SUBCHAPTER 13B - SOLID WASTE MANAGEMENT

SECTION .0100 - GENERAL PROVISIONS


15A NCAC 13B .0101  DEFINITIONS

The definitions in G.S. 130A-290 and the following definitions shall apply throughout this Subchapter:

1) "Agricultural Waste" means waste materials produced from the raising of plants and animals, including animal manures, bedding, plant stalks, hulls, and vegetable matter.

2) "Airport" means public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

3) "Backyard Composting" means the on-site composting of yard waste from residential property by the owner or tenant for non-commercial use.

4) "Blood products" means all bulk blood and blood products.

5) "Cell" means compacted solid waste completely enveloped by a compacted cover material.

6) "Compost" means decomposed, humus-like organic matter, free from pathogens, offensive odors, toxins or materials harmful at the point of end use. Compost is suitable for use as a soil conditioner with varying nutrient values.

7) "Compost Facility" means a solid waste facility which utilizes a controlled biological process of degrading non-hazardous solid waste. A facility may include materials processing and hauling equipment; structures to control drainage; and structures to collect and treat leachate; and storage areas for the incoming waste, the final products, and residual materials.

8) "Composting" means the controlled decomposition of organic waste by naturally occurring bacteria, yielding a stable, humus-like, pathogen-free final product resulting in volume reduction of 30 - 75 percent.

9) "Composting Pad" means a surface, whether soil or manufactured, where the process of composting takes place, and where raw and finished materials are stored.

10) "Curing" means the final state of composting, after the majority of the readily metabolized material has been decomposed, in which the compost material stabilizes and dries.

11) "Demolition landfill" means a sanitary landfill that was limited to receiving stumps, limbs, leaves, concrete, brick, wood, uncontaminated earth or other solid wastes approved by the Division, which either ceased operation or was converted to a Land Clearing and Inert Debris Landfill pursuant to Rule .0563.

12) "Division" means the Director of the Division of Waste Management or the Director's authorized representative.

13) "Erosion control measure, structure, or device" means physical devices constructed, and management practices utilized, to control sedimentation and soil erosion such as silt fences, sediment basins, check dams, channels, swales, energy dissipation pads, seeding, mulching and other similar items.

14) "Explosive gas" means Methane (CH₄).


16) "Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the 100-year flood.

17) "Foreign Matter" means metals, glass, plastics, rubber, bones, and leather, but does not include sand, grit, rocks or other similar materials.

18) "Hazardous waste landfill facility" means any facility or any portion of a facility for disposal of hazardous waste on or in land in accordance with rules promulgated under this article.

19) "Incineration" means the process of burning solid, semi-solid or gaseous combustible wastes to an inoffensive gas and a residue containing little or no combustible material.

20) "Industrial Process Waste" means any solid, semi-solid, or liquid waste generated by a manufacturing or processing plant which is a result of the manufacturing or processing process. This definition does not include packaging materials associated with such activities.
"Industrial Solid Waste Landfill" means a facility for the land disposal of "industrial solid waste" as defined in Item (11) of Rule .1602 of this Subchapter, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257.

"Land clearing and inert debris landfill" means a facility for the land disposal of land clearing waste, concrete, brick, concrete block, uncontaminated soil, gravel and rock, untreated and unpainted wood, and yard trash.

"Land clearing waste" means solid waste which is generated solely from land clearing activities such as stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material.

"Leachate" means any liquid, including any suspended components in liquid, that has percolated through or drained from solid waste.

"Lower explosive limit" means the lowest percent by volume of a mixture of explosive gases which will propagate a flame in air at 25 degrees Celsius and atmospheric pressure.

"Microbiological wastes" means and includes cultures and stocks of etiologic agents. The term includes cultures of specimens from medical, pathological, pharmaceutical, research, commercial, and industrial laboratories.

"Mulch" means a protective covering of various substances, especially organic, to which no plant food has been added and for which no plant food is claimed. Mulch is generally placed around plants to prevent erosion, compaction, evaporation of moisture, freezing of roots, and weed growth.

"One-hundred year flood" means a flood that has a one percent or less chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 years on the average over a significantly long period.

"Open burning" means any fire wherein the products of combustion are emitted directly into the outdoor atmosphere and are not directed thereto through a stack or chimney, incinerator, or other similar devices.

"Pathogens" means organisms that are capable of producing infection or diseases, often found in waste materials.

"Pathological wastes" means and includes human tissues, organs, body parts, secretions and excretions, blood and body fluids that are removed during surgery and autopsies; and the carcasses and body parts of all animals that were exposed to pathogens in research, were used in the production of biologicals or in the in vivo testing of pharmaceuticals, or that died of known or suspected infectious disease.

"Putrescible" means solid waste capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisances from odors and gases, such as kitchen wastes, offal and carcasses.

"Radioactive waste material" means any waste containing radioactive material as defined in G.S. 104E-5(14).

"Regulated Medical Waste" means blood and body fluids in individual containers in volumes greater than 20 ml, microbiological waste, and pathological waste that have not been treated pursuant to Rule .1207 of this Subchapter.

"Residues from Agricultural Products and Processing" means solids, semi-solids or liquid residues from food and beverage processing and handling; silviculture; agriculture; and aquaculture operations that are non-toxic, non-hazardous, and contain no domestic wastewater.

"Respondent" means the person against whom an administrative penalty has been assessed.

"Runoff" means the portion of precipitation that drains from an area as surface flow.

"Sediment" means solid particulate matter both mineral and organic, that has been or is being transported by water, air, gravity, or ice from its site of origin.

"Sharps" means and includes needles, syringes, and scalpel blades.

"Siltation" means sediment resulting from accelerated erosion which is settleable or removable by properly designed, constructed, and maintained control measures and which has been transported from its point of origin within the site land-disturbing activity and which has been deposited, or is in suspension in water.

"Silviculture Waste" means waste materials produced from the care and cultivation of forest trees, including bark and woodchips.

"Soil Scientist" means an individual who is a North Carolina Licensed Soil Scientist, a Certified Professional Soil Scientist or Soil Specialist by American Registry of Certified Professional in Agronomy, Crops, and Soils (ARCPACS) or an individual that demonstrates equivalent experience or education.

"Solid waste collector" means any person who collects or transports solid waste by whatever means, including but not limited to, highway, rail, and navigable waterway.

"Solid waste generator" means any person who produces solid waste.

"Spoiled food" means any food which has been removed from sale by the United States Department of Agriculture, North Carolina Department of Agriculture, Food and Drug Administration, or any other regulatory agency having jurisdiction in determining that food is unfit for consumption.

"Steam sterilization" means treatment by steam at high temperatures for sufficient time to render infectious waste non-infectious.

"Transfer facility" means a permanent structure with mechanical equipment used for the collection or compaction of solid waste prior to the transportation of solid waste for final disposal.

"Treatment and processing facility" means a facility used in the treatment and processing of solid waste for final disposal or for utilization by reclaiming or recycling.

"Vector" means a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another.

"Water supply watershed" means an area from which water drains to a point or impoundment, and the water is then used as a source for a public water supply.

"Water table" means the upper limit of the portion of the ground wholly saturated with water.

"Windrow" means an elongated compost pile (typically eight feet wide by ten feet high).

"Working face" means that portion of the land disposal site where solid wastes are discharged, spread, and compacted prior to the placement of cover material.

"Yard trash" means solid waste resulting from landscaping and yard maintenance such as brush, grass, tree limbs, and similar vegetative material.

"Yard Waste" means "Yard Trash" and "Land-clearing Debris" as defined in G.S. 130A-290, including stumps, limbs, leