearing, if held. However, if the Department determines that members of the same group or organization have submitted comments or a petition, the Department may only notify all group leaders and petition organizers by certified mail, return receipt requested. The Department will ask these leaders and organizers to notify members of their groups or any concerned citizens who signed the petitions. The Department will also publish notice of the Department Decision in a newspaper of general circulation in the area of the proposed activity. The Department's notice will include instructions on how to request a final review conference and the time frame for filing such a request.

c. Notice of Filing Permit Application.

(1) Notice of all applications submitted to the Department for the initial construction and major modifications of Class Two and Class Three landfills shall be published by the applicant once in a newspaper of general circulation in the area of the proposed landfill project. Notice for Class Two landfill application shall be published as provided in Part IV, Section H.3. Notice for new Class Three landfills that accept municipal solid waste shall be published as provided in S. C. Code Section 44-96-470 and Part V, Subpart H.3.a. of this regulation within 15 days of filing the permit application. Notice for all other new Class Three landfills shall be published as provided in Part V, Subpart H.3.b.

(2) All notices shall contain the following:

(a) Name and address of the applicant;

(b) The location of the proposed activity to include the county, roads and crossroads. (Class Three landfills shall provide a location map of the proposed site);

(c) The nature of the proposed activity;

(d) A description of the proposed site or a description of the proposed major modification;

(e) An explanation of the type(s) of waste that will be accepted;

(f) Department locations (Central Office and appropriate Regional Office) where a copy of the permit application or draft permit, as appropriate, can be viewed during normal working hours;

(g) The Department's address and contact name for submittal of comments and inquires;

(h) The approximate tonnage/year expected for disposal at the landfill; and,

(i) The proposed life of the landfill.

(3) The Department will send a notice of receipt of the permit application by regular mail to all adjoining landowners of the proposed landfill.

d. Public notification requirements for Class One landfills are defined in Part III, Section B.4.

e. Notice of Draft Permit. For Class Two and Class Three landfills, the Department will publish a notice when the draft permit is ready for review for all new landfills and for major modifications as determined by the Department. This notice will be published in a newspaper of general circulation in the area of the proposed landfill and will be sent to affected persons who have asked to be notified. The notice will list locations where a copy of the draft permit can be reviewed. The public will have a 30-day period

to review the draft permit and submit comments to the Department, pursuant to the Administrative Procedures Act, SC Code Section 1-23-10 et seq.

f. Public Hearings for Draft Permits.

(1) The Department will conduct a public hearing upon receipt of requests in writing by ten (10) persons or by a governmental subdivision or agency or by an association having not less than ten members.

(2) A request for a public hearing must be mailed (postmarked) to the Department during the 30 day comment period and shall be based on technical reasons relating to siting, design, or operation of the landfill. The Department will send a notice acknowledging receipt of a request for a public hearing to the applicant and to the person(s) requesting a hearing within 15 days following receipt of the request. The Department will publish a notice of the time, date, and location of the hearing.

g. Notice of Department Decision on the Permit. After close of the public comment period on the draft permit and the public hearing, if held, the Department will issue a Department Decision. Notice of the Department Decision will be sent by certified mail, return receipt requested, to the applicant. Notice of the Department's decision will be sent by regular mail, unless certified mail is requested, to affected persons who have asked to be notified, to all persons who commented in writing to the Department, and to all persons who attended the public hearing, if held. However, if the Department determines that members of the same group or organization have submitted comments or a petition, the Department may only notify all group leaders and petition organizers by certified mail, return receipt requested. The Department will ask these leaders and organizers to notify members of their groups or any concerned citizens who signed the petitions. The Department will also publish notice of the Department Decision in a newspaper of general circulation in the area of the proposed activity. The Department's notice will include instructions on how to request a final review conference and the time frame for filing such a request.

E. Financial Assurance Criteria. The requirements of this Section apply to all: Class One landfills, except landfills owned and operated by local government or a region comprised of local governments, State or Federal government; Class Two landfills, except landfills owned and operated by local government or a region comprised of local governments, State or Federal government; and, Class Three landfills, except landfills owned and operated by State or Federal government entities whose debts and liabilities are the debts and liabilities of the State or the United States.

1. Financial Assurance for Closure.

a. The permittee shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of the landfill ever requiring a final cover at any time during the active life in accordance with the closure plan. The permittee shall submit a copy of the estimate to the Department for review and approval.

(1) The cost estimate shall equal the cost of closing the largest area of the landfill ever requiring a final cover at any time during the active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.

(2) During the active life of the landfill, the permittee shall annually adjust the closure cost estimate for inflation.

(3) The permittee shall increase the closure cost estimate and the amount of financial assurance provided if changes to the closure plan or landfill conditions increase the maximum cost of closure at any time during the remaining active life.

(4) The permittee may reduce the closure cost estimate and the amount of financial assurance provided for proper closure if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the landfill. The permittee shall submit justification for the reduction of the closure cost estimate and the amount of financial assurance to the Department for review and approval.

b. The permittee of each landfill shall establish financial assurance for closure of the landfill as required by this regulation using an allowable mechanism. The permittee shall provide continuous coverage for closure until released from financial assurance requirements, pursuant to this regulation.

2. Financial Assurance for Post-closure Care.

a. The permittee shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the landfill in compliance with the applicable post-closure plan. The post-closure cost estimate used to demonstrate financial assurance shall account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The permittee shall submit a copy of the estimate to the Department for review and approval.

(1) The cost estimate for post-closure care shall be based on the most expensive costs of post-closure care during the post-closure care period.

(2) During the post-closure care period, the permittee shall annually adjust the post-closure cost estimate for inflation.

(3) The permittee shall increase the post-closure care cost estimate and the amount of financial assurance provided if changes in the post-closure plan or landfill conditions increase the maximum costs of post-closure care.

(4) The permittee may reduce the post-closure cost estimate and the amount of financial assurance provided if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. The permittee shall submit justification for the reduction of the post-closure cost estimate and the amount of financial assurance to the Department for review and approval.

b. The permittee of each landfill shall establish financial assurance for the costs of post-closure care as required by this regulation using an allowable mechanism. The permittee shall provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care.

3. Financial Assurance for Corrective Action.

a. A permittee of a landfill required to undertake a corrective action, pursuant to this regulation, shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action in accordance with the corrective action plan. The corrective action cost estimate shall account for the total costs of corrective action activities as described in the corrective action plan for the entire corrective action period. The permittee shall submit a copy of the estimate to the Department for review and approval.

(1) The permittee shall annually adjust the estimate for inflation until the corrective action program is completed, pursuant to this regulation.

(2) The permittee shall increase the corrective action cost estimate and the amount of financial assurance provided if changes in the corrective action program or landfill conditions increase the maximum costs of corrective action.

(3) The permittee may reduce the amount of the corrective action cost estimate and the amount of financial assurance provided in Section E.3.b. below, if the cost estimate exceeds the maximum remaining costs of corrective action. The permittee shall submit justification for the reduction of the corrective action cost estimate and the amount of financial assurance to the Department for review and approval.

b. The permittee of each landfill required to undertake a corrective action program, pursuant to this regulation, shall establish financial assurance for the most recent corrective action program using an allowable mechanism. The permittee shall provide continuous coverage for corrective action until released from financial assurance requirements for corrective action in accordance with this regulation.

4. Allowable Mechanisms. The mechanisms used to demonstrate financial assurance under this section shall ensure that the funds necessary to meet the costs of closure, post-closure care, and corrective action for known releases will be available whenever they are needed. Owners/operators shall choose from the options outlined herein. Payments made into the standby trust fund by the provider of the financial assurance pursuant to the Department instruction shall be transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee. An originally signed duplicate of the standby trust agreement shall be submitted to the Department with documentation of the selected mechanism(s).

a. Trust Fund.

(1) A permittee may satisfy the requirements of this section by establishing a trust fund that conforms to the requirements of this regulation.

(a) The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(b) The text of the trust agreement shall be provided by the Department.

(c) The original trust agreement signed by the permittee and the trustee shall be submitted to the Department for review and approval. The trust agreement shall be accompanied by:

i. Schedule A. This information shall be in a format approved by the Department, updated within 60 days of each change in cost estimate, and include, at a minimum, the following about the facility:

(aa) Permit number, if available;

(bb) Name of the permittee;

(cc) Address of the facility;

(dd) Current closure cost estimate; and,

(ee) Current post-closure cost estimate, if appropriate.

ii. Schedule B. This information shall be in a format approved by the Department and include, at a minimum:

(aa) The amount of funds or property used to initially establish the trust fund; and,

(bb) The account number in which the funds are being held.

iii. A Certificate of Acknowledgment for Solid Waste Management Facility Trust Fund Agreement in a format approved by the Department to include, at a minimum, the:

(aa) Name of the trustee; and,

(bb) Name of the permittee.

(d) The trust fund shall be irrevocable and can not be changed or recalled without written agreements from the Department.

(2) Payments into the trust fund for closure and post-closure care shall be made annually by the permittee for five years or over the remaining life of the landfill, whichever is shorter. This period is referred to as the pay-in period. In the case of a trust fund for corrective action of known releases, the pay-in period shall consists of one-half (½) of the estimated length of the corrective action program.

(3) For a trust fund used to demonstrate financial assurance for closure and post-closure care, the first payment into the fund shall be at least equal to the current cost estimate for closure or post-closure care divided by the number of years in the pay-in period as defined in Section E.4.a.(2) above. The amount of subsequent payments shall be determined by the following formula:

$$\text{Next Payment} = \frac{CE-CV}{Y}$$

where CE is the current cost estimate for closure or post-closure care (updated for inflation or other changes), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund shall be at least equal to one-half of the current cost estimate for corrective action, except as provided in Section E.4.h., divided by the number of years in the corrective action pay-in period as defined in Section E.4.a.(2) above. The amount of subsequent payments shall be determined by the following formula:

$$\text{Next Payment} = \frac{RB-CV}{Y}$$

where RB is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the corrective action period), CV is the current value of the trust fund, and Y is the number of years remaining on the pay-in period.

(5) The initial payment into the trust fund shall be made before the initial receipt of waste in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected.

(6) If the permittee establishes a trust fund after having used one or more alternate mechanisms, the initial payment into the trust fund shall be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to the applicable specifications.

(7) The permittee, or other person authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee for these expenditures. Requests for reimbursement shall be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the most recent Department-approved cost estimate for closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating record. The permittee shall notify the Department that the documentation of the justification for reimbursement has been placed in the operating record and that reimbursement has been received.

(8) The trust fund account shall contain, at a minimum, the amount of funds needed to complete final closure of the facility at any given time during the life of the facility. An annual statement shall be provided to the Department at least 30 days prior to the anniversary date of establishment of the fund that confirms the value of the trust fund account to include all payments made into the account and all reimbursements paid from the account during the previous year.

(9) The trust fund may be terminated by the permittee only if the permittee substitutes alternate acceptable financial assurance or if he is no longer required to demonstrate financial responsibility in accordance with this regulation.

b. Surety Bond Guaranteeing Payment or Performance.

(1) A permittee may demonstrate financial assurance for closure or post-closure care by obtaining a payment or performance surety bond which conforms to the requirements of this regulation. A permittee may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this regulation. The bond shall be effective before the initial receipt of waste in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with this regulation. The permittee shall submit a copy of the bond to the Department. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury. The text of the surety bond shall be provided by the Department.

(2) In addition to the surety bond, the permittee shall establish a standby trust fund, to receive payments using a trustee that has the authority to act as a trustee and that is regulated and examined by a Federal or State agency. The text of the standby trust shall be provided by the Department.

(3) The following documents shall be submitted to the Department:

(a) The original surety bond signed by the Surety and the permittee; and,

(b) The original standby trust agreement signed by the permittee and the trustee.

(4) The penal sum of the bond shall be in an amount at least equal to the current closure, post-closure care or corrective action cost estimate, whichever is applicable, except as provided in Section E.4.j.

(5) Under the terms of the bond, the surety shall become liable on the bond obligation when the permittee fails to perform as guaranteed by the bond.

(6) The permittee shall establish a standby trust fund. The standby trust fund shall meet the requirements for a trust fund as defined in Section E.4.a. except the requirements for initial payment and subsequent annual payments specified in Section E.4.a.(2) through (5) above.

(7) Payments made under the terms of the bond shall be deposited by the surety directly into the standby trust fund. Payments from the trust fund shall be approved by the trustee.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the permittee and to the Department 120 days in advance of cancellation. If the surety cancels the bond, the permittee shall obtain alternate financial assurance as specified in this section.

(9) The permittee may cancel the bond only if alternate financial assurance is substituted as specified in this section or if the permittee is no longer required to demonstrate financial responsibility in accordance with this regulation.

c. Letter of Credit.

(1) A permittee may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this regulation. The letter of credit shall be effective before the initial receipt of waste in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with this regulation. The issuing institution shall be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency. The text of the letter of credit shall be provided by the Department.

(2) The original letter of credit shall be submitted to the Department.

(3) The letter of credit shall be irrevocable and issued for a period of at least one (1) year in an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever is applicable, except as provided in Section E.4.a.. The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the permittee and to the Department 120 days in advance of cancellation. If the letter of credit is canceled by the issuing institution, the permittee shall obtain alternate financial assurance.

(4) The permittee may cancel the letter of credit only if alternate financial assurance is substituted as specified in this section or if the permittee is no longer required to demonstrate financial responsibility in accordance with this regulation.

d. Insurance.

(1) A permittee may demonstrate financial assurance for closure and post-closure care by obtaining insurance that conforms to the requirements of this regulation. The insurance shall be effective before the initial receipt of waste in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of this regulation. At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States. The permittee shall submit a copy of the insurance policy to the Department for review and approval. Once approved, the permittee shall submit a copy of the effective insurance policy including all endorsements and attachments to the Department.

(2) The closure or post-closure care insurance policy shall guarantee that funds will be available to close the landfill whenever final closure occurs or to provide post-closure care for the landfill whenever the post-closure care period begins, whichever is applicable. The policy shall also guarantee that once closure or post-closure care begins, the insurer shall be responsible for the paying out of funds to the permittee or other person authorized to conduct closure or post-closure care, up to an amount equal to the face amount of the policy.

(3) The insurance policy shall be issued for a face amount at least equal to the current cost estimate for closure or post-closure care, whichever is applicable, except as provided in the section that addresses the use of multiple financial mechanisms. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer shall not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(4) A permittee, or any other person authorized to conduct closure or post-closure care, may receive reimbursements for closure or post-closure expenditures, whichever is applicable. Requests for reimbursement shall be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or post-closure care, and if justification and documentation of the cost is submitted to and approved by the Department.

(5) Each policy shall contain a provision allowing assignment of the policy to a successor permittee. Such assignment may be conditional upon consent of the insurer, provided that such consent is not unreasonably refused.

(6) The insurance policy shall provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the permittee and to the Department 120 days in advance of cancellation. If the insurer cancels the policy, the permittee shall obtain alternate financial assurance.

(7) For insurance policies providing coverage for post-closure care, the insurer shall annually increase the face amount of the policy beginning on the date that liability to make payments is initiated. Such increase shall be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85% of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week Treasury securities.

(8) The permittee may cancel the insurance policy only if alternate acceptable financial assurance is substituted, or if the permittee is no longer required to demonstrate financial responsibility in accordance with this regulation.

e. Corporate Financial Test. A permittee that satisfies the requirements of this section may demonstrate financial assurance up to the amount specified below:

(1) Financial component.

(a) The permittee shall satisfy one of the following three conditions:

i. A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; or,

ii. A ratio of less than 1.5 comparing total liabilities to net worth; or,

iii. A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus $10 million, to total liabilities.

(b) The tangible net worth of the permittee shall be greater than:

i. The sum of the current closure, post-closure care, corrective action cost estimates and any other environmental obligations, including guarantees, covered by a financial test plus $10 million, except as provided in paragraph E.4.e.(1)(b)ii. below.

ii. $10 million in net worth plus the amount of any guarantees that have not been recognized as liabilities on the financial statements provided all of the current closure, post-closure care, and corrective action costs and any other environmental obligations covered by a financial test are recognized as liabilities on the owner's or operator's audited financial statements, and subject to the approval of the Department.

(c) The Permittee shall have assets located in the United States amounting to at least the sum of current closure, post-closure care, corrective action cost estimates and any other environmental obligations covered by a financial test as described herein.

(2) Record keeping and reporting requirements.

(a) The permittee shall place the following items into the facility's operating record and submit a copy to the Department:

i. A letter signed by the permittee’s chief financial officer that:

(aa) Lists all the current cost estimates covered by a financial test, including, but not limited to, cost estimates required for municipal solid waste management facilities under 40 CFR Part 258, cost estimates required for UIC facilities under 40 CFR part 144, if applicable, cost estimates required for petroleum underground storage tank facilities under 40 CFR part 280, if applicable, cost estimates required for PCB storage facilities under 40 CFR part 761, if applicable, and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 40 CFR parts 264 and 265, if applicable; and,

(bb) Provides evidence demonstrating that the firm meets the conditions outlined above for either the current rating for its senior unsubordinated debt, or compliance with the ratio comparing total liabilities to net worth, or the ratio comparing net income to total liabilities as outlined in Section E.4.e.(1)(a) above, and the tangible net worth requirements in Section E.4.e.(1)(b) above and assets as outlined in Section E.4.e.(1)(c) above.

ii. A copy of the independent certified public accountant's unqualified opinion of the permittee’s financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements shall receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the potential exception for qualified opinions provided in the next sentence. The Department may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the Department deems that the matters which form the basis for the qualification are insufficient to warrant disallowance of the test. If the Department does not allow use of the test, the permittee shall provide alternate financial assurance that meets the requirements of this section.

iii. If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that the permittee satisfies either the ratio comparing total liabilities to net worth in

Section E.4.e.(1)(a)ii. above, or the ratio comparing net income to total liabilities in Section E.4.e.(1)(a)iii. above that is different from data in the audited financial statements in the independent certified public accountant's financial statements for the latest complete fiscal year, referred to in Section E.4.e.(2)(a)ii. above, or any other audited financial statement or data filed with the SEC, then a special report from the permittee's independent certified public accountant to the permittee is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

iv. If the chief financial officer's letter provides a demonstration that the firm has assured for environmental obligations as provided in paragraph E.4.e.(1)(b)ii. above, then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements, how these obligations have been measured and reported, and that the tangible net worth of the firm is at least $10 million plus the amount of any guarantees provided.

(b) A permittee shall place all records and reports required by this section in the operating record and notify the Department that these items have been placed in the operating record before the initial receipt of waste for closure and post-closure care, and within 120 days after a corrective action remedy has been selected in accordance with this regulation.

(c) After all required records and reports have been placed in the operating record, the permittee shall annually update the information and place updated information in the operating record within 90 days following the close of the permittee's fiscal year. The Department may allow an additional 45 days for a permittee who can demonstrate that 90 days is insufficient time to acquire audited financial statements. The updated information shall encompass all required reports and records.

(d) The record keeping and reporting requirements are no longer applicable when the permittee:

i. Substitutes alternate financial assurance that is not subject to the Record keeping and reporting requirements; or,

ii. Is released from the requirements of providing financial assurance for closure, post-closure, and corrective action pursuant to this regulation.

(e) If the requirements of the financial component in Section E.4.e.(1) above are no longer met, within 120 days following the end of the facility's fiscal year, the permittee shall:

i. Obtain alternative financial assurance that meets the requirements of this section;

ii. Place the required submissions for that assurance in the operating record; and,

iii. Notify the Department that the permittee no longer meets the criteria of the financial test and that alternate assurance has been obtained.

(f) Based on a reasonable belief that the requirements of the financial component are no longer met, at any time the Department may require the submittal of reports of its financial condition in addition to or including current financial test documentation pursuant to this regulation. If the Department finds that

the permittee no longer meets the requirements of the financial component, the permittee shall provide alternate financial assurance that meets the requirements of this regulation.

(3) Calculation of costs to be assured. When calculating the current cost estimates for closure, post-closure care, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test pursuant to this regulation, the permittee shall include cost estimates required for municipal solid waste management facilities under this part, as well as cost estimates required for the following environmental obligations, if it assures them through a financial test: obligations associated with UIC facilities under 40 CFR part 144, petroleum underground storage tank facilities under 40 CFR part 280, PCB storage facilities under 40 CFR part 761, and hazardous waste treatment, storage, and disposal facilities under 40 CFR parts 264 and 265.

f. Local Government Financial Test. A permittee that satisfies the requirements of Sections E.4.f.(1) through (3) may demonstrate financial assurance up to the amount specified in Section E.4.f.(4) below:

(1) Financial Component.

(a) The permittee shall satisfy one of the following two conditions:

i. If the permittee has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, it shall have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard and Poor's on all such general obligation bonds; or,

ii. The permittee shall satisfy each of the following financial ratios based on the permittee's most recent audited annual financial statement:

(aa) A ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05; and,

(bb) A ratio of annual debt service to total expenditures less than or equal to 0.20.

(b) The permittee shall prepare its financial statements in conformity with Generally Accepted Accounting Principles for governments and have its financial statements audited by an independent certified public accountant (or appropriate State agency).

(c) A local government is not eligible to assure its obligations under the local government financial test if it:

i. Is currently in default on any outstanding general obligation bonds; or,

ii. Has any outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's; or,

iii. Operated at a deficit equal to 5% or more of total annual revenue in each of the past two fiscal years; or,

iv. Receives an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant (or appropriate State agency) auditing its financial statement as required in Section E.4.f.(1)(b) above. However, the Department may evaluate qualified opinions on a case-

by-case basis and allow use of the financial test in cases where the Department deems the qualification insufficient to warrant disallowance of use of the test.

(d) The following terms used in this Paragraph are defined as follows:

i. "Deficit" equals total annual revenues minus total annual expenditures;

ii. "Total revenues" include revenues from all taxes and fees but does not include the proceeds from borrowing or asset sales, excluding revenue from funds managed by local government on behalf of a specific third party;

iii. "Total expenditures" include all expenditures excluding capital outlays and debt repayment;

iv. "Cash plus marketable securities" is all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions; and,

v. "Debt service" is the amount of principal and interest due on a loan in a given time period, typically the current year.

(2) Public Notice Component. The local government permittee shall place a reference to the closure and post-closure care costs assured through the financial test into its next comprehensive annual financial report (CAFR) after the effective date of this section or prior to the initial receipt of waste at the facility, whichever is later. Disclosure shall include the nature and source of closure and post-closure care requirements, the reported liability at the balance sheet date, the estimated total closure and post-closure care cost remaining to be recognized, the percentage of landfill capacity used to date, and the estimated landfill life in years. A reference to corrective action costs shall be placed in the CAFR not later than 120 days after the corrective action remedy has been selected in accordance with this regulation. For the first year the financial test is used to assure costs at a particular facility, the reference may instead be placed in the operating record until issuance of the next available CAFR if timing does not permit the reference to be incorporated into the most recently issued CAFR or budget. For closure and post-closure costs, conformance with Government Accounting Standards Board Statement 18 assures compliance with this public notice component.

(3) Record Keeping and Reporting Requirements.

(a) The local government permittee shall place the following items in the facility's operating record and submit a copy to the Department:

i. A letter signed by the local government's chief financial officer that:

(aa) Lists all the current cost estimates covered by a financial test as required;

(bb) Provides evidence and certifies that the local government meets the conditions of either the required rating for general obligation bonds or satisfies the required financial ratios pursuant to Section E.4.f.(1)(a) above, and financial statements and audits as required in Section E.4.f.(1)(b) above, and meets the criteria outlined in Section E.4.f.(1)(c) above regarding eligibility to assure its obligations; and,

(cc) Certifies that the local government meets the requirements established for public notification pursuant to Section E.4.f.(2) above, and the calculation of costs to be assured pursuant to Section E.4.f.(4) below;

ii. The local government's independently audited year-end financial statements for the latest fiscal year (except for local governments where audits are required every two years and where unaudited statements may be used in years when audits are not required), including the unqualified opinion of the auditor who shall be an independent, certified public accountant or an appropriate State agency that conducts equivalent comprehensive audits;

iii. A report to the local government from the local government's independent certified public accountant (CPA) or the appropriate State agency based on performing an agreed upon procedures engagement relative to the financial ratios required by Section E.4. f.(1)(a)ii. of this section, if applicable, and the requirements for financial statements pursuant to Section E.4.f.(1)(b), and assuring obligations outlined in Sections E.4.f.(1)(c)iii. and iv. The CPA or State agency's report should state the procedures performed and the CPA or State agency's findings; and,

iv. A copy of the comprehensive annual financial report (CAFR) used to comply with the public notice requirements in Section E.4.f.(2) above or certification that the requirements of General Accounting Standards Board Statement 18 have been met.

(b) The record keeping and reporting requirements outlined in Section E.4.f.(3)(a) above shall be placed in the facility operating record and a copy submitted to the Department:

i. In the case of closure and post-closure care, prior to the initial receipt of waste at the facility; or,

ii. In the case of corrective action, not later than 120 days after the corrective action remedy is selected in accordance with the requirements of this regulation.

(c) After the initial placement of the items in the facility's operating record, the local government permittee shall update the information and place the updated information in the operating record and submit a copy to the Department within 180 days following the close of the permittee's fiscal year.

(d) The local government permittee is no longer required to meet the record keeping and reporting requirements outlined in Section E.4.f.(3) above when:

i. The permittee substitutes alternate financial assurance as specified in this section; or,

ii. The permittee is released from the requirements of this section in accordance with this regulation.

(e) A local government shall satisfy the requirements of the financial test at the close of each fiscal year. If the local government permittee no longer meets the requirements of the local government financial test it shall, within 210 days following the close of the permittee's fiscal year, obtain alternative financial assurance that meets the requirements of this section, place the required submissions for that assurance in the operating record, and notify the Department that the permittee no longer meets the criteria of the financial test and that alternate assurance has been obtained.

(4) Calculation of Costs to be Assured. The portion of the closure, post-closure, and corrective action costs for which a permittee can assure under this Section is determined as follows:

(a) If the local government permittee does not assure other environmental obligations through a financial test, it may assure closure, post-closure, and corrective action costs that equal up to 43% of the local government's total annual revenue.

(b) If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40CFR144.62, petroleum underground storage tank facilities under 40CFR280, PCB storage facilities under 40CFR761, and hazardous waste treatment, storage, and disposal facilities under 40CFR264 and 265, it shall add those costs to the closure, post-closure, and corrective action costs it seeks to assure under this Item.

g. Local Government Guarantee. A permittee may demonstrate financial assurance for closure, post-closure, and corrective action, as required in this regulation, by obtaining a written guarantee provided by a local government. The guarantor shall meet the requirements of the Local Government Financial Test in Section E.4.f. above, and shall comply with the terms of a written guarantee.

(1) Terms of the Written Guarantee. The guarantee shall be effective before the initial receipt of waste, in the case of closure, post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with this regulation. The guarantee shall provide the following:

(a) If the permittee fails to perform closure, post-closure care, and/or corrective action of a facility covered by the guarantee, the guarantor shall:

i. Perform, or pay a third party to perform, closure, post-closure care, and/or corrective action as required; or,

ii. Establish a fully funded trust fund as specified in Section E.4.a. above in the name of the permittee.

(b) The guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the permittee and to the Department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the permittee and the Department, as evidenced by the return receipts.

(c) If a guarantee is canceled, the permittee shall, within 90 days following receipt of the cancellation notice by the permittee and the Department, obtain alternate financial assurance, place evidence of that alternate financial assurance in the facility operating record, and notify the Department. If the permittee fails to provide alternate financial assurance within the 90 day period, the guarantor shall provide that alternate assurance within 120 days following the guarantor's notice of cancellation, place evidence of the alternate assurance in the facility operating record, and notify the Department.

(2) Record Keeping and Reporting.

(a) The permittee shall place a certified copy of the guarantee along with the items required in Section E.4.f.(3) above, into the facility's operating record and submit a copy to the Department before the initial receipt of waste in the case of closure, and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with this regulation.

(b) The permittee is no longer required to maintain the records specified in Section E.4.g.(2) above for the guarantee when:

i. The permittee substitutes alternate financial assurance as specified in this section; or,

ii. The permittee is released from the requirements of this section pursuant to the requirements for proper closure, completion of the post-closure care period, or completion of the corrective action remedy.

(c) If a local government guarantor no longer meets the requirements of the Local Government Financial Test in Section E.4.f. above, the permittee shall, within 90 days, obtain alternative assurance, place evidence of the alternate assurance in the facility operating record, and notify the Department. If the permittee fails to obtain alternate financial assurance within that ninety (90) day period, the guarantor shall provide that alternate assurance within the next 30 days.

h. State Approved Mechanism. A permittee may satisfy the requirements of this section by obtaining any other mechanism that meets the criteria for the language of the mechanism as specified in Section E.4.k. below, and that is approved by the Department.

i. Certificates of Deposit.

(1) A permittee may demonstrate financial assurance, wholly or in part, by assigning all rights, title and interest of a Certificate of Deposit (Certificate) to the Department, conditioned so that the permittee shall comply with the closure, post-closure care, or corrective action plan filed for the site. The amount of the Certificate shall be in an amount at least equal to the current closure, post-closure care, or corrective action cost estimate, whichever is applicable, for the site for which the permit application has been filed or any part thereof not covered by other financial assurance mechanisms. The permittee shall maintain the Certificate until proper final closure, post-closure care, or corrective action is completed. The original assignment of the Certificate of deposit shall be submitted to the Department to prove that the Certificate has been obtained and meets the requirements of this section. The Certificate shall be in the sole name of the South Carolina Department of Environmental Services and shall be issued by a financial institution that is insured by the Federal Deposit Insurance Corporation or Federal Savings and Loan Insurance Corporation. The Certificate may not have a maturity date of less than six (6) months. Those Certificates with a maturity date of less than one year shall provide for automatic renewal. In those instances where renewal is not automatic, the permittee shall renew or replace the instrument no less than 60 days before the maturity date.

(2) In addition to the certificate of deposit, the owners/operators shall establish a standby trust fund to receive payments using a trustee that has the authority to act as a trustee and that is regulated and examined by a Federal or State agency. The text of the standby trust fund shall be provided by the Department.

(3) The permittee shall be entitled to demand, receive, and recover the interest and income from the Certificate as it becomes due and payable as long as the market value of the Certificate plus any other mechanisms used continue to at least equal the amount of the estimated current closure, post-closure care, or corrective action cost.

(4) Whenever the approved closure or post-closure maintenance care cost estimates or corrective action cost estimate increases to an amount greater than the amount of the certificate of deposit, the permittee shall, within 60 days of the increase, cause the amount of the certificate of deposit to be increased to an amount at least equal to the new estimate or obtain other financial assurance pursuant to this regulation to cover the increase. Anytime the cost estimate decreases, the permittee may reduce the amount of the certificate of deposit to the new estimate following written approval by the Department. The permittee shall

submit a certificate of deposit and assignment reflecting the new cost estimate within 60 days of the change in the cost estimate.

(5) The Department will return the original assignment and certificate of deposit, if applicable, to the issuing institution for termination when the permittee substitutes acceptable alternate financial assurance or if the permittee is no longer required to maintain financial assurance in accordance with this regulation.

j. Use of Multiple Financial Mechanisms. A permittee may demonstrate financial assurance for closure, post-closure, and corrective action, as required in this regulation by establishing more than one financial mechanism per facility except that mechanisms guaranteeing performance rather than payment, may not be combined with other instruments. The mechanisms shall be as specified in Sections E.4.a., b., c., d., e., f., g., h. and i., except that financial assurance for an amount at least equal to the current cost estimate for closure, post-closure care, and/or corrective action may be provided by a combination of mechanisms rather than a single mechanism.

k. The language of the mechanisms listed in Sections E.4. a., b., c., d., e., f., g., h. and i. of this section shall ensure that the instruments satisfy the following criteria:

(1) The financial assurance mechanisms shall ensure that the amount of funds assured is sufficient to cover the costs of closure, post-closure care, and corrective action for known releases when needed;

(2) The financial assurance mechanisms shall ensure that funds will be available in a timely fashion when needed;

(3) The financial assurance mechanisms shall be obtained by the permittee by the effective date of these requirements or prior to the initial receipt of solid waste, whichever is later, in the case of closure and post-closure care, and no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of this regulation until the permittee is released from the financial assurance requirements pursuant to this regulation;

(4) The financial assurance mechanisms shall be legally valid, binding, and enforceable under State and Federal law.

5. Discounting. The Department may allow discounting of closure cost estimates, post-closure cost estimates, and/or corrective action costs up to the rate of return for essentially risk free investments, net of inflation, under the following conditions:

a. The Department determines that the cost estimates are complete and accurate and the permittee has submitted a statement from a S.C. Registered Professional Engineer so stating;

b. The Department finds the facility in compliance with applicable and appropriate permit conditions;

c. The Department determines that the closure date is certain and the permittee certifies that there are no foreseeable factors that will change the estimate of site life; and,

d. Discounted cost estimates shall be adjusted annually to reflect inflation and years of remaining life.

6. Incapacity of Permittee or Financial Institution.

a. A permittee shall notify the Department by certified mail within 10 days of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the permittee as debtor.

b. In the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee or institution, that issues a surety bond, letter of credit, certificate of deposit, or insurance policy pursuant to this regulation, the permittee shall be deemed in violation of the financial assurance requirements. The permittee shall establish with Department approval other financial assurance within 60 days of such event.

7. Default by Permittee.

a. The Department may take possession of a financial assurance fund if the permittee fails to:

(1) Complete closure or post-closure maintenance care in accordance with the Department approved facility plan;

(2) Complete corrective action; or,

(3) Renew or provide alternate acceptable financial assurance as required.

b. Prior to taking possession of a financial assurance funds, the Department shall:

(1) Issue a notice of violation or order alleging that the permittee has failed to perform closure or post-closure care in accordance with the closure or post-closure care plan or permit requirements; and,

(2) Provide the permittee seven days notice and an opportunity for a hearing.

F. Permit Applicant Requirements.

1. Disclosure. Prior to issuance of a Department permit for Classes One, Two, and Three landfills, a disclosure statement, pursuant to S.C. Code Section 44-96-300 and in a format approved by the Department, shall be submitted to the Department. The Department may accept one disclosure statement for multiple facility permit applicants. This requirement shall not apply if the applicant is a local government or a region comprised of local governments. The disclosure statement shall contain the following information with regard to the applicant and his responsible parties:

a. The full name, business address, and social security number of all responsible parties;

b. A description of the experience and credentials, including any past or present permits or licenses for the collection, transportation, treatment, storage, or disposal of solid waste issued to or held by the applicant within the past five years;

c. A listing and explanation of all convictions by final judgment of a responsible party in a state or federal court, whether under appeal or not, of a crime of moral turpitude punishable by a fine of five thousand dollars ($5,000.00) or more or imprisonment for one year or more, or both, within five years immediately preceding the date of the submission of the permit application;

d. A listing and explanation of all convictions by final judgment of a responsible party in a state or federal court, whether under appeal or not, of a criminal or civil offense involving a violation of an environmental law punishable by a fine of five thousand dollars ($5,000.00) or more or imprisonment for

one year or more, or both, in a state or federal court within five years of the date of submission of the permit application;

e. A listing and explanation of the instances in which a disposal facility permit held by the applicant was revoked by final judgment in a state or federal court, whether under appeal or not, within five years of the date of submission of the permit application;

f. A listing and explanation of all adjudications of the applicant for having been in contempt of any valid court order enforcing any federal environmental law or any state environmental law relative to the activity for which the permit is being sought, within five years of the date of submission of the permit application; and,

g. If a responsible party of an applicant is a chartered lending institution or a publicly held corporation reporting under the Federal Securities and Exchange Act of 1934 or a wholly-owned subsidiary of a publicly held corporation reporting under the Federal Securities and Exchange Act of 1934, the information required under S.C. Code Section 44-96-300(A)(6), such responsible party shall submit to the Dept. reports covering its structure and operations as required by the chartering body or the Federal Securities and Exchange Commission. The Department is authorized to require a responsible party to provide such additional information to the Department as is reasonably necessary to make the determinations provided for in S.C. Code Section 44-96-300.

2. Permittee Requirements.

a. The permittee is required to notify the Department by certified mail within 10 days of any of the following conditions:

(1) Commencing a voluntary or involuntary proceeding in bankruptcy, naming the permittee as debtor;

(2) The sale of the holder of the permit or approval;

(3) The sale of the permitted or approved facility; or,

(4) The dissolution of the holder of the permit or approval.

b. Transfer of Ownership.

(1) The Department may, upon written request, transfer a permit to a new permittee where no other change in the permit is necessary. The proposed new owner of a permitted landfill shall, prior to the scheduled change in ownership, submit to the Department:

(a) Documentation of the new owner's name and address.

(b) Documentation of the name and address of the party responsible for the operation and maintenance of the landfill, if different from the owner.

(c) A written agreement signed by both parties indicating the intent to change ownership or operating responsibility of the facility. The agreement shall contain:

i. A specific date for the transfer of permit responsibility; and,

ii. A statement that the new permittee will operate the landfill in accordance with the existing permit in effect at the time of transfer.

(d) Documentation of financial assurance as required in Part I, Section E. of this regulation. The previous owner shall maintain financial assurance responsibilities until the new owner can demonstrate satisfactory compliance with Part I, Section E. of this regulation.

(e) A Disclosure Statement for the new owner pursuant to Subsection F.1. above.

(2) Upon approval of all items required by Subsection F.2.b.(1) above, the Department shall transfer the permit from the original owner of the landfill to the new owner.

(3) A request for a permit modification shall be submitted with the transfer of ownership request, if the landfill will not be operated in accordance with the approved plans. The permit modification shall be in accordance with all provisions of this regulation.

(4) The new owner shall submit legal documentation of the transfer of ownership of the landfill within 15 days of the actual transfer.

G. Severability. Should any regulation, paragraph, sentence, clause or phrase of this regulation be declared unconstitutional or invalid for any reason, the remainder of this regulation shall not be affected thereby.

H. Violations and Penalties. A violation of this regulation or violation of any permit, order, or standard subjects the person to the issuance of a Department order, or a civil or criminal enforcement action in accordance with S.C. Code Section 44-96-450. In addition, the Department may impose reasonable civil penalties not to exceed ten thousand dollars ($10,000.00) for each day of violation of the provisions of this regulation, including violation of any order, permit or standard.

I. Appeals.

1. A Department decision involving the issuance, denial, renewal, suspension, revocation or request for a variance of a permit may be appealed by an affected person with standing pursuant to applicable law, including S.C. Code Title 48, Chapter 6; and Title 1, Chapter 23. Any person to whom an order is issued may appeal it pursuant to applicable law.

2. Determinations of Need and Consistency pursuant to Part I, Section D.1. may be appealed at the time such determinations are issued and may not be raised as part of an appeal of a decision on the permit.

J. Variances. Any request for variances to these rules and regulations shall be directed in writing to, and will be considered by, the Department on an individual basis.

Part II. Permit-by-rule: Short Term Structural Fill.

A.General Provisions. Structural fill activities shall comply with the requirements in this Part.

1. Structural fill activity shall be deemed to have a permit for disposal of the items listed below when the site is registered with the Department, and designed, constructed and operated in compliance with the requirements in this Part. Written approval from the Department to operate under the Permit-by-rule shall be obtained prior to filling. Approval for structural fill areas may be issued per tract of land and no less than 500 feet from a present or former fill area on the same tract of land under the same ownership, unless otherwise approved by the Department.

2. Structural fill may not provide a sound structural base for building purposes.

3. Structural fill activity in rights-of-way directly related to road construction under contract with the S.C. Department of Transportation shall be exempt from this Part.

4. Department approved structural fill activity shall:

a. Have a proposed life of twelve (12) months or less;

b. Occupy one (1) acre in size or less;

c. Use only those items listed below that have not been contaminated by hazardous constituents listed in the S.C. Hazardous Waste Management Regulations 61-79.261 (e.g., pesticides), petroleum products, or painted with lead-based paint:

(1) Hardened concrete (may include rebar);

(2) Hardened asphaltic concrete;

(3) Bricks;

(4) Masonry blocks; and,

(5) Land-clearing debris; and,

d. Be consistent with the South Carolina Coastal Zone Management Plan if the fill area is located in the coastal zone as defined in SC Code Section 48-39-10.B.

5. Should the Department have sufficient reason to believe that environmental and/or health problems are associated with an area that contains structural fill material, monitoring (including groundwater, surface water, and air quality monitoring) may be required by the Department to ensure protection of the environment.

B. Permit-by-rule Registration Requirements.

1. Prior to engaging in structural fill activity, the landowner or landowner's agent shall receive written approval from the Department to operate under the Permit-by-rule for a specific site. "Agent" means one that acts for or as a representative of another. To request approval and register a site, a completed registration form provided by the Department and all information required by this Part shall be submitted to the Department. The Department will process the administratively complete registration and notify the owner/agent in writing if the site is approved for structural fill activity under the Permit-by-rule.

2. All required information submitted to the Department shall be complete and accurate. The landowner and agent shall sign the registration form and the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. To request approval to operate under the Permit-by-rule, three copies of the following documents shall be submitted to the Department:

a. A registration form provided by the Department;

b. A current county map showing the location of the proposed fill area;

c. Proof of ownership or control of the property;

d. Site information to include:

(1) A written description of the location of the area that will accept the fill material including road names/numbers;

(2) The source(s) supplying the fill material;

(3) The anticipated time frame for filling the area;

(4) The size of the area to be filled;

(5) The maximum volume the fill area will be capable of receiving; and,

(6) The latitude and longitude coordinates of the proposed fill area;

e. An explanation of how the waste will be compacted and the cover applied; and,

f. Other pertinent information as deemed appropriate by the Department.

C. Location Restrictions.

1. Buffers. The boundary of the fill area shall not be located within:

a. 100 feet of any property line. Variances may be requested and granted on a case-by-case basis upon submittal of written consent from the adjacent landowner(s);

b. 200 feet of any residence, school, day-care center, church, hospital and publicly owned recreational park area;

c. 200 feet of any surface water that holds visible water for greater than six consecutive months, excluding ditches, sedimentation ponds, and other operational features on the site;

d. 100 feet of any drinking water well. A greater buffer may be required for compliance with the Department's Bureau of Water requirements;

e. The right-of-way of underground or above ground utility equipment or structures, i.e., water lines, sewer lines, storm drains, telephone lines, electric lines, etc., without the written approval of the impacted utility; and,

f. 50 feet of any wetlands, unless the permittee has obtained the permits and/or authorizations required by all other state and federal laws and regulations for the impact of such wetlands.

2. Fill areas shall be adjacent to or have direct access to roads which are of all weather construction and capable of withstanding anticipated load limits.

D. Design Requirements for Structural Fill.

1. The fill area shall meet the following standards, unless otherwise approved in writing by the Department:

a. Fill areas located in the 100-year floodplain shall not restrict the flow of the 100-year flood;

b. The fill area shall be consistent with the South Carolina Coastal Zone Management Plan if the site is located in the coastal zone as defined in SC Code Section 48-39-10.B.;

c. Access to the structural fill area shall be controlled through the use of fences, gates, berms, natural barriers, or other means to prevent promiscuous dumping and unauthorized access; and,

d. Fill material shall not be placed in water. If the fill area becomes inundated with water, all water shall be removed before adding additional fill material.

2. Procedures shall be established for maintaining conditions that are unfavorable for the habitation and production of vectors.

E. Operating Criteria.

The following operational requirements shall apply to all structural fill activity, unless otherwise approved in writing by the Department:

1. The fill area shall accept only those waste items listed below that have not been painted with lead-based paint, and have not been contaminated by hazardous constituents listed in the S.C. Hazardous Waste Management Regulations 61-79.261 (e.g., pesticides), or petroleum products, and that have been reduced in size to less than or equal to one ($\leq$1) cubic yard pieces with no side exceeding three feet in length:

a. Hardened concrete (may include rebar);

b. Hardened asphaltic concrete;

c. Bricks;

d. Masonry blocks; and,

e. Land-clearing debris.

2. The fill area shall have an attendant on duty any time fill material is being received.

3. Unauthorized wastes shall be removed from the fill area to an approved facility within 48 hours of receipt.

4. The fill area shall be staked prior to receipt of fill material, and the stakes shall remain until the fill area is properly closed.

5. The unloading of fill material shall be restricted to the working face of the fill area.

6. The working face of the fill area shall be confined to as small an area as the equipment can safely and efficiently operate. The slope shall not exceed 33%.

7. The fill material shall be compacted and a cover consisting of a uniform layer of soil or other suitable material, or both, acceptable to the Department, no less than six 6 inches in depth shall be used to cover all exposed waste material at least every 30 days.

8. Open burning at fill areas shall be prohibited.

9. The fill area shall be maintained and operated in a manner that protects the established water quality standards of the surface waters and ground waters.

10. Dust, odors, fire hazards, litter and vectors shall be effectively controlled so they do not constitute nuisances or hazards.

F. Closure.

1. Within 12 months of the Department's issuance of approval to operate under the Permit-by-rule, the owner/agent of the filled area shall:

a. Apply a minimum two-foot thick final earth cover with at least a 1%, but not greater than 4% surface slope, graded to promote positive drainage. The side slope cover shall not exceed three horizontal feet to one vertical foot, i.e., a 3:1 slope;

b. Either:

(1) Begin construction of the foundation of a building project; or,

(2) Seed the finished surface of the filled area with native grasses or other suitable ground cover to establish and maintain into the second growing season a 75% or greater permanent vegetative cover with no substantial bare spots;

c. Using a form approved by the Department, record with the appropriate Register of Deeds a notation in the record of ownership of the property - or some other instrument which is normally examined during title search - that will in perpetuity notify any potential purchaser of the property that the land or a portion thereof has been structurally filled and list the specific items used for filling, e.g., clean brick; and,

d. Submit to the Department a copy of the document in which the notation required by Section F.1.c. above was placed.

2. Upon the Department's receipt of the document defined in Section F.1.c. above, the owner/agent's approval to fill under the Permit-by-rule for this site shall be terminated.

3. If the Department has sufficient reason to believe that there are environmental problems associated with the fill area, the owner/agent shall submit for Department review and approval, a corrective action plan and a schedule of compliance for implementing the plan.

Part III. Class One Landfills - General Permit for Disposal of Land-Clearing Debris and Yard Trash

A.General Permit.

1. The Department may issue a general permit for solid waste landfills used solely for the disposal of trees, stumps, wood chips, and yard trash that is generated from land-clearing activities, excluding agricultural and silvicultural operations when generation and disposal are on site. These landfills shall be limited to filling to grade, of low areas or depressions in the surface of the earth to include permitted mining sites for an aesthetic benefit or property enhancement. Beneficial fill does not provide a sound structural base for building purposes, but does provide an aesthetic benefit.

2. The general permit shall outline the following:

a. Submittal requirements;

b. Design criteria;

c. Operational criteria;

d. Monitoring, if applicable; and,

e. Closure and corrective action requirements, if applicable.

3. The general permit, pursuant to this Part, may be issued, modified, revoked and reissued, or terminated in accordance with applicable requirements of this regulation and subject to the terms and conditions in this regulation.

4. The Department shall publish a notice of any general permit issued, modified, revoked, or reissued.

B. General Provisions.

1. Landfills approved to operate under the General Permit shall be known as Class One landfills.

2. Class One landfills shall be consistent with the State and Region/County Solid Waste Management Plans, local zoning, land use and other applicable ordinances.

3. A Class One Landfill shall be covered under the State's general permit if it provides proper notification of intent to the Department as outlined in the general permit, and if constructed and operated in compliance with the requirements established by the permit and this regulation.

4. Prior to submittal to the Department of a written Notice of Intent, pursuant to Section C. below, the owners/operator seeking coverage under the general permit shall:

a. Publish a notice informing the public of the intent to operate under the General Permit. All notices shall be published once in a newspaper of general circulation in the area of the proposed landfill project and contain the following:

(1) Name and address of the applicant;

(2) The location of the proposed activity to include the county, roads and crossroads;

(3) The nature of the proposed activity;

(4) A description of the proposed site or a description of the proposed major modification;

(5) An explanation of the type(s) of waste that will be accepted;

(6) The Department's address and contact name for submittal of comments and inquires;

(7) The approximate tonnage/year expected for disposal at the landfill; and,

(8) The proposed life of the landfill.

b. Submit to the Department:

(1) A written Notice of Intent, pursuant to Section C. below, to be covered by the general permit on a form approved by the Department;

(2) An affidavit of publication in a newspaper for the public notice required in Section B.4.a. above;

(3) The names and addresses of the owners of real property as they appear on the county tax maps as contiguous landowners of the proposed permit area; and,

(4) A disclosure statement pursuant to Part I, Section F.1.

5. The Department will notify by certified mail, return receipt requested, all adjoining landowners of receipt of the Intent to Operate under the General Permit.

6. Written Department approval to operate under the General Permit shall be received prior to operation of a Class One landfill.

7. Upon a determination by the Department and written notification that the landfill poses an actual or potential threat to human health or the environment, the Department may require the permittee to implement corrective measures as appropriate.

8. A Class One Landfill's approval to operate under the general permit may be revoked for any of the following reasons:

a. The facility fails to comply with the conditions of the general permit or this regulation;

b. Circumstances have changed since the time of the requested approval to operate so that the permittee is no longer appropriately regulated under the general permit, or a temporary or permanent closure of the landfill is necessary; and,

c. Environmental and/or health problems associated with the landfill are detected by the Department.

9. When an individual solid waste landfill permit is issued to a permittee otherwise subject to the general permit, the applicability of the general permit to that landfill is automatically terminated on the effective date of the individual permit.

10. A landfill excluded from the general permit solely because it already has an individual landfill permit may request that the individual permit be revoked, and that the landfill be covered by the general permit. Upon revocation of the individual permit and approval of the Notice of Intent to operate under the general permit, the general permit shall apply to the landfill.

C. Notice of Intent.

1. Prior to landfilling land-clearing debris under the State's general permit, the permittee shall submit to the Department a Notice of Intent on a form approved by the Department. This Notice shall be accompanied by all information required by the general permit. All required information shall be complete and accurate.

2. The Notice of Intent shall be signed by the landfill applicant. The landowner shall also sign the Notice of Intent, thereby giving authorization for the proposed landfilling activity on said property. Any changes in the written authorization submitted to the Department which occur after the issuance of the Department's approval to operate under the general permit shall be reported to the Department by submitting a copy of the new written authorization.

3. Any person signing a Notice of Intent to landfill under the general information shall also sign the following certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

D. Record Keeping and Reporting Requirements. Landfills operating under the General Permit shall submit in a format approved by the Department an annual report for the fiscal year beginning on July 1, and ending on June 30. This report shall be submitted to the Department on or before September 1, and shall identify the actual weight in tons or volume in cubic yards of wastes received per month at the land-clearing debris and yard trash landfill. Any records required by this regulation shall be retained near the facility in an operating record, or in an alternative location approved by the Department for a period of no less than three years.

Part IV. Class Two Landfills.

A. General Provisions.

1. Applicability. Part IV. establishes minimum criteria for all landfills used for the disposal of: waste as outlined in Appendix I of this regulation; other wastes not listed in Appendix I that demonstrate similar properties to the wastes listed and are approved by the Department on a case-by-case basis; or, wastes that test less than ten (<10) times the maximum contaminant level (MCL) as published in R.61-58, State Primary Drinking Water Regulation current at the time of submittal of the permit application. The testing criteria outlined in Part I., Section C. Waste Characterization shall be used when testing is required. Hereinafter, these landfills will be referred to as Class Two landfills.

2. The siting, design, construction, operation, and closure activities of Class Two landfills shall conform to the standards set forth in this Part as well as applicable requirements in Part I of this regulation.

3. Prior to the construction, operation, expansion or modification of a Class Two landfill, a permit shall be obtained from the Department.

4. Only those items listed in Appendix I of this regulation, approved Appendix I-type waste, and any items specifically listed on the facility's permit issued by the Department may be accepted for disposal at a Class Two landfill. These wastes shall not be contaminated with hazardous constituents listed in the S.C. Hazardous Waste Management Regulations 61-79.261 (e.g., pesticides), or petroleum products. When a waste not listed in Appendix I is approved by the Department for disposal, the landfill's permit will be modified to add the approved waste. A list of Appendix I-type waste will be available from the Department.

5. Class Two landfills shall be consistent with the State and the Region/County Solid Waste Management Plans, local zoning, land use and other applicable ordinances. On-site landfills are not required to demonstrate consistency with the State and Region/County Solid Waste Management Plans.

B. Location Restrictions.

1. Buffers. Unless otherwise approved by the Department, the site for a new landfill or expansion of an existing landfill shall meet the following standards:

a. The boundary of the fill area shall not be located within 1,000 feet of any residence, school, day-care center, church, hospital, or publicly owned recreational park area. The Department will determine whether the new landfill or expansion of an existing landfill meets this requirement prior to the publication of the Notice of Intent to File a Permit Application pursuant to Part I, Section D.1 of this Regulation;

b. A landfill located in a 100-year floodplain shall demonstrate that engineering measures have been incorporated into the landfill design to ensure the landfill will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the flood plain, minimize potential for floodwaters coming into contact with waste, or result in the washout of solid waste so as to pose a hazard to human health or the environment;

c. The landfill shall be in compliance with applicable requirements concerning wetlands imposed by the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Department;

d. Access to the landfill shall be controlled through the use of fences, gates, berms, natural barriers, or other means to prevent promiscuous dumping and unauthorized access;

e. The boundary of the fill area shall not be located within 100 feet of any property line. An exemption may be issued by the Department upon receipt of written approval from adjacent property owners;

f. The boundary of the fill area shall not be located within 200 feet of any surface water that holds visible water for greater than six consecutive months, excluding drainage ditches, sedimentation ponds and other operational features on the site;

g. The boundary of the fill area shall not be located within 100 feet of any drinking water well. A greater buffer may be required for compliance with the Department's Bureau of Water requirements;

h. Waste material shall not be placed on or within any property rights-of-way or 50 feet of underground or above ground utility equipment or structures, i.e., water lines, sewer lines, storm drains, telephone lines, electric lines, natural gas lines, etc., without the written approval of the impacted utility.

2. Airport Safety. These requirements apply to all Class Two landfills permitted/approved for disposal of animal carcasses.

a. Owners/operators of all Class Two landfills located within 10,000 feet of any runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used by only piston-type aircraft shall demonstrate that the units are designed and operated so that the Class Two landfill does not pose a bird hazard to aircraft.

b. Owners/operators proposing to site new Class Two landfills and lateral expansions located 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 (FAA).

C. Operation Criteria for Class Two Landfills.

1. Owners/operators of all Class Two landfills shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in R.61-79 Hazardous Waste Management Regulations, Part 261, polychlorinated biphenyls (PCB) wastes as defined in Resource Conservation and Recovery Act (RCRA), Part 761, and wastes not specifically allowed by the permit. This program shall include, at a minimum:

a. Inspections of all incoming loads when deposited and prior to compaction unless the permittee takes other steps to ensure that incoming loads do not contain regulated hazardous wastes, PCB wastes, or wastes not specifically allowed by the permit;

b. Records of unacceptable waste to include waste quantity and description and generator information;

c. Training of facility personnel to recognize wastes not specifically allowed by the permit, regulated hazardous waste and PCB wastes; and,

d. Notification of the Department within 72 hours if the operator suspects that a regulated hazardous waste or PCB waste has been discovered at the facility.

2. The Class Two landfill shall, prior to receipt of any waste materials that are not specifically listed in the permit application, submit for Department approval a characterization of the waste materials to determine the suitability for disposal in the landfill unless the Department grants an exemption for like materials.

3. Unless otherwise approved by the Department:

a. Unauthorized wastes shall be removed from the working face prior to cover or at the end of the working day, whichever occurs fist, and placed into an appropriate container; and,

b. Unauthorized waste shall be removed from the site for proper disposal no less than every 30 days unless otherwise approved by the Department. Putrescible waste shall be removed from the working face, placed in a container, and removed from the site within 72-hours of receipt. The Department may require more frequent removal based on the nature or quantity of other unacceptable waste.

4. The unloading of solid waste intended for disposal in the landfill shall be restricted to the working face of the landfill. Unloading of the waste adjacent to the working face within the permitted boundaries of the landfill may be allowed for the purpose of screening the waste stream.

5. The working face of the landfill shall be confined to as small an area as the equipment can safely and efficiently operate. The slope shall not exceed 33%.

6. Solid waste shall be spread in uniform layers to the extent practical and compacted to its smallest practical volume.

7. A uniform compacted layer of clean earth cover or other suitable cover material acceptable to the Department, no less than six (6) inches in depth shall be placed over all exposed waste material at least every 30 days, unless otherwise approved by the Department. The frequency of cover may be increased or decreased as determined by the Department. More frequent cover may be required by the Department based on the nature of the disposed materials and daily disposal rate in order to address landfill gas generation, odor, leachate formation or any environmental safety and health problems.

8. Open burning at landfills is prohibited.

9. The site shall be maintained and operated in a manner that protects the established water quality standards of the surface waters and ground waters.

10. Dust, odors, fire hazards, litter and vectors shall be effectively controlled so they do not constitute nuisances or hazards.

11. The landfill shall have an attendant on duty at all times the facility is open.

12. Sign Requirements. Signs shall be posted and maintained at the main entrance that:

a. Identify the owner, operator, or a contact person and telephone number in case of emergencies and the normal hours during which the landfill is open to receive waste;

b. State the types of waste that the landfill is permitted to receive; and,

c. Identify the valid SCDES Facility Identification Number.

13. Class Two landfills shall install and maintain scales capable of accurately determining the weight of incoming waste streams. Landfills that receive less than 10,000 tons/year are exempt from this requirements.

14. On-site landfills are exempt from Sections 11. 12. and 13. above.

15. Prior to accepting any materials containing asbestos for disposal at the landfill, the operator shall include in its landfill records a copy of the Permission for Disposal letter from the Department. The landfill shall retain these letters for a period of not less than three years and shall make them available to the Department upon request, if applicable.

16. Reporting Requirements.

a. Contingency Plan. Upon implementation of a contingency plan, the Department shall be notified immediately by telephone of actions taken. Written confirmation shall be sent to the Department within 72 hours.

b. Groundwater Monitoring. Reporting requirements as outlined in Subpart E. below.

c. Landfill Operation.

(1) Landfills, with the exception of on-site landfills, shall maintain daily records of:

(a) The actual weight in tons of waste received; and,

(b) The particular grid location of the area currently being used for disposal of solid waste.

(2) Landfills shall submit in a format approved by the Department an annual report for the fiscal year beginning on July 1 and ending on June 30. This report shall be submitted to the Department on or before September 1, and shall include the information outlined below:

(a) The actual weight in tons of wastes received per month;

(b) The county of origin of the waste; and,

(c) A description of the capacity of the landfill used in the previous fiscal year and the remaining permitted capacity. A yearly survey conducted by a S.C. certified land surveyor or engineer may be required by the Department on a case-by-case basis.

d. Any records required by this regulation for Class Two landfills shall be retained near the facility in an operating record, or in an alternative location approved by the Department, for a period of no less than three years.

17. Access to fire equipment and firefighting services shall be provided.

18. Procedures shall be established for maintaining conditions that are unfavorable for the habitation and production of insects, rodents and other pests.

19. A groundwater monitoring system shall be installed in accordance with Section E. below.

20. The landfill shall be adjacent to or have direct access to roads that are of all-weather construction and capable of withstanding anticipated load limits.

21. A gas monitoring system shall be designed and installed as required on a case-by-case basis to ensure that gas generated at the landfill will not create a hazard to health, safety, or property.

D. Design Criteria for Class Two Landfills.

1. The estimated deflected (or settled) bottom elevation of the landfill base grade shall be a minimum of two feet above the seasonal high water table elevation as it exists prior to the construction of the disposal area. The seasonal high water table shall be determined by interpretation of a minimum of 12 months data obtained from a representative number of monitoring wells approved by the Department. In cases where there is insufficient information to support the seasonal high water table elevation determination, additional separation may be required by the Department. The Department will inspect the landfill prior to the initial placement of waste in the landfill.

2. Drainage control requirements.

a. The disposal area shall be graded with a minimum of a 1% slope so as to divert and minimize run-off into the disposal area of the landfill, to prevent erosion and ponding within the disposal area, and to drain water from the surface of the landfill.

b. Prior to accepting waste, the owners/operators shall design, construct, and subsequently maintain:

(1) A run-on control system to prevent flow onto the active portion of the landfill during peak discharge from a 24-hour, 25-year storm; and,

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

c. An appropriate permit from the Department may be required prior to the discharge of any storm waters to surface waters.

E. Groundwater Monitoring and Corrective Action.

1. General Groundwater Monitoring Requirements.

a. All submittals made to the Department in compliance with this Section shall be signed and stamped by a qualified professional.

b. All Class Two landfills shall implement a groundwater monitoring program as follows:

(1) New Class Two landfills, or lateral expansions of existing Class Two landfills shall submit a groundwater monitoring plan to monitor the entire landfill that meets the requirements of this Section as part of the permit application; and,

(2) Existing Class Two landfills shall, within 180 days of the effective date of this regulation, submit to the Department either a groundwater detection monitoring plan that meets the requirements of this Section, or written notification that the landfill plans to cease accepting waste within one year or less from the effective date of this regulation. Within 180 days of the Department's approval of the groundwater detection monitoring plan, the monitoring system shall be installed at the landfill. Facilities that cease accepting waste within one year of the effective date of this regulation are exempt from the groundwater monitoring requirements outlined herein. Landfills meeting this exemption shall submit a closure plan to the Department within 180 days of the effective date of this regulation. Additional time may be allowed for the installation of the groundwater monitoring system with prior approval from the Department;

(3) Existing Class Two landfills which have been performing groundwater monitoring prior to the requirements of this regulation shall within 90 days of the effective date submit to the Department certification by a qualified professional that the existing groundwater monitoring program meets the intent of this regulation. Any changes necessary to the existing groundwater monitoring system to ensure compliance with this regulation should be discussed in the certification letter.

c. A groundwater monitoring system shall consist of a sufficient number of wells installed at appropriate locations and depths to yield representative groundwater samples from the uppermost aquifer that can determine if contamination has occurred due to a release from the landfill. There shall be a minimum of one well up-gradient and three wells down-gradient of the disposal unit. These wells shall:

(1) Represent the quality of background groundwater that has not been affected by the landfill; and,

(2) Represent the quality of groundwater passing from beneath the waste disposal area footprint. The downgradient monitoring system shall be installed as close as practical to the actual disposal area but

no further than 150 feet from the actual disposal area unless previously installed with Department approval, and shall ensure detection of any groundwater contamination in the uppermost aquifer.

d. The number, spacing, and depths of the wells in the monitoring network shall be determined based upon site-specific technical information that shall include thorough characterization of:

(1) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and,

(2) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to: thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

e. Monitoring wells shall be approved by the Department prior to installation and shall be constructed, at a minimum, to the standards established in the South Carolina Well Standards, R.61-71.H.

(1) The permittee shall maintain an operating record that contains documentation of the design, installation, development, and abandonment of any monitoring wells, piezometers and other measurement, sampling, and analytical devices; and,

(2) The monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be maintained and operated so that they perform to design specifications throughout the life of the monitoring program.

(3) All monitoring wells, piezometers or other environmental sampling locations shall be located by a South Carolina Certified Land Surveyor. For wells, the elevation of the ground surface and the elevation of the top of the well casing shall also be determined to the nearest 0.01 ft above mean sea level.

f. Routine groundwater monitoring shall continue while the facility is performing detection monitoring, assessment or remediation activities.

g. The groundwater monitoring program shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality. A laboratory certified by South Carolina under R.61-81 State Environmental Laboratory Certification Program for the sample preparations and analysis methods employed shall conduct all groundwater analysis required by this regulation.

(1) The permittee shall submit to the Department for review and approval, a sampling and analysis plan outlining procedures and protocols to be used at the facility. The plan shall include procedures and techniques for:

(a) Sample collection;

(b) Sample preservation and shipment;

(c) Analytical procedures;

(d) Chain of custody control; and,

(e) Quality assurance and quality control.

(2) The groundwater monitoring program shall include approved sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure the constituents in groundwater samples. Analytical methods chosen shall have a practical quantitation limit (PQL) that is less than the Maximum Concentration Level (MCL) for those constituents that have a MCL as established by the State Primary Drinking Water Regulation R.61-58. Groundwater samples required by this regulation shall not be field-filtered prior to laboratory analysis.

(3) Groundwater potentiometric elevations shall be measured and recorded for each well prior to initiating sampling procedures each time groundwater is sampled. Groundwater elevations in wells must be measured on the same day to avoid temporal variations in groundwater elevations that could preclude an accurate determination of groundwater flow rate and direction. The permittee must determine the potentiometric surface of each aquifer unit comprising the uppermost aquifer and report the rate and direction of groundwater flow each time groundwater is sampled.

(4) The results and supporting documentation, e.g., field data sheets, laboratory quality assurance/quality control testing, for all groundwater sample analysis taken during detection monitoring shall be submitted to the Department in accordance with the reporting requirements in this Subpart.

h. The permittee shall submit to the Department on or before the anniversary date of issuance of the permit, an annual report for the previous year containing the results of the requirements of this Section. The annual report shall contain the following:

(1) A summary of all analytical testing performed at the site during the previous year, and any applicable data concerning sampling and analysis of monitoring wells at the site;

(2) A determination of the technical sufficiency of the monitoring well network in detecting a release from the facility;

(3) A determination of groundwater elevations, groundwater flow directions and groundwater flow rates as specified in Section E.1.g.(3) above. Groundwater flow directions shall be based upon interpretation of a potentiometric map prepared utilizing the groundwater elevations measured at the site; and,

(4) Recommendations for any changes to the groundwater monitoring system, or any necessary actions to be performed at the site to ensure compliance with the groundwater monitoring requirements.

2. Groundwater Detection Monitoring Requirements.

a. Groundwater detection monitoring is required at Class Two solid waste landfills. The detection monitoring program shall include at a minimum, monitoring for the constituents listed in Appendix III.

(1) The Department may require additional groundwater monitoring parameters for routine monitoring based on the chemical and physical nature of the waste stream received by the landfill.

(2) The Department may delete specific monitoring parameters for a Class Two solid waste landfill if it can be shown that the constituent(s) are not reasonably expected to be contained in or derived from the waste contained in the unit. The deletion of specific constituents will be based on the permittee's knowledge of each waste stream disposed of in the facility and the operational controls of the facility.

b. For Class Two solid waste landfills, the detection monitoring frequency for all constituents required by this subpart shall be at least semiannual during the active life of the facility (including closure) and

annual during the post-closure period. At least one sample from each well (background and downgradient) shall be collected and analyzed during each sampling event.

c. For Class Two solid waste landfills, the Department may approve an appropriate alternate frequency for repeated sampling and analysis for the constituents listed in Appendix III during the active life (including closure) and the post-closure care period to ensure protection of human health and the environment. The alternative frequency during the active life (including closure) shall be no less than the frequency specified in Section E.2.b. above. The alternative frequency shall be based on consideration of the following factors:

(1) Lithology of the aquifer and unsaturated zone;

(2) Hydraulic conductivity of the aquifer and unsaturated zone;

(3) Groundwater flow rates;

(4) Minimum distance between upgradient edge of the Class Two solid waste landfill footprint and downgradient monitoring well screen (minimum distance of travel); and

(5) Resource value of the aquifer.

d. During semiannual groundwater sampling, the two sampling events shall be scheduled approximately six (6) months apart. The submittal of data for one of the sampling events shall meet annual report requirements outlined in E.1.h.. For the other semiannual sampling event, the analytical data only shall be submitted to the Department. In all cases, the groundwater analytical results shall be submitted to the Department within 60 days of sample collection. In cases where the Department has approved an alternate sampling frequency, the Department will approve an appropriate schedule for submittal of groundwater data.

e. If the permittee determines that groundwater concentrations are above the PQL but below the MCL for any constituent listed in Appendix III, at any monitoring well (unless the constituent is being addressed by Section E.3. below) the permittee shall:

(1) Place a notice in the operating record showing which constituents have shown an exceedance above the PQL; and,

(2) Provide a notification of the results to the Department in the next regularly scheduled report and provide a discussion on the cause of this result.

f. If the permittee determines that groundwater concentrations are above the MCL, for any constituent listed in Appendix III at any monitoring well, the permittee shall:

(1) Notify the Department within 14 days of receiving the analytical results;

(2) Resample the monitoring well(s) in question for the constituents(s) in question to determine the validity of the data within 30 days of receiving the analytical results, unless the Department approves an alternate frequency. If the permittee chooses not to resample, then the initial exceedance(s) of the MCL shall be considered valid;

(3) Within 14 days of receiving the results of validation sampling required by Section E.2.f.(2) above, place a notice in the operating record and notify the Department of the results of the resampling;

(4) If resampling does not validate that the results are above applicable levels, return to routine detection monitoring; or,

(5) If resampling does validate the initial exceedance of the MCL, then establish an assessment monitoring program meeting the requirements of Section E.3. within 90 days of receiving the results of validation sampling required by Section E.2.f.(2), except as provided for in Section E.2.g. below.

g. The permittee may demonstrate that a source other than the Class Two landfill caused the contamination or that the concentration resulted from an error in sampling, analysis, or natural variation in groundwater quality. A report documenting this demonstration shall be placed in the operating record after being signed and stamped by a qualified professional and approved by the Department. If a successful demonstration is made and documented, the permittee may continue detection monitoring as specified in this Section. If, after 90 days of completing Section E.2.f.(2) above, a successful demonstration is not made, the permittee shall initiate an assessment monitoring program as required in Section E.3.

3. Assessment of Groundwater Impact.

a. Assessment monitoring is required whenever a release has been detected and validated, in accordance with Section E.2.f. above for any constituent listed in Appendix III, unless a successful demonstration has been made in accordance with Section E.2.g. above.

b. Within 90 days of validating an exceedance as outlined in E.2.f.(2), the permittee shall sample all groundwater monitoring wells identified as impacted for all constituents listed in Appendix V. Any additional constituents detected during this sampling shall be added to the assessment program.

c. The permittee shall establish a groundwater protection standard for each constituent detected in the groundwater. The groundwater protection standard shall be:

(a) For constituents for which a MCL has been promulgated under South Carolina R.61- 58, State Primary Drinking Water Regulations, the MCL for that constituent;

(b) For constituents for which MCLs have not been promulgated, the drinking water risk-based number recognized by EPA Region IV; or,

(c) For constituents for which the background level is higher than the MCL identified under Section E.3.b.(3)(a) above or risk-based concentration identified under Section E.3.b.(3)(b) above, as applicable, the background concentration.

(d) For any parameter for which a groundwater protection standard cannot be established per E.3.c.(a), (b), or (c) above, the Department, using input from the permittee, will develop an appropriate groundwater protection standard. In establishing this groundwater protection standard, the Department may consider the following provided these criteria meet the intent of the South Carolina Water Classifications and Standards R.61-68:

(1) Multiple contaminants in the groundwater;

(2) Exposure threats to sensitive environmental receptors; and,

(3) Other site-specific exposure or potential exposure to groundwater.

d. The permittee shall submit to the Department for review and approval a groundwater quality assessment plan for characterizing the nature and extent of the release within 90 days of receiving the results of the sampling outlined in Section E.3.b. above. The groundwater quality assessment plan shall:

(a) Ensure that the nature and extent of the release is fully characterized by installing additional monitoring wells, as necessary;

(b) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with this section;

(c) In cases where contamination is present at the property boundary, take reasonable measures to gain access for offsite sampling;

(d) Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with this section; and,

(e) Contain a detailed schedule for the implementation and completion of the provisions of the plan.

e. Upon completion of assessment activities outlined in this section, the permittee shall initiate an assessment of corrective measures as required by Section E.4.a. below within 90 days.

f. Based upon the outcome of the assessment outlined in this section, the Department may add additional monitoring wells, additional constituents, or additional sampling frequency to the routine detection monitoring program, required by Section E.2.above.

4. Groundwater Remediation.

a. Upon completion of the groundwater quality assessment, the permittee shall evaluate potential corrective actions to address groundwater quality. Based on the outcome of this evaluation, the permittee shall select a remedial action strategy and submit a remedial action plan to be approved by the Department. The remedial action plan shall contain a schedule for the initiation and completion of remedial activities.

b. The remedial action plan shall:

(1) Be protective of human health and the environment;

(2) Attain the groundwater protection standard as specified pursuant to Section E.3.b.(3) above;

(3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of constituents into the environment that may pose a threat to human health or the environment;

(4) Consider the long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(a) Magnitude of reduction of existing risks;

(b) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;

(c) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(d) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;

(e) Time until full protection is achieved;

(f) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

(g) Long-term reliability of the engineering and institutional controls; and,

(h) Potential need for replacement of the remedy.

(5) Consider the effectiveness of the remedy in controlling the source to reduce further releases based on the extent to which containment practices will reduce further releases; and,

(6) Contain monitoring considerations to prove the effectiveness of the selected remedial action, which may be in addition to those constituents contained in the detection monitoring program.

c. The Department may determine that remediation of a release of a constituent from a Class Two landfill is not necessary if the permittee satisfactorily demonstrates to the Department that:

(1) The groundwater is additionally contaminated by substances that have originated from a source other than the Class Two solid waste landfill and those substances are present in concentrations such that cleanup of the release from the Class Two solid waste landfill would provide no significant reduction in risk to actual or potential receptors; or,

(2) The constituent(s) is present in groundwater that:

(a) Does not currently meet the definition of an underground source of drinking water per South Carolina Water Classifications and Standards R.61-68; and,

(b) Is not hydraulically connected with waters to which the constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under Section E.3.c. above; or,

(3) Remediation of the release(s) is technically impracticable; or,

(4) Remediation results in unacceptable cross-media impacts.

d. A determination by the Department pursuant to Section E.4.c. above shall not affect the authority of the Department to require the permittee to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the

groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

e. During the course of implementing the corrective action, the permittee may be required to take any interim measures necessary to ensure the protection of human health and the environment. Interim measures should, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to this section. A permittee in determining whether interim measures are necessary shall consider the following factors:

(1) Time required to develop and implement a final remedy;

(2) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

(3) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(4) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(5) Weather conditions that may cause hazardous constituents to migrate or be released;

(6) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and,

(7) Other situations that may pose threats to human health and the environment.

f. If the permittee determines that compliance with requirements of this section cannot be practically achieved with any currently available methods, the permittee shall:

(1) Obtain certification of a qualified professional and approval by the Department, that compliance with requirements under Section E.4. cannot be practically achieved with any currently available methods;

(2) Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and,

(3) Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

(a) Technically practicable; and,

(b) Consistent with the overall objective of the remedy.

g. Upon completion of the remedy, the permittee shall submit to the Department a certification signed by a qualified professional stating that the remedy has been completed in compliance with the requirements of Section E.4.

h. Upon the Department's approval of the certification required in Section E.4.g. above, the Class Two landfill shall return to detection monitoring as outlined in Section E.2. of this Part.

F. Closure and Post-Closure Care.

1. Closure. The termination of disposal operations at a Class Two landfill, whether the entire landfill site or a portion thereof, shall be in compliance with the following requirements.

a. Within one month following the last receipt of solid waste at a site or a part of the site, the application of final cover shall begin. A two foot thick final earth cover is required with at least a 3% but not greater than 5% surface slope, graded to promote positive drainage. The side slope cover shall not exceed three horizontal feet to one vertical foot, i.e., a 3:1 slope. Alternate final cover designs may be submitted for Department review and approval. Unless otherwise approved by the Department, the application of final cover shall be completed within six months of the last receipt of solid waste at the facility. The integrity of the final cover shall be maintained.

b. Testing for certification of cap closure by a South Carolina certified professional engineer shall be done at a rate of four thickness tests per acre as defined by best engineering and construction practices.

c. The storm water conveyance system for the landfill shall be designed to ensure that the system is capable of handling a 24-hour, 25-year storm event during the active life and post-closure period of the landfill.

d. The finished surface of the disposal area shall be seeded with native grasses or other suitable ground cover within 15 days of the completion of that portion of the landfill.

e. Within 15 days of closure of the entire landfill, the permittee shall post signs at the landfill that state the facility is no longer in operation. On-site landfills are exempt from this requirement.

f. Upon closure of the entire or a portion of the landfill and within 30 days of grading and seeding, pursuant to Section F.1.d. above, a professional engineer licensed in the State of South Carolina shall submit to the Department certification that the landfill has been properly closed in accordance with requirements outlined in this Part and the facility's permit. Upon receipt of certification of closure, the Department will schedule an inspection of the facility. Upon issuance of the Department's final closure approval, the Department's permit for this facility shall be modified to incorporate post-closure activities.

g. Within 30 days of the Department's issuance of final closure approval, the owner shall:

(1) Using a form approved by the Department, record with the appropriate Register of Deeds a notation in the record of ownership of the property - or some other instrument that is normally examined during title search - that will in perpetuity notify any potential purchaser of the property, that the land or a portion thereof, was used for the disposal of solid waste. This notation shall define the final boundaries of the waste disposal area including the latitude and longitude, and identify the type, location, and quantity of solid waste disposed of on the property; and,

(2) Submit to the Department:

(a) A plat showing the final boundaries of the waste disposal area of the closed landfill; and,

(b) A copy of the document in which the notation required by Section F.1.g.(1) above has been placed.

2. Post-closure Care Requirements.

a. Following closure of each Class Two landfill, the permittee shall conduct post-closure care. Post-closure care shall be conducted for a minimum of 20 years, except as provided under Subsection b.2.below, and consist of at least the following:

(1) Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover. A 75% or greater vegetative ground cover with no substantial bare spots shall be established and maintained throughout the post-closure period; and,

(2) Monitoring the groundwater in accordance with the requirements of Section E of this Part and maintaining the groundwater monitoring system. Groundwater monitoring data shall be submitted to the Department during the post-closure care period within 60 days of sample collection.

b. The length of the post-closure care period may be:

(1) Increased by the Department if the Department determines that the lengthened period is necessary to protect human health and the environment or the facility has groundwater impacts remaining at the end of the post-closure period;

(2) Decreased by the Department if the permittee can provide technical rationale that the decreased post-closure care period is sufficient to protect human health and the environment.

c. The permittee of all Class Two landfills shall prepare a written post-closure plan that includes, at a minimum, the following information:

(1) A description of the monitoring and maintenance activities required in Item 2.a.. above for each Class Two landfill;

(2) Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and,

(3) A description of the planned uses of the property during the post-closure period. Post- closure use of the property shall not disturb the integrity of the final cover, or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements of this regulation. The Department may approve any other disturbance of the containment system if the permittee demonstrates that disturbance of the final cover, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.

d. Prior to permit issuance, the permittee shall submit to the Department a post-closure plan for review and approval. The post-closure plan shall be updated if any changes occur at the facility which require a deviation from the approved post-closure plan.

e. Following completion of the post-closure care period for each Class Two landfill, the permittee shall submit to the Department certification, signed by a South Carolina registered professional engineer other than the design engineer, verifying that post-closure care has been completed in accordance with the post-closure plan.

G. Financial Assurance Criteria. (See Part I, Section E. of this regulation.)

H. Permit Application Requirements. Prior to the construction, operation, expansion or modification of a Class Two landfill, a permit shall be obtained from the Department.

1. Prior to submitting a permit application to the Department, the applicant shall satisfactorily complete the following:

a. Determination of Need. The applicant shall submit to the Department a request pursuant to Regulation 61-107.17 for determining need of a proposed landfill or landfill expansion, if applicable.

b. Consistency Determination. The applicant shall submit to the Department a request for a determination of consistency with items listed below.

(1) State and County/Region Solid Waste Management Plans. The permit applicant shall demonstrate consistency with the State Solid Waste Management Plan in effect at the time of the request for a determination of consistency. The permit applicant shall demonstrate consistency with the county/region plan in effect at the time of the request for a determination of consistency. Class Two landfills managing solid waste generated solely in the course of normal operation on property under the same ownership or control as the Class Two landfill are not required to demonstrate consistency with the State and host County/Region Solid Waste Management Plans;

(2) Local zoning and land-use ordinances. Documentation demonstrating consistency with local zoning and land-use plans, e.g., zoning map, land-use map, and applicable part of the zoning ordinance shall be submitted to the Department; and,

(3) All other applicable local ordinances. Supporting documentation to include a copy of the ordinance shall be submitted to the Department.

(4) Buffer Requirement. The applicant shall demonstrate that it meets the buffer requirement set forth in Part IV, Section B.1.a. of this Regulation at the time of submittal of the demonstration.

c. If the Department's final determination of need is terminated, pursuant to R.61-107.17, all other determinations under Section H.1.a. and b. above will also be void.

2. Administrative Review. Upon satisfactory completion of Section H.1. above, the applicant shall submit to the Department a complete permit application. The applicant shall submit to the Department three copies of the following documents:

a. A completed permit application on a form provided by the Department;

b. A cost estimate for hiring a third party to close the sum of all active areas of the landfill requiring a final cover at any time during the operating life when the extent and manner of its operation would make closure the most expensive, as indicated in the closure plan. This estimate shall be sufficient to ensure satisfactory closure and post-closure maintenance of the landfill and requires Department approval prior to the permittee establishing a financial assurance mechanism pursuant to Part I, Section E. of this regulation;

c. A Disclosure Statement pursuant to Part I, Section F.1;

d. Complete engineering plans, drawings and reports in accordance with Section H.4 below, that are stamped by a Professional Engineer duly licensed to practice in the State of South Carolina; and,

e. The names and addresses of the owners of real property as they appear on the county tax maps as contiguous landowners of the proposed permit area.

f. Tonnage Limit. The applicant shall submit to the Department a request for a determination of a maximum annual tonnage limit.

(1) Prior to the issuance of a permit for a new or expanded commercial Class Two landfill, the Department will approve a maximum annual tonnage limit based on the facility's design capacity, operational capacity, the expected operational life, and the planning area as determined by R.61-107.17, SWM: Demonstration-of-Need; provided, however, that the maximum annual tonnage limit must not exceed the maximum yearly disposal rate pursuant to R. 61-107.17.

(2) Prior to issuance of a permit for a new or expanded noncommercial Class Two landfill, the Department will approve a maximum annual tonnage limit based on the facility's design capacity, operational capacity, and the expected operational life.

3. Public Notice. When the submittal is administratively complete, the Department will notify the applicant in writing. Within 15 days of receipt of notification from the Department, the applicant shall publish notice of the permit application pursuant to Part I, Section D.2. of this regulation, and submit an affidavit of publication of the public notice in the newspaper to the Department.

4. Technical Review. After determining that the permit application is administratively complete, the Department will conduct a Technical Review of the proposed project. The Department's technical review of the permit application will involve the following:

a. Engineering Drawings and Plans. All applications for new Class Two landfills and landfill expansions shall contain engineering drawings that set forth the proposed landfill location, property boundaries, adjacent land uses and construction details. All construction drawings shall be bound and rolled and shall contain the following:

(1) A vicinity plan or map that shows the area within one mile of the property boundaries of the landfill in terms of: the existing and proposed zoning and land uses within that area at the time of permit application; and, residences, public and private water supply wells, known aquifers, surface waters (with quality classifications), access roads, bridges, railroads, airports, historic sites, and other existing and proposed man-made or natural features relating to the facility. The plan shall be on a scale of not greater than 500 feet per inch, unless otherwise approved by the Department.

(2) A site plan on a scale of not greater than 200 feet per inch unless otherwise approved by the Department. This plan shall at a minimum identify the following:

(a) The landfill's property boundaries, as certified by an individual licensed to practice land surveying in the State of South Carolina; off-site and on-site utilities (such as, electric, gas, water, storm, and sanitary sewer systems), right-of-ways and easements; the names and addresses of abutting property owners; the location of soil borings, excavations, test pits, gas venting structures (if applicable), wells, piezometers, environmental and facility monitoring points and devices; benchmarks and permanent survey markers; on-site buildings and appurtenances, fences, gates, roads, parking areas, drainage culverts, and signs; the delineation of the total landfill area including planned staged development of the landfill's construction and operation, and the lateral limits of any previously filled areas; the location and identification of the sources of cover materials; and site topography with five feet minimum contour intervals; and, any other relevant information as necessary for proper operation. The site plan drawings

shall show wetlands, property lines, existing wells, water bodies, residences, schools, day-care centers, churches, hospitals, publicly owned recreational park areas and any building on adjoining property;

(b) Location of surface water, dry runs, wetlands, the location of the 100-year floodplain boundaries, and other applicable details regarding the general topography of the landfill site and adjacent properties within one-fourth (¼) mile of the disposal area;

(c) The area where unauthorized waste will be temporarily stored while it awaits removal for proper disposal; and,

(d) The area where recovered materials will be temporarily stored;

(3) Detailed plans of the landfill that clearly show in plan and cross-sectional views the following: the original, undeveloped site topography before excavation or placement of solid waste; the existing site topography, if different, including the location and approximate thickness and nature of any existing solid waste; plan view of the location of the seasonal high water table in relation to the bottom elevation of the proposed landfill; a cross sectional view of existing and final elevations, bottom elevation and deflected bottom elevation, and seasonal high water table; geologic units; known and interpolated bedrock elevations; the proposed limits of excavation and waste placement; other devices as needed to divert or collect surface water run-on or run-off; a plan and cross section view of fill progression for the life of the landfill; the final elevations and grades of the landfill; groundwater monitoring system; and, the building locations and appurtenances;

(4) Detailed plans of the sedimentation ponds. These plans shall clearly show in plan and cross sectional views the following: the existing site topography, the seasonal high water table, pond bottom elevation, permanent pool elevation, first flush elevation, maximum elevation for sedimentation clean-out, emergency spillway 100-yr storm elevation, riser pipe, antiseep collars, outlet protection, emergency spillway, dewatering riser, trash/antivortex rack, and sedimentation pond gauge legend.

b. Engineering Report. The engineering report shall contain a comprehensive description of the existing site conditions and an analysis of the proposed landfill. All engineering reports shall be bound. This report shall include, but is not limited to, the following:

(1) A current 7.5 minute quadrant map (U.S. Geological Survey topographic map, including the legend and name of the quadrant) which shows contour intervals not exceeding five feet with the location, i.e. footprint, of the proposed landfill indicated;

(2) Source and description of cover material to be used. If soil excavated during landfill construction is to be used as cover material, indicate the location of stockpiles during landfill operation;

(3) Frequency of covering;

(4) Depth of disposal area;

(5) Final contours of the finished landfill areas;

(6) Stabilization Plan. This plan shall:

(a) Identify and locate existing vegetation to be retained and proposed vegetation to be used for cover, soil stockpiles, and other purposes; and,

(b) Include a schedule for seeding or implementing other appropriate erosion control measures. Appropriate measures shall be taken to stabilize stockpiled soils within 30 days;

(7) Operating Plan. A general operating plan for the proposed landfill shall include the expected life of the landfill, the maximum volume of solid waste the landfill will be capable of receiving over the operational life of the landfill, and the maximum rate at which the landfill will receive that waste during the designed life of the landfill. This plan shall at a minimum address the following:

(a) Screening procedures defining the methods for inspecting and measuring incoming waste;

(b) Procedures for control of storm water drainage;

(c) Procedures for prevention of fires;

(d) Procedures for control of vectors;

(e) Procedures for odor control;

(f) Procedures for dust control;

(g) Procedures for ensuring that waste does not escape the landfill boundaries during flooding;

(h) Hours of operation;

(i) Procedures for excavating, earth moving, spreading, compacting and covering operations, including a list of equipment to be at the landfill for daily operation. This submittal shall also include:

i. A description of the site's preparation and fill progression for the life of the site in terms of method, depth, location and sequence;

ii. A method of elevation control for the operator including the location and description of the permanent surveying benchmark at the site; and,

iii. A fill progression discussion describing the placement and compacted thickness of cover;

(j) Description of stormwater diversion in areas of constructed cells that have not had waste placement;

(k) A contingency plan describing landfill operation in the event of fire, explosion, or other event that would threaten human health and safety of the environment, and equipment failure. Reserve equipment shall be available within 24 hours of equipment breakdown. The contingency plan shall also contain procedures for the proper removal and disposal of unauthorized waste; and,

(*l*) A list of items that are not listed in Appendix I but are similar in nature to Appendix I of this regulation that the permittee wishes to place in the landfill, the anticipated quantity and source of the waste. Upon Department review, items other than those listed in Appendix I, that are approved for landfilling, shall be listed on the permit for that facility. After issuance of the permit, other items may be approved for disposal at the landfill by modification of the permit by the Department. Only items that will cause no environmental harm as determined by the Department shall be approved for disposal;

(8) A groundwater monitoring and corrective action plan pursuant to Sections D. and E. of this Part;

(9) Detailed closure plan in accordance with Section I. of this Part, to include a description of the final cover and the methods and procedures to be used to install the cover. This plan shall also include the following: an estimate of the sum of all active areas of the landfill requiring a final cover at any time during the operating life of the facility; an estimate of the maximum inventory of wastes ever on site over the active life of the facility; a schedule for completing all activities; and, a site plan of the landfill showing the proposed final elevations. The plan may be amended at any time during the active life of the facility with Department approval. The plan shall be amended whenever changes in operating plans or facility design affect the closure plan, or whenever there is a change in the expected year of closure;

(10) Detailed post-closure plan in accordance with Section J. of this Part. This plan may address, but not be limited to, groundwater monitoring, landfill gas monitoring and maintenance of the integrity and effectiveness of the final cover including future use of the site.

c. South Carolina Coastal Zone Management Plan. The proposed landfill project shall be consistent with the South Carolina Coastal Zone Management Plan, if the landfill is located in the coastal zone as defined in accordance with the Coastal Zone Management Act.

I. Permit Conditions and Review.

1. Application forms for permits shall be provided by the Department and shall be submitted with sufficient detail to support a judgment that operation of the disposal system will not violate the laws and regulations of the State of South Carolina. The application shall be signed by the permittee of the landfill. The approved application and associated plans and drawings shall be an enforceable part of the permit. Permits shall be effective for the design and operational life of the facility.

2. Prior to issuance of permits for major modifications, as determined by the Department, and for new construction, the Department will make the draft permit available for public review and comment pursuant to Part I, Section D of this regulation.

3. The Department shall review the permit at least once every five years. Upon notification from the Department, the landfill shall submit to the Department a topographic survey map of the site that shows the contours at the beginning and the end of the period since the last permit review.

4. If, upon review, the Department finds that material or substantial violations of the permit demonstrate the permittee's disregard for, or inability to comply with, applicable laws, regulations, or requirements, and would make continuation of the permit not in the best interest of human health and safety or the environment, the Department may, after a hearing, amend or revoke the permit as appropriate and necessary. When a permit is reviewed, the Department shall include additional limitations, standards, or conditions when the technical limitations, standards, or regulations on which the original permit was based have been changed by statute or amended by regulation.

5. The Department may amend or attach conditions to a permit when:

a. There is a significant change, as determined by the Department, in the manner and scope of operation which may require new or additional permit conditions or safeguards to protect human health and safety and the environment;

b. The investigation has shown the need for additional equipment, construction, procedures, and testing to ensure the protection of human health and safety and the environment; and,

c. The amendment is necessary to meet changes in applicable regulatory requirements.

6. Failure to begin construction within twelve (12) months of the issuance of the Department permit shall render that permit invalid unless granted a variance in writing by the Department

J. Transfer of Ownership.

The Department may, upon written request, transfer a permit to a new permittee where no other change in the permit is necessary pursuant to Part I, F.2.b. of this regulation.

Part V. Class Three Landfills.

(Subsections A through F of this Part are codified to coincide with those Subparts in 40CFR258.)

Subpart A. General Provisions.

258.1. Purpose, Scope, and Applicability.

a. Part V. establishes minimum criteria for landfills that accept municipal solid waste, industrial solid waste, sewage sludge, nonhazardous municipal solid waste incinerator ash and other nonhazardous waste. Hereinafter, these landfills will be referred to as Class Three landfills. Class Three landfills shall adhere to their approved Special Waste Analysis and Implementation Plan (SWAIP), pursuant to S.C. Code Section 44-96-390.

b. This Part applies to owners and operators of new and existing Class Three landfills, except as otherwise specifically provided in this regulation.

c. No Class Three landfill shall be operated in the State of South Carolina without first obtaining a written permit from the South Carolina Department of Environmental Services.

d. Class Three landfills failing to satisfy the criteria in this Part are considered open dumps for purposes of State solid waste management planning under RCRA.

e. Class Three landfills failing to satisfy the criteria in this Part constitute open dumps, which are prohibited under section 4005 of RCRA.

f. Class Three landfills containing sewage sludge and failing to satisfy the criteria in this Part violate sections 309 and 405(e) of the Clean Water Act.

g. Class Three landfills permitted prior to the effective date of this regulation to accept only industrial waste that test less than 30 times the MCL shall be exempted from the design criteria as outlined in Subpart D of this Part.

258.2. Definitions. See Part I., Section B. for definitions that apply to this regulation.

258.3. Considerations of other Federal Laws. The permittee of a Class Three landfill shall comply with any other applicable Federal rules, laws, regulations, or other requirements.

258.4. Research, Development, and Demonstration Permits.

a. When the leachate collection system is designed and constructed to maintain less than a 1 ft. depth of leachate on the liner, the Department may issue a research, development, and demonstration (RD and D) permit pursuant to R.61-107.10 for a Class Three Landfill for the use of innovative and new methods that vary from either or both of the following criteria:

(1) The run-on control systems in Section 258.26.a.(1); and,

(2) The liquids restrictions in Section 258.28.a., and Subpart H. Section 7.c. for specific permit requirements for leachate recirculation.

b. The Department may issue a research, development, and demonstration permit pursuant to R.61-107.10 for a Class Three Landfill to utilize innovative and new methods that vary from the final cover criteria of Section 258.60.a.(1), a.(2), and b.(1) when it can be demonstrated that the infiltration of liquid through the alternative cover system will not cause contamination of groundwater or surface water, or cause leachate depth on the liner to exceed 1 foot.

c. Any permit issued under this section shall include such terms and conditions at least as protective as the criteria for Class Three landfills to assure protection of human health and the environment. Such permits shall:

(1) Provide for the construction and operation of such facilities as necessary, for not longer than two years, unless renewed in writing by the Department;

(2) Provide that the landfill receive only those types and quantities of municipal solid waste and nonhazardous wastes that the Department deems appropriate for the purposes of determining the efficacy and performance capabilities of the technology or process;

(3) Include such requirements as necessary to protect human health and the environment, including such requirements as necessary for testing and providing information to the Department with respect to the operation of the facility;

(4) Require the permittee of a Class Three landfill permitted under this section to submit an annual report to the Department showing whether and to what extent the site is progressing in attaining project goals. The report will also include a summary of all monitoring and testing results, as well as any other operating information specified by the Department in the permit; and,

(5) Require compliance with all criteria in this part, except as permitted under this section.

d. The Department may order an immediate termination of all operations at the facility allowed under this section or other corrective measures at any time the Department determines that the overall goals of the project are not being attained, including protection of human health or the environment.

e. Any permit issued under this section shall not exceed two years and each renewal of a permit shall not exceed two years.

(1) The total term for a permit for a project including renewals may not exceed six years; and,

(2) When a permit renewal is requested, the applicant shall provide the Department with a detailed assessment of the project showing the status with respect to achieving project goals, a list of problems and

status with respect to problem resolutions, and any other requirements that the Department determines necessary for permit renewal.

f. Upon expiration of the RD and D permit, if the innovative/new method is proved to be a viable method, the facility's existing landfill permit issued under the authority of this regulation may be amended to include the innovative/new method.

Subpart B. Location Restrictions.

258.10. Airport Safety.

a. Owners/operators of Class Three landfills that are located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used by only piston-type aircraft shall demonstrate that the units are designed and operated so that the Class Three landfill does not pose a bird hazard to aircraft.

b. Owners/operators proposing to site new Class Three Landfills and lateral expansions located 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 (FAA).

c. The permittee shall place the demonstration required in a. above in the operating record and submit a copy to the Department.

d. See Part I, Section B. for definitions.

e. A new Class Three landfill that receives putrescible waste shall not be constructed or established after the effective date of this regulation within six (6) miles of a public airport that has received federal grant funds under 49 U.S.C. 47101 and is primarily served by general aviation aircraft and regularly scheduled flights of aircraft designed for sixty (60) passengers or more. The Federal Aviation Administration has issued guidance which includes criteria for determining when an airport is covered and has identified those airports meeting the criteria. Anyone considering construction or establishment of a new Class Three landfill within six (6) miles of a public airport should contact the Federal Aviation Administration. This requirement does not apply to:

(1) A new Class Three landfill if the S.C. Division of Aeronautics requests that the Administrator of the Federal Aviation Administration exempt the landfill from the application of this Item, and the Federal Aviation Administration Administrator determines that such exemption would have no adverse impact on aviation safety; or,

(2) Expansions, either vertical or lateral, of existing Class Three landfills constructed before the effective date of this regulation.

258.11. Floodplains.

a. Owners/operators of Class Three Landfills located in 100-year floodplains shall demonstrate that engineering measures have been incorporated into the landfill design to ensure the landfill will: not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, minimize potential for floodwaters coming into contact with waste, or result in the washout of solid waste so as to pose a hazard to human health or the environment. The permittee shall place the demonstration in the operating record and submit a copy to the Department.

b. See Part I., Section B. for definitions that apply to this regulation.

258.12. Wetlands. All landfills shall be in compliance with the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Department's requirements concerning wetlands.

258.13. Fault Areas.

a. Class Three landfills shall not be located within 200 feet of a fault that has had displacement in Holocene time unless the permittee demonstrates to the Department that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the Class Three landfill and will be protective of human health and the environment.

b. See Part I., Section B. for definitions that apply to this regulation.

258.14. Seismic Impact Zones.

a. Class Three landfills shall not be located in seismic impact zones, unless the permittee demonstrates to the Department that 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.

b. Definitions. See Part I., Section B. for definitions that apply to this regulation.

258.15. Unstable Areas.

a. Owners/operators of Class Three landfills located in an unstable area shall demonstrate that engineering measures have been incorporated into the landfill's design to ensure that the integrity of the structural components of the Class Three landfill will not be disrupted. The permittee shall place the demonstration in the operating record and notify the Department that it has been placed in the operating record. The permittee shall consider the following factors, at a minimum, when determining whether an area is unstable:

(1) On-site or local soil conditions that may result in significant differential settling;

(2) On-site or local geologic or geomorphologic features; and,

(3) On-site or man-made features or events (both surface and subsurface).

b. See Part I., Section B. for definitions that apply to this regulation.

258.16. Reserved.

258.17. Hydrogeologic Considerations.

a. Class Three landfills shall be located in areas that can be demonstrated to have the characteristics listed below (258.17.a.(1), a.(2), a.(3), and a.(4)). The inability of a site to meet full compliance with these criteria may not necessarily make the site unsuitable, but the applicant has the burden to demonstrate to the satisfaction of the Department why variance from the criteria will not compromise protection to human health and the environment. If Department review finds the demonstration to be inadequate, the application may be denied. Upon notification from the Department that the site meets the requirements of this section, the applicant may submit a complete application to the Department. This approval shall not be valid after a

period of twelve (12) months of the date of issuance if the complete application has not been submitted, unless granted a variance by the Department.

(1) The site shall not be located in an area where the hydrogeologic conditions allow the groundwater to migrate from shallow geologic units that have little potential as an underground source of drinking water, into deeper units. At the disposal area, any release to the uppermost aquifer would remain in the uppermost aquifer until discharge into the perennial stream nearest to the disposal area. The potentiometric head in the shallow portion of the uppermost aquifer shall be equal to or lower than the potentiometric head in the deeper portion of the uppermost aquifer (i.e., a lateral or an upward hydraulic gradient shall exist).

(2) The estimated deflected (or settled) bottom elevation of the landfill base grade shall be a minimum of three feet above the seasonal high water table elevation as it exists prior to the construction of the disposal area. The seasonal high water table shall be determined by interpretation of a minimum of 12 months data obtained from a representative number of monitoring wells approved by the Department. In cases where there is insufficient information to support the seasonal high water table elevation determination, additional separation may be required by the Department.

(3) A minimum 10 foot vertical separation of naturally occurring or engineered material shall be maintained between the base of the constructed liner and bedrock; provided, however, the nature of the material and sufficient separation exists to provide for installation and operation of an effective groundwater monitoring system. The nature of the material comprising this interval is subject to Department approval.

(4) The landfill shall not be located over an area where a stratum of limestone exhibiting secondary permeability with an average thickness of greater than five feet lies within 50 feet of the base of the landfill.

b. Class Three landfills are prohibited in areas where the permittee cannot demonstrate to the satisfaction of the Department that:

(1) The Class Three landfill is not located in a manner that would result in the destruction of a perennial stream, within 200 feet of a perennial stream, within that portion of a drainage basin included in a 2500 foot radius on the upstream side of a public drinking water supply intake, and within that portion of a drainage basin which is within 1000 feet of a lake, pond, or reservoir used as a source of public drinking water supply; and,

(2) The hydrogeologic properties of the site can be adequately characterized. The characterization shall include, but not be limited to, a detailed description of the geologic units below the site (including mineralogy, sedimentary structures, thickness, continuity, and structure), the hydraulic properties of each geologic unit (including secondary porosity and a discussion of variations noted across the site), hydraulic gradient, hydraulic conductivity, and direction and rate of groundwater flow within the uppermost aquifer system and all interconnected aquifers and confining units using a groundwater flow net. In addition, the relationship between the units below the site to locally and regionally recognized geologic and hydrogeologic units shall be described.

c. Class Three landfills shall not be located over Class GA groundwater or over the recharge area for Class GA groundwater as designated by the Department, over a sole source aquifer, or over the recharge area for a sole source aquifer as designated by the Department.

d. All Class Three landfills shall demonstrate compliance with the groundwater monitoring requirements pursuant to Subpart E.

258.18. Buffer Zones. Class Three landfills shall meet the buffer zone requirements outlined below:

a. The boundary of the fill area shall not be located within 1,000 feet of any residence, day-care center, church, school, hospital or publicly owned recreational park area unless such features are included in the site design for a planned end use or otherwise approved by the Department. The Department will determine whether the proposed landfill or landfill expansion meets this requirement prior to publication of the Notice of Intent to File a Permit Application pursuant to Part I, Section D.1 of this Regulation;

b. The boundary of the fill area shall not be located within 200 feet of any property line not under control of the permittee. An exemption may be issued by the Department upon receipt of written approval from adjacent property owners;

c. The boundary of the fill area shall not be located within 200 feet of any surface water that holds visible water for greater than six consecutive months, excluding ditches, sediment ponds, and other operational features on the site;

d. The boundary of the fill area shall not be located within the distances designated below from any well used as a source of water for human consumption, that is in a hydrologic unit potentially affected by the landfill. Exemptions may be granted if the applicant can demonstrate to the satisfaction of the Department that the hydrologic conditions below the landfill provide protection to the aquifer in use.

(1) The boundary of the fill area shall not be located any closer than 500 feet from a well hydraulically upgradient of the landfill.

(2) The boundary of the fill area shall not be located any closer than 750 feet from a well hydraulically sidegradient of the landfill.

(3) The boundary of the fill area shall not be located any closer than 1000 feet from a well hydraulically downgradient of the landfill.

e. Waste material shall not be placed on or within any property rights-of-way or 50 feet of underground or above ground utility equipment or structures, i.e., water lines, sewer lines, storm drains, telephone lines, electric lines, natural gas lines, etc., without the written approval of the impacted utility.

Subpart C. Operating Criteria.

258.20. Procedures for Excluding the Receipt of Hazardous Waste and Special Waste.

a. Owners/operators of all Class Three landfills shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in the South Carolina Hazardous Waste Management Regulations R.61-79.261 and polychlorinated biphenyls (PCB) wastes as defined in Toxic Substances Control Act (TSCA), Part 761. This program shall be a part of the Special Waste Analysis and Implementation Plan (SWAIP) and shall include, at a minimum:

(1) Random daily inspections of no less than 10% of incoming loads unless the permittee takes other steps as outlined in the SWAIP to ensure that incoming loads do not contain regulated hazardous wastes, PCB wastes, or wastes not specifically allowed by the permit. Bulk PCB wastes may be allowed for disposal in a Class Three landfill based on a case-by-case determination by the Department;

(2) Records of unacceptable waste to include quantities and descriptions of waste, generator information, and how/where waste was properly disposed;

(3) Training of facility personnel to recognize regulated hazardous waste and PCB wastes; and,

(4) Notification of the Department within 72 hours of facility personnel becoming aware that a regulated hazardous waste or PCB waste may have been disposed of at the facility.

b. Definitions. See Part I., Section B. for definitions that apply to this regulation.

c. The owners/operators of all Class Three landfills shall implement a program at the facility for regulating the receipt of special wastes as described in SC Code Section 44-96-390.

258.21. Cover Material Requirements.

a. Except as provided in paragraph b. below, the owners/operators of all Class Three landfills shall cover solid waste with six (6) inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control vectors, fires, odors, blowing litter, and scavenging. Special waste may require more frequent or additional cover.

b. Alternative materials of an alternative thickness (other than at least six (6) inches of earthen material) may be approved by the Department on a case-by-case basis if the permittee demonstrates that the alternative material and thickness control vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.

c. The Class Three landfill shall have an adequate quantity of acceptable earth (or approved alternate) cover for routine operations. If the material does not originate on-site, the permit application shall indicate the calculated volume of material needed for cover, provide assurances that off-site quantities of cover material are available, the location of any earth stockpiles, and any provisions for saving topsoil for use as final cover. The earth cover material shall be easily workable and compactable, shall be free of large objects that would hinder compaction, and shall not contain organic matter conducive to the harborage and/or breeding of vectors or nuisance animals.

d. The Department may grant, with prior notice from the permittee, a temporary waiver not to exceed seven days from the requirements of paragraphs a. and b. above for emergency situations.

258.22. Disease Vector Control.

a. Owners/operators of all Class Three landfills shall prevent or control on-site populations of vectors using techniques appropriate for the protection of human health and the environment.

b. Definitions. See Part I., Section B. for definitions that apply to this regulation.

258.23. Explosive Gases Control.

a. Owners/operators of all Class Three landfills shall ensure that:

(1) The concentration of methane gas generated by the facility does not exceed 25% of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and,

(2) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.

b. Owners/operators of all Class Three landfills shall implement a routine methane monitoring program to ensure that the standards in paragraph a. above are met.

(1) The type and frequency of monitoring shall be determined based on the following factors:

(a) Soil conditions;

(b) The hydrogeologic conditions surrounding the facility;

(c) The hydraulic conditions surrounding the facility; and,

(d) The location of facility structures and property boundaries.

(2) The minimum frequency of monitoring shall be quarterly.

c. If methane gas levels exceeding the limits specified in Section 258.23.a. above are detected, the permittee shall:

(1) Immediately take all necessary steps to ensure protection of human health and notify the Department;

(2) Within seven days of detection, place in the operating record and submit to the Department a copy of the methane gas levels detected and a description of the steps taken to protect human health; and,

(3) Within 30 days of detection, submit a methane remediation plan and construction details, signed and stamped by a South Carolina Licensed Professional Engineer, to the Department for approval; and,

(4) Within 30 days of plan approval, implement the Department approved remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Department that the plan has been implemented. The plan shall describe the nature and extent of the problem, the proposed remedy, and contain a schedule for compliance.

d. Definitions. See Part 1., Section B. for definitions that apply to this regulation.

258.24. Air Criteria.

a. Owners/operators of all Class Three landfills shall ensure that the landfills do not violate any applicable requirements developed in a State Implementation Plan (SIP) approved or promulgated by the Department pursuant to Section 110 or Section 111 of the Clean Air Act, as amended.

b. Open burning of solid waste, except for the infrequent burning of agricultural wastes, silvicultural wastes, landclearing debris, diseased trees, or debris from emergency clean-up operations, all of which require prior Department approval, is prohibited at all Class Three landfills.

258.25. Access Requirements.

a. Owners/operators of all Class Three landfills 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.

b. The landfill shall be adjacent to or have direct access to roads that are of all-weather construction and capable of withstanding anticipated load limits.

c. Salvaging and scavenging shall not be allowed at the working face of a Class Three landfill at any time.

258.26. Run-on/run-off Control Systems.

a. Owners/operators of all Class Three landfills shall design, construct, and maintain:

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

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

b. Run-off from the active portion of the landfill shall be handled in accordance with 258.27.a. below.

258.27. Surface Water Requirements.

a. Class Three landfills shall not:

(1) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, Section 402 of the National Pollutant Discharge Elimination System (NPDES); and,

(2) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or State-wide water quality management plan that has been approved in Section 208 or 319 of the Clean Water Act, as amended.

b. The permittee shall obtain an appropriate permit from the Department prior to the discharge of any storm waters to surface waters.

258.28. Liquids Restrictions.

a. Bulk or noncontainerized liquid waste may not be placed in Class Three landfills unless:

(1) The waste is household waste; or,

(2) The landfill has a Department Research, Development, and Demonstration Permit as outlined in Section 258.4 of this regulation.

b. Containers holding liquid waste may not be placed in a Class Three landfill unless:

(1) The container is a small container similar in size to that normally found in household waste;

(2) The container is designed to hold liquids for use other than storage; or,

(3) The waste is household waste.

c. For definitions, see Part I, Section B.

258.29. Record Keeping Requirements.

a. The permittee of a Class Three landfill shall record and retain near the facility in an operating record or in an alternative location approved by the Department for a period of no less than three years the following information as it becomes available:

(1) Any location restriction demonstration required in Subpart B of this Part;

(2) Inspection records, training procedures, and notification procedures required in Section 258.20. of Subpart C;

(3) Gas monitoring results and any remediation plans required by Section 258.23. of Subpart C;

(4) Any Class Three landfill design documentation for placement of leachate or gas condensate in the landfill as required in Section 258.28.a.(2) above;

(5) Any demonstration, certification, finding, monitoring, testing, or analytical data required by Subpart E;

(6) Closure and post-closure care plans, updates to the closure and post-closure care plans, and any monitoring, testing, or analytical data as required by Sections 258.60. and 258.61. of this Part;

(7) Any cost estimates and financial assurance documentation required by Part I., Section E. of this regulation; and,

(8) The results of any environmental monitoring or testing performed in accordance with this regulation or the operating permit for the facility.

b. All information contained in the operating record shall be furnished upon request to the Department or be made available at all reasonable times for inspection by the Department.

c. The permittee of a Class Three landfill shall record in an operating record, information concerning the source or type (e.g. residential route, commercial, industrial, transfer station identity, special); weight (tons); county and State of origin of each load of waste delivered to the facility. A summary of this information shall be submitted to the Department no later than September 1, of each year, for the previous fiscal year, on a form approved by the Department.

d. The Department can set alternative schedules for record keeping and notification requirements as specified in Sections 258.29.a. and b. above, except for the notification requirements in Sections 258.10.b. and 258.55.i.(1)(d).

258.30. Scale Installation. Each permittee of a Class Three landfill shall install and/or maintain scales capable of accurately determining the weight of incoming waste streams.

258.31. Equipment. The following equipment shall be required to ensure adequate operation of the Class Three landfill:

a. Equipment or adequate contractual arrangements for equipment sufficient for excavating, earth moving, spreading, dust suppression, compacting and covering operations;

b. Sufficient reserve equipment, or arrangements to provide alternate equipment within 24 hours following equipment breakdown; and,

c. Equipment to extinguish fires or arrangements to provide for fire protection.

258.32. Supervision and Inspection.

a. Supervision of the operation of the Class Three landfill shall be the responsibility of a qualified individual who has experience in the operation of a Class Three Landfill, and has completed operator training courses and is certified pursuant to R.61-107.14.

b. Routine inspection and evaluation of landfill operations will be made by a representative of the Department. A notice of any deficiencies, together with any recommendations for their correction, will be provided to the owner or local government responsible for the operation of the landfill.

258.33. Leachate Handling Agreement. Either a legal document (contract, local permit, etc.) certifying acceptance of leachate by the operator of a wastewater treatment facility for the discharge of leachate to that facility, or a state pollutant discharge elimination system permit shall be obtained prior to initial receipt of waste at the facility.

258.34. Leachate Control. The permittee of the Class Three landfill shall ensure that the leachate head above the liner system does not exceed one (1) foot, except for brief periods not to exceed one (1) week, due to circumstances beyond the immediate control of the permittee.

258.35. Testing of Municipal Solid Waste Incinerator Ash.

a. Ash residue disposed at a Class Three landfill shall be sampled and analyzed according to the current Environmental Protection Agency (EPA) acceptable methodology for determining the hazardous nature of the ash.

b. The required analysis of all ash shall be performed in accordance with the conditions of the solid waste incinerator permit where the ash is generated, and the Class Three landfill where the ash is disposed.

c. Prior to disposal, ash from each facility generating ash shall be tested, at a minimum semi- annually and when any changes occur to the waste streams being incinerated, to determine the hazardous or non-hazardous nature of the ash stream.

d. No ash determined to be hazardous waste shall be disposed at a Class Three landfill.

e. Records of all ash testing shall be maintained in the operating record of the Class Three landfill.

258.36. Sign Requirements. Signs shall be posted and maintained at the main entrance that:

a. Identify the owner, operator, or a contact person and telephone number in case of emergencies and the normal hours during which the landfill is open to receive waste;

b. State the types of waste that the landfill is permitted to receive; and,

c. Identify the valid SCDES Facility I.D. Number for the facility.

258.37. Litter Control. Wind borne waste shall be controlled at the Class Three landfill. The entire facility shall be policed as necessary to remove any accumulations of blown litter.

Subpart D. Design Criteria for Class Three Landfills.

258.40. Design Criteria.

a. Class Three landfills shall be constructed:

(1) In accordance with a design approved by the Department. The design shall ensure that the maximum contaminant level (MCL) as specified in the South Carolina State Primary Drinking Water Standards, R.61-68 will not be exceeded in the uppermost aquifer at the relevant point of compliance, as specified by the Department in Section 258.40.i. below; or,

(2) With a composite liner, as defined in Item b. below of this section and a leachate collection system that is designed and constructed to maintain less than a one (1) foot depth of leachate over the liner, except in sumps.

(3) Monofills that accept coal combustion byproducts that test greater than ten (>10) times the maximum contaminant level (MCL), may be constructed with a clay liner system consisting of a minimum of a two (2) foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec, and an appropriate leachate collection system. These facilities shall comply with all other requirements for a Class III landfill.

b. Liner. A composite liner system shall consist of two components: the upper component shall consist of a minimum 30-mil flexible membrane liner (FML); and, the lower component shall consist of at least a two 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 component shall be installed in direct and uniform contact with the compacted soil component.

c. The leachate collection and removal system shall be designed and built to operate without clogging during the operational life of the site and post-closure maintenance period. The system shall be designed to allow for routine maintenance and cleaning of the system.

d. Filter layers shall be designed to prevent the migration of fine soil particles into a coarser grained material, and allow water or gases to freely enter a drainage medium (pipe or drainage blanket) without clogging.

e. The total thickness of the drainage and protective layers above the liner material shall be a minimum of two feet thick, and shall be composed of material with a minimum hydraulic conductivity of 1×10^{-4} cm/sec.

f. All material used in the leachate collection and removal system of the landfill shall be designed to ensure that the hydraulic leachate head on the liner system does not exceed one foot as a result of a 24-hour, 25-year storm event during the active life and post-closure care period of the landfill.

g. A foundation analysis shall be performed to determine the structural integrity of the subgrade to support the horizontal and vertical stresses and overlying facility components.

(1) The constructed landfill subgrade material shall consist of on-site soils or select fill with minimal organic material, as approved by the Department.

(2) The landfill subgrade shall be graded in accordance with the requirements of the approved engineering plans, reports and specifications. The material shall be sufficiently dry and structurally sound to ensure that the first lift and all succeeding lifts of soil placed over the landfill subgrade can adequately be compacted to the design requirements.

h. When approving a design that complies with the requirements of this Part, the Department shall consider at least the following factors:

(1) The hydrogeologic characteristics of the facility and surrounding land;

(2) The climatic factors of the area; and,

(3) The volume and physical and chemical characteristics of the leachate.

i. The relevant point of compliance specified by the Department shall be no more than 150 feet from the waste management unit boundary and shall be located on land owned by the owner of the Class Three landfill. In determining the relevant point of compliance, the Department shall consider at least the following factors:

(1) The hydrogeologic characteristics of the facility and surrounding land;

(2) The volume and physical and chemical characteristics of the leachate;

(3) The quantity, quality, and direction of flow of groundwater;

(4) The proximity and withdrawal rate of the groundwater users;

(5) The availability of alternative drinking water supplies;

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

(7) Public health, safety, and welfare effects; and,

(8) Practicable capability of the permittee.

j. One permanent survey benchmark of known elevation measured from a U.S. Geological Survey benchmark shall be established and maintained at the site. This benchmark shall be the reference point for establishing horizontal and vertical elevation control.

k. A minimum separation of three feet shall be maintained between the base of the constructed liner system and the high water table. Settlement of the landfill base grade shall be factored into the minimum separation requirement.

l. The soil component of the liner system shall conform with the following:

(1) The soil component of the liner system shall be placed on a slope of no less than 2% to promote positive drainage across the liner surface and at a maximum slope not greater than 33% to facilitate construction; and,

(2) Compaction shall be performed by properly controlling the moisture content, lift thickness and other necessary details to obtain satisfactory results.

m. The flexible membrane liner material shall demonstrate a chemical and physical resistance to waste placement or leachate generated by the landfill. Documentation shall be submitted to ensure chemical compatibility of the geomembrane liner material chosen, or in absence of the appropriate documentation, chemical compatibility testing shall be performed using a test method acceptable to the Department. Flexible membrane liners shall be installed in accordance with the requirements of the approved engineering plans, report, specifications and manufacturer's recommendations.

n. All storm water ditches should have a minimum slope of 0.5% or a minimum permissible non-silting velocity of two feet per second. When it is not possible to achieve minimum slopes and/or velocities, alternative system design and maintenance, which ensures proper run-on and run-off control, may be approved by the Department.

o. For landfill expansions adjacent to existing Class Three landfills, the Department may approve encroachment upon the existing landfill's side slopes only if a leachate barrier system is designed and constructed to eliminate leachate migration into the existing landfill. The expansion area shall be constructed in compliance with all applicable sections of this regulation. The subsurface conditions of the underlying area shall be capable of supporting the expansion.

p. A construction certification report shall be submitted to the Department for approval after the completion of landfill construction by a S.C. licensed engineer other than the design engineer. This report shall include at a minimum, the information prepared in accordance with the application requirements. In addition, the construction certification report shall contain as-built drawings prepared and sealed by a land surveyor registered in South Carolina noting any deviations from the approved engineering plans. The construction certification report shall include a comprehensive narrative by the engineer. Upon approval of the construction certification report and a satisfactory Department inspection, the Department will grant approval for disposal of waste.

q. The Department may, on a case-by-case basis, approve other landfill designs, provided there is adequate information to demonstrate that the proposed design meets or exceeds the environmental and public health protection standards outlined in this regulation.

r. Class Three landfills shall have a minimum 1.7 factor safety against failure, where the soil conditions are complex and when available strength data does not provide a consistent, complete, or logical picture of the strength characteristics. Where the soil conditions are uniform and high quality strength data provides a consistent, complete, and logical picture of the strength characteristics, a minimum 1.2 factor safety against failure may be used. The determination of the maximum horizontal acceleration of the lithified earth material for the site shall be based on the seismic 250-year interval maps in U.S. Geological Survey Open-File Report 82-1033[1]. The permittee shall place the demonstration in the operating record and submit a copy to the Department.

[1] Entitled “Probabilistic Estimates of Maximum Acceleration and Velocity in Rock in the Contiguous United States,” (Algermissen and Perkins, 1982).

Subpart E. Groundwater Monitoring and Corrective Action

258.50. Applicability.

a. The requirements in this part apply to all Class Three landfills, except as provided in paragraph b. below.

b. Groundwater monitoring requirements in Sections 258.51. through 258.55. of this Part may be modified by the Department for a Class Three landfill if the permittee can demonstrate that there is no potential for migration of hazardous constituents from the Class Three landfill to the uppermost aquifer during the active life of the landfill and the post-closure care period. This demonstration shall be certified by a qualified professional and approved by the Department, and shall be based upon:

(1) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport; and,

(2) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and environment.

c. Class Three landfills shall be in compliance with the groundwater monitoring requirements specified in Sections 258.51. - 258.55. before waste can be placed in the landfill.

d. Once established at a Class Three landfill, groundwater monitoring shall be conducted throughout the active life and post-closure care period of the landfill as specified in Section 258.61.

e. For the purposes of this Subpart, a qualified professional shall certify all submittals.

f. The Department may establish alternative schedules for demonstrating compliance with the various sections of this Subpart on a case-by-case basis, provided sufficient technical rationale is provided to the Department to justify the alternate compliance schedule.

258.51. Groundwater Monitoring Systems

a. A groundwater monitoring system shall be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield representative groundwater samples from the uppermost aquifer that:

(1) Represent the quality of background groundwater that has not been affected by leakage from a landfill. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

(a) Hydrogeologic conditions do not allow the permittee to determine what wells are hydraulically upgradient; or,

(b) Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and,

(2) Represent the quality of groundwater passing the relevant point of compliance approved by the Department in Section 258.40.i. The downgradient monitoring system shall be installed between the relevant point of compliance and the actual disposal area, and shall ensure detection of any groundwater contamination in the uppermost aquifer. When physical obstacles preclude installation of groundwater

monitoring wells at the relevant point of compliance at existing landfills, the downgradient monitoring system shall be installed at the closest practicable distance hydraulically downgradient from the relevant point of compliance to ensure detection of groundwater contamination in the uppermost aquifer.

b. Reserved.

c. Monitoring wells shall be approved by the Department and constructed, at a minimum, to the standards established in the R.61-71.H., South Carolina Well Standards.

(1) The permittee shall submit to the Department and place in the operating record, documentation of the design, installation, development, and abandonment of any monitoring wells, piezometers and other measurement, sampling, and analytical devices; and,

(2) The monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.

d. The number, spacing, and depths of monitoring systems shall be:

(1) Determined based upon site-specific technical information that shall include thorough characterization of:

(a) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow, and the information required by Section 258.17.; and,

(b) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer; including, but not limited to: thickness, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities; and,

(2) Certified by a qualified professional and approved by the Department. Within 14 days of this certification, the permittee shall place the certification in the operating record and submit a copy to the Department.

258.52. Reserved.

258.53. Groundwater Sampling and Analysis Requirements.

a. The groundwater monitoring program shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells installed in compliance with Section 258.51.a. of this Part. The permittee shall submit to the Department for review and approval, the sampling and analysis procedures and protocols to be used at the facility. After approval by the Department, documentation shall be placed in the operating record. The program shall include procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures;

(4) Chain of custody; and,

(5) Quality assurance and quality control.

b. The groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. Detection limits for those parameters that have a Maximum Contaminant Level (MCL) that has been promulgated under South Carolina R.61-58, State Primary Drinking Water Regulations, shall be, at a minimum, below the established MCL. Detection levels shall be as low as practically possible, and at the practical quantitation level (PQL) for those constituents with no MCL. Groundwater samples shall not be field-filtered prior to laboratory analysis.

c. The sampling procedures and frequency shall be protective of human health and the environment.

d. Groundwater elevations shall be measured and recorded for each well prior to initiating sampling procedures each time groundwater is sampled. The permittee shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells that monitor the same waste management area shall be measured on the same day to avoid temporal variations in groundwater flow which could preclude an accurate determination of groundwater flow rate and direction.

e. The permittee shall establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the metals or constituents required in the particular groundwater monitoring program that applies to the Class Three landfill, as determined in Section 258.54.a., or Section 258.55.a. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the Class Three landfill if it meets the requirements of Section 258.51.a.(1). In order to establish background groundwater quality in a reasonable period of time, pursuant to Sections 258.53.i.(1) and 258.53.i.(2), the permittee shall collect and analyze a minimum of four (4) independent groundwater samples from each compliance well and each background well prior to the end of the first year of operation. The Department may, on a case-by-case basis, approve an alternate subset of wells to be sampled for the establishment of background groundwater quality. The alternate subset of wells shall consist of a minimum of four (4) wells, or the total number of wells monitoring the landfill, whichever is least, and shall include all background well(s). This sampling and analysis shall be accomplished in a manner consistent with the requirements of Section 258.53.f. Pursuant to Section 258.51.a.(1), the above samples shall represent the quality of background groundwater that has not been affected by leakage from a landfill.

f. The number of samples collected to establish groundwater quality data shall be consistent with the appropriate statistical procedures determined pursuant to paragraph g. below. The sampling procedures shall be those specified in Section 258.54.b. for detection monitoring, Sections 258.55.b. and d. for assessment monitoring, and Section 258.56.b. for corrective action.

g. The permittee shall specify in the operating record a statistical method to be used in evaluating groundwater monitoring data for each metal or other hazardous constituent requiring statistical analysis. The statistical test chosen shall be conducted for each parameter in each well, every time samples are collected. The following methods may be used:

(1) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent;

(2) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include

estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent;

(3) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit;

(4) A control chart approach that gives control limits for each constituent; or,

(5) Another statistical test method that meets the performance standards of Section 258.53.h. The permittee shall place a justification for this alternative in the operating record and obtain approval from the Department prior to the use of this alternative test. The justification shall demonstrate that the alternative method meets the performance standards of Section 258.53.h.

h. Any statistical method chosen according to paragraph g. above shall comply with the following performance standards, as appropriate:

(1) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents are shown by the permittee to be inappropriate for a normal theory test, then the data shall be transformed or a distribution-free theory test used. If the distributions for the constituents differ, more than one statistical method may be needed;

(2) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground-water protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts;

(3) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern;

(4) If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence, and for tolerance intervals, the percentage of the population that the interval contains, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern;

(5) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit (pql) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility; and,

(6) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

i. The permittee shall determine whether or not there is a statistically significant increase over background values for each parameter or constituent required in the particular groundwater monitoring program that applies to the Class Three landfill, as determined in Section 258.54.a. or Section 258.55.a.

(1) In determining whether a statistically significant increase has occurred, the permittee shall compare the groundwater quality of each parameter or constituent at each monitoring well designated pursuant to Section 258.51.a.(2) to the background value of that constituent, according to the statistical procedures and performance standards specified in paragraphs g. and h. above.

(2) Within a reasonable period of time after completing sampling and analysis, the permittee shall determine whether there has been a statistically significant increase over background for each metal or other hazardous constituent requiring statistical analysis at each monitoring well.

258.54. Detection Monitoring Program.

a. Detection monitoring is required at all Class Three landfill groundwater monitoring wells defined in Sections 258.51.a.(1) and a.(2). At a minimum, a detection monitoring program shall include the monitoring for the constituents listed in Appendix IV of this part.

(1) The Department may delete any of the Appendix IV monitoring parameters for a Class Three landfill if it can be shown that the deleted constituent(s) are not reasonably expected to be contained in or derived from the waste contained in the landfill.

(2) The Department may require additional groundwater monitoring parameters for routine monitoring based on the chemical and physical nature of the waste stream received by the landfill and any analytical data for the waste streams provided by the permittee.

b. The monitoring frequency for all constituents listed in Appendix IV to this part shall be at least semiannual during the active life of the facility and the post-closure care period. At least one sample from each well (background and downgradient) shall be collected and analyzed during each sampling event.

c. The Department may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix IV constituents during the active life and the post-closure care period. The alternative frequency during the active life shall be no less than semiannual. The alternative frequency shall be based on consideration of the following factors:

(1) Lithology of the aquifer and unsaturated zone;

(2) Hydraulic conductivity of the aquifer and unsaturated zone;

(3) Groundwater flow rates;

(4) Minimum distance between upgradient edge of the Class Three landfill and downgradient monitoring well screen (minimum distance of travel); and,

(5) Resource value of the aquifer.

d. If the permittee determines, pursuant to Section 258.53.g., that there is a statistically significant increase over background for one or more of the metals listed in Appendix IV, or above the MCL or PQL, as applicable, for any volatile organic compound (VOC) listed in Appendix IV at any monitoring well at the boundary specified in Section 258.51.a.(2), the permittee shall:

(1) Within 14 days of this finding, notify the Department;

(2) Within 14 days of this finding, place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels;

(3) Within 30 days of this finding, resample the monitoring well(s) in question for Appendix IV to determine the validity of the data; and,

(4) If the data are validated by resampling, establish an assessment monitoring program meeting the requirements of Section 258.55. within 90 days except as provided for in paragraph d.5 of this section.

(5) The permittee may demonstrate that a source other than a Class Three landfill caused the contamination or that the statistically significant increase (SSI) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration shall be certified by a qualified professional, submitted to the Department for approval, and placed in the operating record. If a successful demonstration is made and documented, the permittee may continue detection monitoring as specified in this section. If, after 90 days, a successful demonstration is not made, the permittee shall initiate an assessment monitoring program as required in Section 258.55.

e. The permittee shall submit to the Department on or before the anniversary date of issuance of the permit, an annual report certified by a qualified professional containing all of the analytical and statistical analysis performed at the site for the previous year as a result of the requirements of this Part. The annual report shall contain the following:

(1) The results of all analytical testing performed at the site during the previous year, and any applicable data concerning sampling and analysis of monitoring wells at the site;

(2) A determination of the technical sufficiency of the monitoring well network in detecting a release from the facility as required by Section 258.51.;

(3) The determination of groundwater elevations, groundwater flow directions and groundwater flow rates as specified in Section 258.53.d. Groundwater flow directions shall be based upon interpretation of a potentiometric map prepared utilizing the groundwater elevations measured at the site;

(4) A summary of the results of the statistical analysis performed in accordance with Sections 258.53.g. and 258.53.h.; and,

(5) Recommendations for any necessary actions regarding the groundwater monitoring system.

f. The results of all chemical analysis of groundwater samples taken during routine monitoring shall be submitted to the Department within 60 days of sample collection. On sampling events where an annual report is to be submitted to the Department, the annual report shall satisfy this requirement.

258.55. Assessment Monitoring Program.

a. Assessment monitoring is required whenever a statistically significant increase over background has been detected and validated, in accordance with Section 258.54.d., for one or more of the metals listed in Appendix IV, or above the MCL or PQL, as applicable, for any volatile organic compound (VOC) listed in Appendix IV, unless a successful demonstration has been made in accordance with Section 258.54.d.(5).

b. Within 90 days of triggering an assessment monitoring program, and annually thereafter, the permittee shall sample and analyze the groundwater for all constituents identified in Appendix V. A minimum of one sample from each downgradient well shall be collected and analyzed during each sampling event. For any constituent detected in the downgradient wells as the result of the complete Appendix V analysis, a minimum of four (4) independent samples from each well (background and downgradient) shall be collected and analyzed to establish background for the new constituents.

c. The Department may approve an appropriate subset of wells to be sampled and analyzed for Appendix V constituents during assessment monitoring, provided the permittee provides sufficient technical rationale for the subset of wells. The Department may delete any of the Appendix V monitoring parameters for a Class Three landfill if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the landfill.

d. The Department may allow an appropriate alternate frequency for repeated sampling and analysis for the full set of Appendix V constituents required by Section 258.55.b., during the active life and post-closure care of the landfill considering the following factors:

(1) Lithology of the aquifer and unsaturated zone;

(2) Hydraulic conductivity of the aquifer and unsaturated zone;

(3) Groundwater flow rates;

(4) Minimum distance between upgradient edge of the Class Three landfill and downgradient monitoring well screen (minimum distance of travel);

(5) Resource value of the aquifer; and,

(6) Nature (fate and transport) of any constituents detected in response to this section.

e. After obtaining the results from the initial or subsequent sampling events required in paragraph b. above, the permittee shall:

(1) Within 14 days, submit to the Department analytical results identifying the Appendix V constituents that have been detected and place a copy in the operating record;

(2) Within 90 days, and on at least a semiannual basis thereafter, resample all wells specified by Section 258.51.a., conduct analyses for all constituents in Appendix IV and for those constituents in Appendix V that are detected in response to paragraph (b) above, and record their concentrations in the facility operating record. At least one sample from each well (background and downgradient) shall be collected and analyzed during these sampling events;

(3) Establish background concentrations for any constituents detected pursuant to paragraphs b., c., d. or e.(2) above; and,

(4) Establish groundwater protection standards for all constituents detected pursuant to paragraph b. or e. above. The groundwater protection standards shall be established in accordance with paragraph j. or k. below.

f. The Department may specify an alternative monitoring frequency during the active life and the post closure care period for the constituents referred to in this paragraph. The alternative frequency for Appendix

V constituents during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the factors specified in paragraph (d) above.

g. If the concentrations of all Appendix V constituents are shown to be at or below background values, using the statistical procedures in Section 258.53.g., for two consecutive sampling events, the permittee may request approval from the Department to return to detection monitoring.

h. If the concentrations of any Appendix V constituents are above background values, but all concentrations are less than the groundwater protection standard established in paragraph j. or k. below, using the statistical procedures in Section 258.53.g., the permittee shall continue assessment monitoring in accordance with this section.

i. If one or more Appendix V constituents are detected at or above the groundwater protection standard established in paragraph j. or k. below in any sampling event, the permittee shall, within 14 days of this finding, submit to the Department analytical results identifying the Appendix V constituents that have exceeded the groundwater protection standard and notify the Department and all appropriate local government officials that the notice has been placed in the operating record. The permittee shall do one of the following:

(1) Either:

(a) Submit to the Department within 60 days of this finding, a groundwater quality assessment plan for characterizing the nature and extent of the release.

(b) Upon approval of the groundwater quality assessment plan, shall characterize the nature and extent of the release by installing additional monitoring wells as necessary;

(c) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with Section 258.55.d.(2);

(d) Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site as indicated by sampling of wells in accordance with Section 258.55.i.(1); and,

(e) Initiate an assessment of corrective measures as required by Section 255.56. within 90 days; or,

(2) Demonstrate that a source other than a Class Three landfill caused the contamination, or that the statistically significant increase (SSI) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration shall be certified by a qualified professional, submitted to the Department for approval, and placed in the operating record. If a successful demonstration is made, the permittee shall continue monitoring in accordance with the assessment monitoring program pursuant to Section 258.55., and may return to detection monitoring if the Appendix V constituents are at or below background as specified in Section 258.55.g. Until a successful demonstration is made, the permittee shall comply with Section 258.55.i. including initiating an assessment of corrective measures.

j. The permittee shall establish a groundwater protection standard for each Appendix V constituent detected in the groundwater. The groundwater protection standard shall be:

(1) For constituents for which a maximum contaminant level (MCL) has been promulgated under South Carolina R.61-58, State Primary Drinking Water Regulations, the MCL for that constituent;

(2) For constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with 258.51.a.(1); or,

(3) For constituents for which the background level is higher than the MCL identified in paragraph j.(1) above or health based levels identified in Section 258.55.k.(1), the background concentration.

k. The Department may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:

(1) The level is derived in a manner consistent with Federal Environmental Protection Agency (EPA) guidelines for assessing the health risks of environmental pollutants (51 FR 33992, 34006, 34014, 34028, September 24, 1986);

(2) The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR part 792) or equivalent;

(3) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) of 1×10^{-6}; and,

(4) For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this subpart, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

l. In establishing groundwater protection standards in paragraph j. or k. above, the Department may consider the following:

(1) Multiple contaminants in the groundwater;

(2) Exposure threats to sensitive environmental receptors; and,

(3) Other site-specific exposure or potential exposure to groundwater.

258.56. Assessment of Corrective Measures

a. Within 90 days of finding that any of the constituents listed in Appendix V have been detected at a level exceeding the groundwater protection standards defined in Section 258.55.j. or k., the permittee shall initiate an assessment of corrective measures. Such an assessment shall be completed within a reasonable period of time, not to exceed 180 days.

b. The permittee shall continue to monitor in accordance with the assessment monitoring program as specified in Section 258.55.

c. The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described in Section 258.57., addressing at least the following:

(1) The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

(2) The time required to begin and complete the remedy;

(3) The costs of remedy implementation; and,

(4) The institutional requirements such as Department or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

d. The permittee shall discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties.

258.57. Selection of Remedy.

a. Based on the results of the corrective measures assessment conducted according to Section 258.56, the permittee shall select a remedy that, at a minimum, meets the standards listed in paragraph b. below. The permittee shall notify the Department within 14 days of selecting a remedy and submit a report to the Department for review and approval that describes the selected remedy and how it meets the standards in paragraph b. below.

b. Remedies shall:

(1) Be protective of human health and the environment;

(2) Attain the groundwater protection standard as specified pursuant to Section 258.55.j. or k.;

(3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix V constituents into the environment that may pose a threat to human health or the environment; and,

(4) Comply with standards for management of wastes as specified in Section 258.58.d.

c. In selecting a remedy that meets the standards in paragraph b. above, the permittee shall consider the following evaluation factors:

(1) The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(a) Magnitude of reduction of existing risks;

(b) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;

(c) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(d) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;

(e) Time until full protection is achieved;

(f) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;

(g) Long-term reliability of the engineering and institutional controls; and,

(h) Potential need for replacement of the remedy;

(2) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

(a) The extent to which containment practices will reduce further releases; and,

(b) The extent to which treatment technologies may be used;

(3) The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:

(a) Degree of difficulty associated with constructing the technology;

(b) Expected operational reliability of the technologies;

(c) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(d) Availability of necessary equipment and specialists; and,

(e) Available capacity and location of needed treatment, storage, and disposal services; and,

(4) The degree to which community concerns are addressed by a potential remedy(s).

d. The permittee shall specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities. Such a schedule shall require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in paragraphs d.(1-8). The permittee shall consider the following factors in determining the schedule of remedial activities:

(1) Extent and nature of contamination;

(2) Practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established in Section 258.55.j. or k. and other objectives of the remedy;

(3) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;

(4) Desirability of utilizing technologies that are not readily available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;

(5) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

(6) Resource value of the aquifer including:

(a) Current and future uses;

(b) Proximity and withdrawal rate of users;

(c) Groundwater quantity and quality;

(d) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituent;

(e) The hydrogeologic characteristic of the facility and surrounding land;

(f) Groundwater removal and treatment costs; and,

(g) The cost and availability of alternative water supplies;

(7) Practicable capability of the permittee; and,

(8) Other relevant factors.

e. The Department may determine that remediation of a release of an Appendix V constituent from a Class Three landfill is not necessary if the permittee demonstrates to the Department that:

(1) The groundwater is additionally contaminated by substances that have originated from a source other than a Class Three landfill and those substances are present in concentrations such that cleanup of the release from the Class Three landfill would provide no significant reduction in risk to actual or potential receptors; or,

(2) The constituent(s) is present in groundwater that:

(a) Does not currently meet the definition of an underground source of drinking water per South Carolina Water Classifications and Standards R.61-68; and,

(b) Is not hydraulically connected with waters to which the hazardous constituents are migrating, or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established in Section 258.55.j. or k. or,

(3) Remediation of the release(s) is technically impracticable; or,

(4) Remediation results in unacceptable cross-media impacts.

f. A determination by the Department pursuant to paragraph e. above of this section shall not affect the authority of the Department to require the permittee to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

258.58. Implementation of the Corrective Action Program.

a. Based on the schedule established in Section 258.57.d. for initiation and completion of remedial activities, the permittee shall:

(1) Establish and implement a corrective action groundwater monitoring program that:

(a) At a minimum, meets the requirements of an assessment monitoring program in Section 258.55;

(b) Indicates the effectiveness of the corrective action remedy; and,

(c) Demonstrates compliance with groundwater protection standards pursuant to Section 258.58.e.

(2) Implement the corrective action remedy selected in Section 258.57.; and,

(3) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures should, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to Section 258.57. The following factors shall be considered by a permittee in determining whether interim measures are necessary:

(a) Time required to develop and implement a final remedy;

(b) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

(c) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(d) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(e) Weather conditions that may cause hazardous constituents to migrate or be released;

(f) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and,

(g) Other situations that may pose threats to human health and the environment.

b. A permittee may determine, based on information developed after implementation of the remedy or other information, that compliance with requirements of Section 258.57.b. are not being achieved through the remedy selected. In such cases, the permittee shall implement other methods or techniques that could practicably achieve compliance with the requirements, unless the permittee makes the determination under 258.c.

c. If the permittee determines that compliance with requirements in Section 258.57.b. cannot be practically achieved with currently available methods, the permittee shall:

(1) Obtain certification of a qualified professional and approval by the Department that compliance with requirements in Section 258.57.b. cannot be practically achieved with any currently available methods;

(2) Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment;

(3) Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

(a) Technically practicable; and,

(b) Consistent with the overall objective of the remedy; and,

(4) Notify the Department within 14 days that a report justifying the alternative measures prior to implementing the alternative measures has been placed in the operating record.

d. All solid wastes that are managed pursuant to a remedy required in Section 258.57., or an interim measure required in Section 258.58.a.(3), shall be managed in a manner:

(1) That is protective of human health and the environment; and,

(2) That complies with applicable Resource Conservation and Recovery Act (RCRA) requirements.

e. Remedies selected pursuant to Section 258.57. shall be considered complete when:

(1) The permittee complies with the groundwater protection standards established in Section 258.55.j. or k. at all points within the plume of contamination that lie beyond the groundwater monitoring well system established in Section 258.51.a.

(2) Compliance with the groundwater protection standards established in Section 258.55.j. or k. has been achieved by demonstrating that concentrations of Appendix V constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in Section 258.53.g. and h. The Department may specify an alternative length of time during which the permittee shall demonstrate that concentrations of Appendix V constituents have not exceeded the groundwater protection standard(s) taking into consideration:

(a) Extent and concentration of the release(s);

(b) Behavior characteristics of the hazardous constituents in the groundwater;

(c) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and,

(d) Characteristics of the groundwater.

(3) All actions required to complete the remedy have been satisfied.

f. Within 14 days of completion of the remedy, the permittee shall submit to the Department a certification signed by a qualified professional stating that the remedy has been completed in compliance with the requirements of Section 258.58.e.

g. Upon the Department's approval of the certification required in 258.58.f., the permittee shall be released from the requirements for financial assurance for corrective action.

258.59. Reserved.

Subpart F. Closure and Post-closure Care.

258.60. Closure Criteria.

a. Owners/operators of all Class Three landfills shall install a final cover system that is designed to minimize infiltration and erosion. The final cover system shall be designed and constructed to:

(1) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less;

(2) Minimize infiltration through the closed Class Three landfill by the use of an infiltration layer that contains a minimum eighteen (18) inches of earthen material;

(3) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum one (1) foot of earthen material that is capable of sustaining native plant growth; and,

(4) Have a storm water conveyance system for the landfill cap designed to ensure that the hydraulic head at any point does not exceed one (1) foot for a 24-hour period as the result of a 24-hour, 25- year storm event on all areas that have received final cover.

b. The Department may approve an alternative final cover design that includes:

(1) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraphs a.(1) and a.(2) above; and,

(2) An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in a.(3) above.

c. The permittee shall prepare a written closure plan that describes the steps necessary to close all Class Three landfills at any point during their active life in accordance with the cover design requirements in Section 258.60.a. or b., as applicable. The closure plan, at a minimum, shall include the following information:

(1) A description of the final cover, designed in accordance with Section 258.60.a. and the methods and procedures to be used to install the cover;

(2) An estimate of the largest area of the Class Three landfill ever requiring a final cover as required in Section 258.60.a. at any time during the active life;

(3) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and,

(4) A schedule for completing all activities necessary to satisfy the closure criteria in Section 258.60.

d. Prior to permit issuance, the permittee shall submit to the Department a closure plan. The closure plan shall be updated if any changes occur at the facility which require a deviation from the approved closure plan.

e. Prior to beginning closure of each Class Three landfill as specified in Section 258.60.f., a permittee shall submit a notice of intent to close to the Department to include a schedule outlining closure activities.

f. The permittee shall begin closure activities of each Class Three landfill no later than 30 days after the date on which the Class Three landfill receives the known final receipt of wastes, or if the Class Three landfill has remaining capacity and there is a reasonable likelihood that the Class Three landfill will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the Department if the permittee demonstrates that the Class Three landfill has the capacity to receive additional wastes and the permittee has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed Class Three landfill.

g. The permittee of all Class Three landfills shall complete closure activities of each Class Three landfill in accordance with the closure plan within 180 days following the beginning of closure as specified in Section 258.60.f. Extensions of the closure period may be granted by the Department if the permittee demonstrates that closure will take longer than 180 days and they have taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed Class Three landfill.

h. Following closure of each Class Three landfill, the permittee shall submit to the Department for approval certification, that is signed by a South Carolina registered professional engineer other than the design engineer, verifying that closure has been completed in accordance with the closure plan. A copy of this certification shall be placed in the operating record. The certification testing shall be conducted at a minimum rate of one (1) permeability test per acre and four (4) density/thickness tests per acre.

i. Within 30 days of the Department's issuance of final closure approval of a Class Three landfill, and using a form approved by the Department, the permittee shall record with the appropriate Register of Deeds, a notation in the record of ownership of the property - or some other instrument which is normally examined during title search - that will in perpetuity notify any potential purchaser of the property that the land or a portion thereof was used for the disposal of solid waste. This notice shall define the final boundaries of the waste disposal area including the latitude and longitude, identify the type, location, and quantity of solid waste disposed on the property, and advise potential owners of the property that there are land use restrictions.

j. The permittee may request permission from the Department to remove the notation from the deed if all wastes are properly removed from the facility and there is no environmental impact.

k. All facilities constructed with liner systems in accordance with this regulation shall install a final cover system which, at a minimum, consists of:

(1) A gas management layer or layers, or other gas management design, as necessary;

(2) Eighteen (18) inches of soil with a maximum permeability of 1×10^{-5} centimeters per second, and capable of providing a suitable foundation for the flexible membrane liner specified in paragraph (3) below;

(3) A 20-mil flexible membrane liner with a maximum permeability equal to or less than the bottom liner system, if HDPE is used as the FML, then a sixty (60) mil thickness is required;

(4) A drainage layer; and,

(5) A minimum of two feet of soil capable of supporting native vegetation.

l. All Class Three landfills closed utilizing a flexible membrane cover system shall be constructed to preclude precipitation migration into the landfill. All flexible membrane cover systems shall be constructed in accordance with the requirements of the approved engineering plans, reports, specifications and manufacturer's recommendations.

m. The erosion layer shall be designed to maintain vegetative growth over the landfill by seeding with native grasses or other suitable cover. A 75% or greater vegetative ground cover with no substantial bare spots shall be established and maintained throughout the post-closure period.

n. The final cover system shall promote positive drainage by grading to create at least a 3%, but not greater than 5%, surface slope and a side slope that does not exceed three horizontal feet to one vertical foot, i.e., a 3:1 slope.

o. The Department may, on a case-by-case basis, approve other landfill closure designs, provided there is adequate information to demonstrate that the proposed design meets or exceeds the environmental and public health protection standards outlined in Subparts B, D and E of this regulation.

258.61. Post-closure Care Requirements.

a. Following closure of each Class Three landfill, the permittee shall conduct post-closure care. Post-closure care shall be conducted for a minimum 30 years, except as provided in paragraph b. below, and consist of at least the following:

(1) Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

(2) Maintaining and operating the leachate collection system in accordance with the requirements in 258.40., if applicable. The Department may allow the permittee to stop managing leachate if the permittee demonstrates to the Department’s satisfaction that leachate no longer poses a threat to human health and the environment;

(3) Monitoring the groundwater in accordance with the requirements of Subpart E and maintaining the groundwater monitoring system, if applicable; and,

(4) Maintaining and operating the gas monitoring system in accordance with the requirements of Section 258.23.

b. The length of the post-closure care period may be:

(1) Increased by the Department if the Department determines that the lengthened period is necessary to protect human health and the environment; or,

(2) Decreased by the Department if the permittee can provide technical rationale that the decreased post-closure care period is sufficient to protect human health and the environment.

c. The permittee of all Class Three landfills shall prepare a written post-closure plan that includes, at a minimum, the following information:

(1) A description of the monitoring and maintenance activities required in paragraph a. for each Class Three landfill, and the frequency at which these activities will be performed;

(2) Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and,

(3) A description of the planned uses of the property during the post-closure period. Post- closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this Part. The Department may approve any other disturbance of the containment system if the permittee demonstrates 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 or the environment.

d. Prior to permit issuance, the permittee shall submit to the Department a post-closure plan for review and approval. The post-closure plan shall be updated if any changes occur at the facility which require a deviation from the approved post-closure plan.

e. Following completion of the post-closure care period for each Class Three landfill, the permittee shall submit to the Department, certification that is signed by a South Carolina registered professional engineer other than the design engineer, verifying that post-closure care has been completed in accordance with the post-closure plan.

258.62. - 258.69. (Reserved.)

Subpart G. Financial Assurance Criteria. (See Part I., Section E. of this regulation.)

Subpart H. Permit Application Requirements.

Prior to the construction, operation, expansion or modification of a Class Three landfill, a permit shall be obtained from the Department.

1. Prior to submitting a permit application to the Department, the applicant shall satisfactorily complete the following:

a. Determination of Need. The applicant shall submit to the Department a request pursuant to Regulation 61-107.17. for determining need of the proposed landfill or landfill expansion, if applicable.

b. Consistency Determination. The applicant shall submit to the Department a request for a determination of consistency with items listed below.

(1) State and County/Region Solid Waste Management Plans. The permit applicant shall demonstrate consistency with the State Solid Waste Management Plan in effect at the time of submittal of the request for the Determination of Consistency. The permit applicant shall demonstrate consistency with the county/region plan in effect at the time of the submittal of the request for the Determination of Consistency. Class Three landfills managing solid waste generated solely in the course of normal operation on property under the same ownership or control as the Class Three landfill are not required to demonstrate consistency with the State and host County/Region Solid Waste Management Plans;

(2) Local zoning and land-use ordinances. Documentation demonstrating consistency with local zoning and land-use plans, e.g., zoning map, land-use map, and applicable part of the zoning ordinance shall be submitted to the Department; and,

(3) All other applicable local ordinances. Supporting documentation to include a copy of the ordinance shall be submitted to the Department.

(4) Buffer Requirement. The applicant shall demonstrate that it meets the buffer requirement set forth in Subpart B, Section 258.18. a of this Part at the time of submittal of the demonstration. The Department must notify by certified mail, return receipt requested, the applicant and any other affected person who requests to be notified of its determination of compliance with this buffer requirement.

c. If the Department's final determination of need is terminated, pursuant to R.61-107.17, all other determinations under Section H.1.a. and b. above will also be void.

d. Landfill Siting Study. If the Department determines there is a need for the proposed landfill/expansion pursuant to R.61-107.17., the applicant shall conduct a landfill siting study and submit the results of the study to the Department for a site suitability determination. This study shall be used to eliminate those sites which, due to location restrictions, are unsuitable sites and to determine if the site conditions warrant further permitting activities. The landfill siting study shall include, at a minimum, the following steps:

(1) A preliminary hydrogeologic characterization report on the site, which contains readily available information on the regional, local, and site hydrogeology and groundwater use. The preliminary hydrogeologic characterization report shall be used to eliminate hydrogeologically unsuitable sites, and to determine if site conditions warrant further investigation;

(2) Pending approval of the preliminary hydrogeologic characterization report, a work plan detailing the site specific hydrogeologic investigations to be performed at the site shall be submitted to the Department for review and approval; and,

(3) Upon approval of the work plan specified in paragraph b. above, a site hydrogeologic characterization report shall be prepared and submitted to the Department detailing the findings of the site specific investigations. The landfill siting investigation shall ensure that the proposed landfill location complies with the location criteria outlined in Subpart B of this Part. During review by the Department of the suitability of the site based on the site hydrogeologic characterization report, the permit applicant may proceed with site design, and submittal of a groundwater monitoring plan as specified in Subpart H, Section 5.b.(14) below. Approval of the site shall be required before the Department will comment on engineering plans associated with the construction of the facility.

2. Administrative Review. Upon satisfactory completion of Subpart H.1. above, the applicant shall submit to the Department a complete permit application. The applicant shall submit to the Department a minimum of three copies of the following documents:

a. A completed permit application, on a form provided by the Department.

b. Tonnage Limit. The applicant shall submit to the Department a request for a determination of the maximum annual tonnage limit.

(1) Prior to the issuance of a permit for a new or expanded commercial Class Three landfill, the Department shall approve an allowable maximum annual tonnage limit based on the facility's design capacity, operational capacity, the expected operational life, and the planning area as determined by R.61-107.17, SWM: Demonstration-of-Need provided, however, that the maximum annual tonnage limit must not exceed the maximum yearly disposal rate pursuant to Regulation 61-107.17.

(2) Prior to issuance of a permit for a new or expanded noncommercial Class Three landfill, the Department shall approve a maximum annual tonnage limit based on the facility's design capacity, operational capacity, and the expected operational life.

c. A cost estimate for hiring a third party to close the sum of all active areas of the landfill requiring a final cover at any time during the operating life when the extent and manner of its operation would make closure the most expensive, as indicated in the closure plan. This estimate requires Department approval prior to the permittee establishing a financial assurance mechanism pursuant to Part I., Section E. of this regulation;

d. A Disclosure Statement pursuant to Part I, Section F.1. of this regulation. The Department may accept one disclosure statement for multiple facility permit applicants. This requirement shall not apply if the applicant is a local government or a region comprised of local governments;

e. Complete engineering plans and reports that are signed and stamped by a South Carolina Licensed Professional Engineer in accordance with Item 5. below;

f. The names and addresses of the owners of real property as they appear on the county tax maps as contiguous landowners of the proposed permit area.

3. When the submittal is administratively complete, the Department will notify, in writing, the applicant, the host local government if different from the applicant, and any other person who has made a written request for notification to the Department of the determination. Within 15 days of the Department's notification that the submittal is administratively complete:

a. The applicant for a Class Three landfill that will accept municipal solid waste shall submit to the Department demonstration and documentation that the facility issues negotiation process has been initiated in accordance with S.C. Code Section 44-96-470, to include an affidavit of publication of the public notice in the newspaper as required by Code Section 44-96-470(A).

b. The applicant for a Class Three landfill that will not accept municipal solid waste shall publish notice of the permit application pursuant to Part I, Section D.2. of the regulation, and submit an affidavit of publication of the public notice in the newspaper to the Department.

4. Upon completion of the facility issues negotiation process, the facilitator shall provide to the Department a summary of the results of the negotiations within 14 days of the certification of the facilitator's final report of resolution of the host local government as required by S.C. Code Section 44-96-470.

5. Technical Review. After determining that the permit application is administratively complete, the Department will conduct a Technical Review of the proposed project. The Department's technical review of the permit application will involve the documents and issues addressed in this Section. All individual drawings and plans shall be signed and stamped by a professional engineer duly licensed to practice in the State of South Carolina.

a. Engineering Drawings and Plans. All applications for new Class Three landfills and landfill expansions shall contain engineering drawings that set forth the proposed landfill location, property boundaries, adjacent land uses and construction details. Additional requirements for landfills with leachate recirculation are outlined in SubPart A, Section 258.4. of this Part. All construction drawings shall be bound and rolled and shall contain the following:

(1) A vicinity plan or map that shows the area within one mile of the property boundaries of the landfill in terms of: the existing and proposed zoning and land uses within that area at the time of permit application; and, residences, public and private water supply wells, known aquifers, surface waters (with quality classifications), access roads, bridges, railroads, airports, historic sites, and other existing and proposed man-made or natural features relating to the facility. The plan shall be on a scale of not greater than 500 feet per inch unless otherwise approved by the Department.

(2) Site plans that show: the landfill's property boundaries, as certified by an individual licensed to practice land surveying in the State of South Carolina; off-site and on-site utilities (such as, electric, gas, water, storm, and sanitary sewer systems), rights-of-way and easements; the names and addresses of abutting property owners; the location of soil borings, excavations, test pits, gas venting structures, wells, piezometers, environmental and facility monitoring points and devices, benchmarks and permanent survey markers; on-site buildings and appurtenances, fences, gates, roads, parking areas, drainage culverts, and signs; the delineation of the total landfill area including planned staged development of the landfill's construction and operation, and the lateral limits of any previously filled areas; the location and identification of the sources of cover materials; the location and identification of special waste handling areas; and site topography with five feet minimum contour intervals; and, any other relevant information as necessary for proper operation. The site plan shall show wetlands, property lines, existing wells, water bodies, and soil stockpiles that will be used as cover material. The plan shall show all buildings, to include residences and schools, on adjacent properties. The plan shall be on a scale of not greater than 200 feet per inch unless otherwise approved by the Department.

(3) Detailed plans of the landfill that clearly show in plan and cross-sectional views the following: the original, undeveloped site topography before excavation or placement of solid waste; the existing site topography, if different, including the location and approximate thickness and nature of any existing solid waste; plan view of the location of the seasonal high water table in relation to the bottom elevation of the proposed landfill; a cross sectional view of existing and final elevations, bottom elevation and deflected bottom elevation, and seasonal high water table; geologic units; known and interpolated bedrock elevations; the proposed limits of excavation and waste placement; other devices as needed to divert or collect surface water run-on or run-off; a plan and cross section view of fill progression for the life of the landfill; the final elevations and grades of the landfill; groundwater monitoring system; and, the building locations and appurtenances.

(4) Detailed plans of the sedimentation ponds. These plans shall clearly show in plan and cross sectional views the following: the existing site topography, the seasonal high water table, pond bottom elevation, permanent pool elevation, first flush elevation, maximum elevation for sedimentation clean-out, emergency spillway 100-yr storm elevation, riser pipe, antiseep collars, outlet protection, emergency spillway, dewatering riser, trash/antivortex rack, and sedimentation pond gauge legend.

(5) Detailed plans shall show: the location and placement of each liner system and each leachate collection system, locating and showing all critical grades and elevations of the collection pipe inverts and drainage envelopes, manholes, cleanouts, valves and sumps; and, leachate storage, treatment and disposal systems including the collection network and any treatment, pre-treatment, or storage facilities.

b. Engineering Report. An Engineering Report comprehensively describing the existing site conditions and an analysis of the landfill, including closure and post-closure criteria. Additional requirements for landfills with leachate recirculation are outlined in Section 5.c. below. All engineering reports shall be bound. This report shall:

(1) Specify the filling rate (in tons per day) of the landfill describing the number, types, and specifications of all necessary machinery and equipment needed to effectively operate the landfill at the prescribed filling rate;

(2) Contain a detailed description of all construction phases, including, but not limited to, the liner system, leachate collection system, and final cover system;

(3) Contain an analysis of the site to include:

(a) The name, address, and location of all adjacent landowners; the closest population centers;

(b) A description of the primary transportation systems and waste transportation routes to the landfill (i.e., highways, airports, railways, etc.); and,

(c) An analysis of the existing topography, surface water and subsurface geological conditions;

(4) Discuss the closure and post-closure maintenance and operation of the landfill which shall include, but not be limited to:

(a) A closure design consistent with the requirements contained in Section 258.60;

(b) A post-closure water quality monitoring program consistent with requirements contained in Section 258.61;

(c) Methane monitoring and control systems as needed;

(d) An operation and closure plan for the leachate collection, treatment, and storage facilities consistent with the requirements of this Part; and,

(e) A discussion of the future use of the site including the specific proposed or alternative use. Future uses shall conform to the stabilization plan, required by this regulation and shall not adversely affect the final cover system;

(5) Include appendices demonstrating compliance with pertinent local laws and regulations pertaining to air, land, noise, and water pollution, and other supporting data, including literature citations;

(6) Describe the materials and construction methods for the placement of: each monitoring well; all gas venting systems; each liner and leachate collection and removal system; leachate storage, treatment, and disposal systems; and, cover systems. This description also shall include a discussion of provisions to be taken to prevent frost action upon each liner system in areas where refuse has not been placed;

(7) Estimate the expected quantity of leachate to be generated, including:

(a) An annual water budget estimating leachate generation quantities, prepared for periods of time of initial operation, the interim between the last receipt of waste and application of final cover, and

following facility closure. At a minimum, the following factors shall be considered in the preparation of the precipitation infiltration into the landfill: average monthly temperature; average monthly precipitation; evaporation; evapotranspiration, which should consider the vegetation type and root zone depth; surface/cover soil conditions and their relation to precipitation runoff which shall account for the surface conditions and soil moisture holding capacity; and, all other sources of moisture contribution to the landfill;

(b) Liner and leachate collection system efficiencies calculated using an appropriate analytical or numerical assessment. The factors to be considered in the calculation of collection system efficiency shall include, as a minimum, the saturated hydraulic conductivity of the liner, the liner thickness, the saturated hydraulic conductivity of the leachate collection system, the leachate collection system porosity, the base slope of the liner and leachate collection and removal system interface, the maximum flow distance across the liner and leachate collection and removal system interface to the nearest leachate collection pipe, and the estimated leachate generation quantity as computed in accordance with the requirements of the preceding subparagraph; and,

(c) Information gained from the collection efficiency calculations required in the preceding two paragraphs used to predict the static head of leachate on the liners, volume of leachate to be collected, and the volume of leachate that may permeate through the entire liner system on a monthly basis. This assessment shall also address the amount of leachate expected to be found in the leachate collection and removal system in gallons per acre per day;

(8) Include a design of the leachate storage facility based upon the leachate generation calculation. The design capacity for the leachate storage facility shall be based on the proposed leachate disposal method that allows sufficient lead time for either:

(a) Development of a separate set of engineering reports, plans and specifications for the construction and operation of a leachate treatment facility on-site and to obtain approval of this document before any discharge from the leachate storage facility; or,

(b) Development of a plan to handle leachate destined for off-site treatment at a wastewater treatment facility, and to ensure that the amount of leachate stored on-site is not in excess of the storage capacity available. This plan shall include a legal document (contract, local permit, etc.) certifying acceptance of leachate from the operator of the wastewater treatment facility with all conditions stipulated by the operator of the wastewater treatment facility and all such stipulations addressed in the operations plan;

(9) Include a Construction Plan describing how the landfill will fulfill the requirements of protecting human health and the environment. The plan shall be presented in a manner sufficiently clear and comprehensive for use by the landfill's operator during the life of the landfill. It shall depict the fill progression with respect to site life and shall:

(a) Describe the site's preparation and fill progression for the life of the site in terms of method, depth, location and sequence;

(b) Contain a method of elevation control for the operator including the location and description of the permanent surveying benchmark at the site;

(c) Contain a fill progression discussion describing the placement and compacted thickness of daily, intermediate and final cover;

(d) For soils excavated during construction, identify the stockpile location and volume of

soils; and,

(e) Contain a description of stormwater diversion from leachate collection system in areas of constructed cells that have not had waste placement;

(10) Include an Operation and Maintenance Report prepared to demonstrate how the landfill will meet all the operational requirements. This report shall include, at a minimum, the following:

(a) A description of the project's personnel requirements, stating personnel responsibilities and duties including discussions for training and lines of authority at the landfill;

(b) A description of all machinery and equipment to be used at the landfill, their authorized uses, and safety features;

(c) A description of the operational controls, including but not limited to, signs, hours and days of operation, landfill usage rules and regulations, and traffic flow controls;

(d) A description of the anticipated solid waste to be received per day, specifying the quantities received in tons per day, the fill progression of the landfill, and the method of solid waste placement and compaction, and the anticipated in-place density;

(e) A description of the landfill's solid waste receiving process, including inspection of incoming loads, identification of any waste streams to be excluded, and those wastes to receive special handling, or to require treatment before receipt, and a copy of the Special Waste Analysis and Implementation Plan (SWAIP);

(f) A description of the cover material management plan, specifying the types of cover material (daily, intermediate, and final), identifying the quantities required and sources for each cover material by type, including the method of cover material placement, compaction, and the anticipated density;

(g) A description of the project's gas monitoring program that discusses explosive gas generation at the landfill and the controls used to ensure that gas generated at the landfill will not create a hazard to health, safety, or property;

(h) A description of how winter and inclement weather operations will be conducted; and,

(i) If applicable, a description of the operation of a convenience station at the landfill for smaller private vehicles to unload refuse at an area other than the landfill's working face;.

(11) Contain a Stabilization Plan. Measures shall be taken within 30 days of establishing soil stockpiles to stabilize the stockpiles not in active use. The Stabilization Plan shall address adequate seeding or other erosion control measures of the site and:

(a) Identify and locate existing vegetation to be retained and proposed vegetation to be used for cover, soil stockpiles, and other purposes;

(b) If appropriate, provide a seeding and planting schedule, including the identification of the rationale for the seed mixture choice and fertilization and procedures for seed application, mulching, and maintenance; and,

(c) Describe the planting plan and schedule which identifies plants to be used consistent with future use proposals;

(12) Include a Quality Assurance/Quality Control (QA/QC) Report prepared in accordance with accepted QA/QC practices. This report shall address the construction requirements set forth in this Part for each phase of construction and shall include, but not be limited to:

(a) A delineation of the QA/QC management organization, including the chain of command of the QA/QC inspectors and contractors;

(b) A description of the required level of experience and training for the contractor, his crew, and QA/QC inspectors for every major phase of construction, in sufficient detail to demonstrate that the installation methods and procedures required in this document are properly implemented; and,

(c) A description of the QA/QC testing protocols for every major phase of construction, including, but not limited to, the base liner system, leachate collection system, and final cover system. The QA/QC testing protocol shall include at a minimum: the frequency of inspection; field testing; sampling for laboratory testing, the sampling and field testing procedures and equipment to be utilized; the calibration of field testing equipment, the frequency of performance audits; the sampling size; the soils or geotechnical laboratory to be used; the laboratory procedures to be utilized; the calibration of laboratory equipment and QA/QC of laboratory procedures, the limits for test failure; and, a description of the corrective procedures to be used upon test failure;

(13) Include a Contingency Plan that addresses an organized, planned and coordinated, technically and financially feasible course of action to be taken in responding to contingencies during the construction and operation of the landfill. The plan shall provide a description of the criteria to be utilized in evaluating deficiencies, and selecting and implementing corrective actions. The plan shall, at a minimum, address:

(a) Procedures for responding to deficiencies during the construction phase resulting from circumstances including, but not limited to, inclement weather, defective materials or construction inconsistent with specifications as demonstrated by quality control testing;

(b) Actions to be taken during operation of the landfill with respect to: personnel and user safety; on-site personal injury; fires; explosive landfill gases detected on site; dust; litter; odor; noise; equipment breakdown; unusual traffic conditions; vectors; disposition of unapproved wastes; receipt of unauthorized wastes; releases of hazardous or toxic materials; groundwater and surface water contamination which may include public water supply contamination as a result of an accidental spill; and, the occurrence of the leachate storage facility being at or above capacity; and,

(c) Procedures to be used in response to: tank and surface impoundment spills or leakage, including removal of the waste and repair of such structures; and, the inability of the approved leachate treatment facility to accept leachate from the landfill for an indefinite period of time;

(14) Include a Groundwater Monitoring Plan. Upon obtaining approval of the investigations performed to satisfy the landfill siting study, a groundwater monitoring plan shall be submitted to the Department for review and approval. The groundwater monitoring plan shall detail the activities to be performed to ensure compliance with the requirements of Section 258.51., Section 258.53., and Section 258.54.;

(15) Include a Closure Plan in the permit application that details the activities to be performed to satisfy the requirements of Section 258.60.; and,

(16) Include a Post-closure Plan that details the activities to be performed to satisfy the requirements of Section 258.61.

c. South Carolina Coastal Zone Management Plan. The proposed landfill project shall be consistent with the South Carolina Coastal Zone Management Plan, if the landfill is located in the coastal zone as defined in accordance with the Coastal Zone Management Act.

d. Leachate Recirculation. All landfills proposing leachate recirculation shall comply with the requirements outlined in Subpart I below.

Subpart I. Leachate Recirculation.

1. Leachate recirculation at Class Three Landfills shall be limited to facilities which meet the following criteria:

a. Leachate recirculation shall be allowed only in facilities that were designed and constructed with a minimum of a composite liner system or equivalent, and that comply with all requirements for a Class 3 Landfill.

b. Leachate recirculation shall be allowed only in facilities which have a leachate collection system capable of maintaining less than one foot of leachate head on the liner system at all times.

c. Leachate and gas condensate collected from the facility shall be the only liquids allowed for recirculation back into the landfill.

d. Leachate recirculation will not be allowed in an area of the footprint which exhibits evidence of significant leakage of the liner system. A buffer approved by the Department shall be maintained between the suspected leaking area and the area of leachate recirculation.

e. Leachate recirculation shall be allowed only at facilities which are designed and constructed to have final slopes which are no steeper than three to one.

f. The Class Three Landfill shall have sufficient storage capacity onsite to handle all leachate generated by the facility in the event leachate recirculation activities are suspended.

g. Contracts to handle the total leachate generated by the facility, or approved and permitted onsite treatment facilities capable of handling all leachate generated by the facility shall be maintained at all Class Three Landfills performing leachate recirculation.

h. The permittee shall have adequate landfill gas control measures in place at the start of leachate recirculation to control the migration of methane and to control the presence of any odors associated with leachate recirculation.

i. A minimum thickness of 30 feet of waste shall be placed in a new cell before leachate recirculation can begin.

2. Class Three landfills performing leachate recirculation shall maintain the following buffer distances from facility side slopes:

a. If leachate is applied to the landfill by way of spraying the leachate at the working face, at a minimum, a 50 foot buffer shall be maintained at all times.

b. If leachate is applied to the landfill by way of pumping into a trench system, at a minimum, a 100 foot buffer shall be maintained at all times.

c. If leachate is applied to the landfill by way of injecting the leachate into vertical wells installed into the waste, at a minimum, a 100 foot buffer shall be maintained at all times.

d. Other methods of leachate recirculation into the facility shall have buffer zones from side slopes approved by the Department.

e. The Department may require additional buffer distances should evidence exist that the current buffer zones are not sufficient to protect stability of the landfill, to prevent the outbreak of leachate seeps, or to otherwise protect human health and the environment.

3. Approval to perform leachate recirculation shall be requested by the facility and approved by the Department on an annual basis. Upon a request for annual renewal of approval to leachate recirculate, the facility shall submit to the Department the following information in the form of an annual report:

a. Analytical results from leachate testing for the parameters specified in Appendix VI;

b. A summary of daily leachate recirculation rates along with injection locations;

c. Monthly leachate recirculation system inspection records, training procedures, and notification procedures;

d. Monthly landfill leachate and gas generation rate (if applicable) results; and,

e. Any requests for modification to the leachate recirculation system.

4. If problems associated with leachate recirculation are identified, the permittee shall:

a. Take all steps necessary to ensure protection of human health and the environment; and,

b. Within seven days of detection of a problem with leachate recirculation, place in the operating record and submit to the Department a copy of all actions taken to remedy the problem, and any proposed changes to the leachate recirculation system to prevent future problems.

5. Engineering Report. In addition to the permitting requirements outlined for Class Three Landfills in this Part, the permit application shall contain, at a minimum, the following:

a. Engineering drawings with detailed plans of the landfill that clearly show in plan and cross- sectional views the following: each leachate injection well; pipe lines; pipe inverts; drainage envelopes; manholes; cleanouts; valves; sumps; other devices as needed for leachate injection and monitoring, if applicable; and, a proposed waste saturation profile;

b. An engineering report containing a description of the existing site conditions and an analysis of the proposed landfill. The report shall:

(1) Contain design calculations using waste shear strength at 100% saturation that demonstrate that 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. Class Three landfills shall have a minimum 1.7 safety factor against failure, where the soil conditions are complex and when available strength data do not provide a consistent, complete, or logical picture of the strength characteristics. Where the soil conditions are uniform and high quality strength data provides a consistent, complete, and logical picture of the strength characteristics as determined by the Department, a minimum 1.2 safety factor against failure shall be used.

(2) Specify the leachate application rate of the landfill in gallons per day, specify the current leachate generation rates, and list the number, types, and specifications of all necessary machinery and equipment needed to effectively operate the application system at the landfill.

(3) Contain liner and leachate collection system efficiencies calculated using an appropriate analytical or numerical assessment. The factors to be considered in the calculation of collection system efficiency shall include, at a minimum, the saturated hydraulic conductivity of the liner, the liner thickness, the saturated hydraulic conductivity of the leachate collection system, the leachate collection system porosity, the base slope of the liner and leachate collection and removal system interface, the maximum flow distance across the liner and leachate collection and removal system interface to the nearest leachate collection pipe, the estimated leachate generation, including both natural quantity and the approved injection rate. The estimated leachate generation shall be used to predict the static head of leachate on the liners, volume of leachate to be collected, and the volume of leachate that may permeate through the entire liner system on a monthly basis. This assessment shall also address the amount of leachate expected to be found in the leachate collection and removal system in gallons per acre per day.

(4) Contain a leachate recirculation operation and maintenance report for the landfill that includes, at a minimum, the following:

(a) A description of the project's personnel requirements, stating personnel responsibilities and duties including discussions for training and lines of authority at the landfill; and,

(b) A description of all machinery and equipment to be used at the landfill for leachate recirculation, their authorized uses, and safety features.

(5) Contain a contingency plan discussing the course of action to be taken in responding to fires, leachate seeps, leachate releases, and other pertinent situations.

(6) Contain a description of the method for collecting and controlling landfill gases based on calculations of the estimated landfill gas generation during life of the landfill.

(7) Contain a demonstration of adequate storage capacity for all leachate generated at the site.

(8) Contain analytical results from leachate testing for the parameters specified in Appendix VI. prior to the start of leachate recirculation at the site.

Subpart J. Permit Conditions and Permit Review.

1. Application forms for permits shall be provided by the Department and shall be submitted with sufficient detail to support a judgment that operation of the disposal system will not violate the laws and regulations of the State of South Carolina. The application shall be signed by the permittee of the Class

Three landfill. The approved application and associated plans and drawings shall be an enforceable part of the permit. Permits shall be effective for the design and operational life of the facility.

2. Prior to issuance of a permit for major modifications, as determined by the Department, and for new construction, the Department will make the draft permit available for public review and comment pursuant to Part I, Section D of this regulation.

3. The Department shall review the permit for each Class Three landfall at least once every five years, unless otherwise specified by the Department. Upon notification from the Department, the landfill shall submit to the Department a topographic survey map of the site that shows the contours at the beginning and the end of the period since the last permit review.

a. If, upon review, the Department finds that material or substantial violations of the permit demonstrate the permittee's disregard for, or inability to comply with, applicable laws, regulations, or requirements, and would make continuation of this permit not in the best interests of human health and safety or the environment, the Department may, after a hearing, amend or revoke the permit, as appropriate and necessary. When a permit is reviewed, the Department shall include additional limitations, standards, or conditions when the technical limitations, standards, or regulations on which the original permit was based have been changed by statute or amended by regulation.

b. The Department may amend or attach conditions to a permit when:

(1) There is a significant change in the manner and scope of operation which may require new or additional permit conditions or safeguards to protect human health and safety and the environment;

(2) The investigation has shown the need for additional equipment, construction, procedures, and testing to ensure the protection of human health and safety and the environment; and,

(3) The amendment is necessary to meet changes in applicable regulatory requirements.

4. Any permits issued pursuant to this regulation shall not be valid after a period of twelve (12) months from the effective date of the permit, if construction of the facility has not begun by the end of this period unless granted a variance by the Department.

Subpart K. Transfer of Ownership.

The Department may, upon written request, transfer a permit to a new permittee where no other change in the permit is necessary pursuant to Part I, F.2.c. of this regulation.

Appendix I. ACCEPTABLE WASTE FOR CLASS TWO LANDFILLS

The following types of waste have been determined by the Department to be environmentally safe and may be accepted at Class Two Landfills unless specifically prohibited by the Department. Acceptable wastes may be generated by construction, demolition, land-clearing, industrial, and/or manufacturing activities, and/or obtained from segregated commercial waste. However, any of the materials listed in this appendix that have been contaminated by any hazardous constituent listed in the S.C. Hazardous Waste Management Regulations 61-79.261, or petroleum products, are prohibited from disposal at a Class Two Landfill.

Acceptable Land-Clearing Debris Such As:

- brush & limbs
- earthen material, e.g., clays, sands, gravels, & silts
- logs
- rock
- root mats
- top soil
- tree stumps
- vegetation

Acceptable Debris Such As:

- asbestos-containing material[2]
- bricks & masonry blocks
- cardboard
- dry paint cans
- dry caulking tubes
- fiberglass matting
- floor covering
- glass
- glass wire (optical fiber)
- hardened asphaltic concrete[3]
- hardened cement
- hardened concrete (may include rebar)
- insulation material
- lumber (includes treated lumber)
- mirrors
- other items physically attached to structure, e.g., signs, mailboxes, awning, vinyl siding
- other structural fabrics
- packaging material
- painted waste (includes lead-based paint)
- pallets & crates
- pipes
- plaster & plasterboard
- polyfiberglass (highly polished, cured material used for shower stalls, roofing, etc.)
- shingles & roofing materials
- structural steel
- tile (floor, wall & ceiling)
- tires[4]
- tubing
- wall coverings

Acceptable Brown Goods:

- box springs
- mattresses
- wooden swing sets
- nonmotorized bulky outdoor
- children's toys
- furniture including lawn furniture
  - -laminated
  - -metal[5]
  - -plastic
  - -PVC
  - -vinyl
  - -wooden

Animal Carcasses Acceptable Under Following Conditions:

[2] Friable and nonfriable asbestos-containing material shall be disposed in a designated area and covered immediately upon receipt with at least six inches (6") of acceptable material. Prior to disposal of asbestos-containing material, the generator of the asbestos waste shall obtain a "permission for disposal" letter from the Department's Bureau of Air Quality (BAQ) and submit this letter to the landfill. All landfills accepting asbestos-containing material for disposal are subject to the BAQ regulation 61-86.1 Standards of Performance for Asbestos Abatement Operations, and the National Emissions Standards for Hazardous Air Pollutants[40CFR61, Subpart M;]

[3] Tar sealant material is not acceptable.

[4] Tires shall be reduced in size by a minimum of one-eighth the size of the original tire prior to landfill disposal.

[5] The Department recommends that all metal furniture be recycled if feasible.

·Animal carcasses shall be buried in a separate designated area. The facility shall submit to the Department a written request to dispose of animal carcasses including a plan that shows the portion of the landfill to be used for this type of disposal. The permit will be modified to reflect the designated disposal area, and;

·Animal carcasses shall be buried and covered with at least twelve inches (12") of dirt immediately upon receipt.

·Hydrated lime shall be added to the carcass and surrounding area before cover is applied to control bacterial growth and odor.

·Mass kill burial shall not be acceptable at Class Two Landfills unless approved by the Department prior to disposal.

Appendix II. UNACCEPTABLE WASTE FOR CLASS TWO LANDFILLS

The following types of waste have been determined to pose a potential threat to the environment and shall not be accepted at Class Two Landfills. Wastes are considered to be contaminated if a waste has come into contact with and maintains a residue or characteristic of the contaminated materials as described herein.

Any Waste That Has Been Contaminated by Petroleum Products Such As:

- ·absorbent (vermiculite)
- ·concrete
- ·containers
- ·filters (oil, etc.)
- ·mechanical/machine parts
- ·paper towels & rags
- ·pipes
- ·soil
- ·storage tanks
- ·tar sealant material

Any Waste That Has Been Contaminated by Polychlorinated Biphenyls (PCBs) Such As:

- ·any waste that has come in contact with any liquid-containing PCBs
- ·capacitors
- ·electrical components
- ·lighting ballasts
- ·transformers

Any Waste That Has Been Contaminated by Organic Chemicals or Solvents (industrial plants, chemical plants, laboratories, construction sites, etc.) Such As:

- ·absorbent
- ·adhesives
- ·caulking compounds
- ·cement
- ·containers (packaging)
- ·filters
- ·flooring (wood, carpet, etc.)
- ·glazing compound
- ·mechanical/machine parts (valves, etc.)
- ·paint thinner
- ·pipes
- ·pumps
- ·soil
- ·storage tanks
- ·tar
- ·vats

Any Waste That Has Been Contaminated by Preservatives, (pentachlorophenol & creosote) Such As:

- ·containers
- ·mechanical parts used in manufacturing process
- ·railroad ties
- ·soil
- ·utility poles

Any Waste That Has Been Contaminated by Pesticides/Herbicides Such As:

- concrete
- containers (packaging)
- equipment used for application
- mechanical/machine parts
- pallets & crates
- soil
- vats
- wood (storage area)

Miscellaneous Waste Such As:

- lamps[6]
- liquid waste (paint, paint thinner, etc.)
- unpolished fiberglass (Bondo)
- wastes/substances determined by the Department to be unacceptable

Cathode Ray Tubes (CRTs) and Electronic Equipment Such As:

- cameras
- compact discs (CDs)
- computers
- computer monitors
- communication & navigation equipment
- digital Versatile Disc (DVDs)
- displays
- hand-held video game machines
- mainframes
- microwave ovens
- personal digital assistants (PDAs)
- radios
- stereos
- televisions
- test equipment (oscilloscopes, etc.)
- video cassette recorders (VCRs)
- video game machines

Appendix III. CONSTITUENTS FOR DETECTION MONITORING FOR CLASS TWO LANDFILLS

Common name	CAS RN
pH	
Specific Conductance	
Temperature	
Inorganic Constituents:	
(1) Arsenic	(Total)
(2) Barium	(Total)
(3) Cadmium	(Total)
(4) Chromium	(Total)
(5) Lead	(Total)
(6) Mercury	(Total)
(7) Selenium	(Total)
(8) Silver	(Total)
(9) Chloride	(Total)
(10) Nitrate	(Total)
(11) Sulfate	(Total)
Organic Constituents:	
(12) Benzene	71-43-2
(13) Carbon tetrachloride	56-23-5
(14) Chlorobenzene	108-90-7

[6] Fluorescent lamps and high intensity discharge (HID) lamps such as metal halide and mercury vapor lamps.

(15) Chloroform; Trichloromethane	67-66-3
(16) 1,1-Dichloroethane; Ethylidene chloride	75-34-3
(17) 1,2-Dichloroethane; Ethylene dichloride	107-06-2
(18) 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
(19) cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
(20) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
(21) Ethylbenzene	100-41-4
(22) Methylene chloride	75-09-2
(23) Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
(24) Toluene	108-88-3
(25) 1,1,1-Trichloroethane; Methylchloroform	71-55-6
(26) 1,1,2-Trichloroethane	79-00-5
(27) Trichloroethylene; Trichloroethene	79-01-6
(28) Vinyl chloride	75-01-4
(29) Xylenes	1330-20-7

Appendix IV. CONSTITUENTS FOR DETECTION MONITORING FOR CLASS THREE LANDFILLS

Common name[7]	CAS RN[8]
pH	
Specific Conductance	
Inorganic Constituents:	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
Organic Constituents:	
(16) Acetone	67-64-1
(17) Acrylonitrile	107-13-1
(18) Benzene	71-43-2
(19) Bromochloromethane	74-97-5
(20) Bromodichloromethane	75-27-4
(21) Bromoform; Tribromomethane	75-25-2

[7] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[8] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

(22) Carbon disulfide	75-15-0
(23) Carbon tetrachloride	56-23-5
(24) Chlorobenzene	108-90-7
(25) Chloroethane; Ethyl chloride	75-00-3
(26) Chloroform; Trichloromethane	67-66-3
(27) Dibromochloromethane; Chlorodibromomethane	124-48-1
(28) 1,2-Dibromo-3-chloropropane; DBCP	96-12-8
(29) 1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
(30) o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
(31) p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
(32) trans-1,4-Dichloro-2-butene	110-57-6
(33) 1,1-Dichloroethane; Ethylidene chloride	75-34-3
(34) 1,2-Dichloroethane; Ethylene dichloride	107-06-2
(35) 1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
(36) cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
(37) trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
(38) 1,2-Dichloropropane; Propylene dichloride	78-87-5
(39) cis-1,3-Dichloropropene	10061-01-5
(40) trans-1,3-Dichloropropene	10061-02-6
(41) Ethylbenzene	100-41-4
(42) 2-Hexanone; Methyl butyl ketone	591-78-6
(43) Methyl bromide; Bromomethane	74-83-9
(44) Methyl chloride; Chloromethane	74-87-3
(45) Methylene bromide; Dibromomethane	74-95-3
(46) Methylene chloride; Dichloromethane	75-09-2
(47) Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
(48) Methyl iodide; Iodomethane	74-88-4
(49) 4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
(50) Styrene	100-42-5
(51) 1,1,1,2-Tetrachloroethane	630-20-6
(52) 1,1,2,2-Tetrachloroethane	79-34-5
(53) Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
(54) Toluene	108-88-3
(55) 1,1,1-Trichloroethane; Methylchloroform	71-55-6
(56) 1,1,2-Trichloroethane	79-00-5
(57) Trichloroethylene; Trichloroethene	79-01-6
(58) Trichlorofluoromethane; CFC-11	75-69-4
(59) 1,2,3-Trichloropropane	96-18-4
(60) Vinyl acetate	108-05-4
(61) Vinyl chloride	75-01-4
(62) Xylenes	1330-20-7

Appendix V. LIST OF HAZARDOUS INORGANIC AND ORGANIC CONSTITUENTS

Common name[9]	CAS RN[10]
Acenaphthene	83-32-9

[9] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[10] Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

Acenaphthylene		208-96-8
Acetone		67-64-1
Acetonitrile; Methyl cyanide		75-05-8
Acetophenone		98-86-2
2-Acetylaminofluorene; 2-AAF.		53-96-3
Acrolein		107-02-8
Acrylonitrile		107-13-1
Aldrin		309-00-2
Allyl chloride		107-05-1
4-Aminobiphenyl		92-67-1
Anthracene		120-12-7
Antimony		(Total)
Arsenic		(Total)
Barium		(Total)
Benzene		71-43-2
Benzo[a]anthracene; Benzanthracene		56-55-3
Benzo[b]fluoranthene		205-99-2
Benzo[k]fluoranthene		207-08-9
Benzo[ghi]perylene		191-24-2
Benzo[a]pyrene		50-32-8
Benzyl alcohol		100-51-6
Beryllium		(Total)
alpha-BHC		319-84-6
beta-BHC		319-85-7
delta-BHC		319-86-8
gamma-BHC; Lindane		58-89-9
Bis(2-chloroethoxy)methane		111-91-1
Bis(2-chloroethyl) ether; Dichloroethyl ether		111-44-4
Bis-(2-chloro-1-methylethyl) ether; 2,2[prime]-Dichlorodiisopropyl ether;	DCIP.[11]	108-60-1
Bis(2-ethylhexyl) phthalate		117-81-7
Bromochloromethane; Chlorobromomethane		74-97-5
Bromodichloromethane; Dibromochloromethane		75-27-4
Bromoform; Tribromomethane		75-25-2
4-Bromophenyl phenyl ether		101-55-3
Butyl benzyl phthalate; Benzyl butyl phthalate		85-68-7
Cadmium		(Total)
Carbon disulfide 75-15-0		
Carbon tetrachloride 56-23-5		
Chlordane		footnote[12]
p-Chloroaniline		106-47-8
Chlorobenzene		108-90-7
Chlorobenzilate		510-15-6
p-Chloro-m-cresol; 4-Chloro-3-methylphenol		59-50-7
Chloroethane; Ethyl chloride		75-00-3
Chloroform; Trichloromethane		67-66-3

[11] This substance is often called bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, propane, 2,2[sec]-oxybis[2-chloro- (CAS RN 39638-32-9).

[12] Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6).

2-Chloronaphthalene	91-58-7
2-Chlorophenol	95-57-8
4-Chlorophenyl phenyl ether	7005-72-3
Chloroprene	126-99-8
Chromium	(Total)
Chrysene	218-01-9
Cobalt	(Total)
Copper	(Total)
m-Cresol; 3-Methylphenol	108-39-4
o-Cresol; 2-Methylphenol	95-48-7
p-Cresol; 4-Methylphenol	106-44-5
Cyanide	57-12-5
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7
4,4[prime]-DDD	72-54-8
4,4[prime]-DDE	72-55-9
4,4[prime]-DDT	50-29-3
Diallate	2303-16-4
Dibenz[a,h]anthracene	53-70-3
Dibenzofuran	132-64-9
Dibromochloromethane; Chlorodibromomethane.	124-48-1
1,2-Dibromo-3-chloropropane; DBCP.	96-12-8
1,2-Dibromoethane; Ethylene dibromide; EDB.	106-93-4
Di-n-butyl phthalate	84-74-2
o-Dichlorobenzene; 1,2- Dichlorobenzene.	95-50-1
m-Dichlorobenzene; 1,3- Dichlorobenzene	541-73-1
p-Dichlorobenzene; 1,4- Dichlorobenzene.	106-46-7
3,3[prime]-Dichlorobenzidine	91-94-1
trans-1,4-Dichloro-2-butene	110-57-6
Dichlorodifluoromethane; CFC 12	75-71-8
1,1-Dichloroethane; Ethyldidene chloride	75-34-3
1,2-Dichloroethane; Ethylene dichloride.	107-06-2
1,1-Dichloroethylene; 1,1-Dichloroethene	75-35-4
Vinylidene chloride cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
trans-1,2-Dichloroethylene trans-1,2-Dichloroethene	156-60-5
2,4-Dichlorophenol	120-83-2
2,6-Dichlorophenol	87-65-0
1,2-Dichloropropane; Propylene dichloride.	78-87-5
1,3-Dichloropropane; Trimethylene dichloride	142-28-9
2,2-Dichloropropane; Isopropylidene chloride	594-20-7
1,1-Dichloropropene	563-58-6
cis-1,3-Dichloropropene	10061-01-5
trans-1,3-Dichloropropene	10061-02-6
Dieldrin	60-57-1
Diethyl phthalate	84-66-2
O,O-Diethyl O-(2-pyrazinyl) phosphorothioate	297-97-2
Dimethoate	60-51-5
p-(Dimethylamino)azobenzene	60-11-7
7,12-Dimethylbenz[a]anthracene	57-97-6
3,3[prime]-Dimethylbenzidine	119-93-7
alpha, alpha-Dimethylphenethylamine	122-09-8
2,4-Dimethylphenol; m-Xylenol	105-67-9

Dimethyl phthalate	131-11-3
m-Dinitrobenzene	99-65-0
4,6-Dinitro-o-cresol 4,6-Dinitro-2- methylphenol	534-52-1
2,4-Dinitrophenol	51-28-5
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
Dinoseb; DNBP; 2-sec-Butyl-4,6- methylphenol dinitrophenol.	88-85-7
Di-n-octyl phthalate	117-84-0
Diphenylamine	122-39-4
Disulfoton	298-04-4
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Ethylbenzene	100-41-4
Ethyl methacrylate	97-63-2
Ethyl methanesulfonate	62-50-0
Famphur	52-85-7
Fluoranthene	206-44-0
Fluorene	86-73-7
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
Hexachloroethane	67-72-1
Hexachloropropene	1888-71-7
2-Hexanone; Methyl butyl ketone	591-78-6
Indeno(1,2,3-cd)pyrene	193-39-5
Isobutyl alcohol	78-83-1
Isodrin	465-73-6
Isophorone	78-59-1
Isosafrole	120-58-1
Kepone	143-50-0
Lead	(Total)
Mercury	(Total)
Methacrylonitrile	126-98-7
Methapyrilene	91-80-5
Methoxychlor	72-43-5
Methyl bromide; Bromomethane	74-83-9
Methyl chloride; Chloromethane	74-87-3
3-Methylcholanthrene	56-49-5
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
Methyl iodide; Iodomethane	74-88-4
Methyl methacrylate	80-62-6
Methyl methanesulfonate	66-27-3
2-Methylnaphthalene	91-57-6
Methyl parathion; Parathion methyl	298-00-0
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
Methylene bromide; Dibromomethane	74-95-3

Methylene chloride; Dichloromethane	75-09-2
Naphthalene	91-20-3
1,4-Naphthoquinone	130-15-4
1- Naphthylamine	134-32-7
2- Naphthylamine	91-59-8
Nickel	(Total)
o-Nitroaniline; 2-Nitroaniline	88-74-4
m-Nitroaniline; 3-Nitroaniline	99-09-2
p-Nitroaniline; 4-Nitroaniline	100-01-6
Nitrobenzene	98-95-3
o- Nitrophenol; 2-Nitrophenol	88-75-5
p- Nitrophenol; 4-Nitrophenol	100-02-7
N-Nitrosodi-n-butylamine	924-16-3
N-Nitrosodiethylamine	55-18-5
N-Nitrosodimethylamine	62-75-9
N-Nitrosodiphenylamine	86-30-6
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine;. Di-n-propylnitrosamine	621-64-7
N-Nitrosomethylethalamine	10595-95-6
N-Nitrosopiperidine	100-75-4
N-Nitrosopyrrolidine	930-55-2
5-Nitro-o-toluidine	99-55-8
Parathion	56-38-2
Pentachlorobenzene	608-93-5
Pentachloronitrobenzene	82-68-8
Pentachlorophenol	87-86-5
Phenacetin	62-44-2
Phenanthrene	85-01-8
Phenol	108-95-2
p-Phenylenediamine	106-50-3
Phorate	298-02-2
Polychlorinated biphenyls; PCBs;.	Footnote[13]
Pronamide	23950-58-5
Propionitrile; Ethyl cyanide	107-12-0
Pyrene	129-00-0
Safrole	94-59-7
Selenium	(Total)
Silver	(Total)
Silvex; 2,4,5-TP	93-72-1
Styrene	100-42-5
Sulfide	18496-25-8
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5
2,3,7,8-TCDD; 2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6
1,2,4,5-Tetrachlorobenzene	95-94-3
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5

[13] Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5).

Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
2,3,4,6-Tetrachlorophenol	58-90-2
Thallium	(Total)
Tin	(Total)
Toluene	108-88-3
o-Toluidine	95-53-4
Toxaphene	Footnote[14]
1,2,4-Trichlorobenzene	120-82-1
1,1,1-Trichloroethane; Methylchloroform.	71-55-6
1,1,2-Trichloroethane	79-00-5
Trichloroethylene; Trichloroethene	79-01-6
Trichlorofluoromethane; CFC-11	75-69-4
2,4,5-Trichlorophenol	95-95-4
2,4,6-Trichlorophenol	88-06-2
1,2,3-Trichloropropane	96-18-4
O,O,O-Triethyl phosphorothioate	126-68-1
sym-Trinitrobenzene	99-35-4
Vanadium	(Total)
Vinyl acetate	108-05-4
Vinyl chloride; Chloroethene	75-01-4
Xylene (total)	Footnote[15]
Zinc	(Total)

Appendix VI. LEACHATE TESTING PARAMETERS FOR CLASS THREE LANDFILLS

1. BOD
2. TOC
3. COD
4. Total Suspended Solids
5. TKN Nitrogen
6. Ammonia Nitrogen
7. Nitrate
8. Total Phosphorus
9. Alkalinity as CaCO3
10. Total Hardness as CaCO3
11. pH
12. Calcium
13. Magnesium
14. Potassium
15. Sodium
16. Chloride
17. Sulfate
18. Total Iron
19. VOC's Listed in Appendix III

[14] Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.

[15] Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p- xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7).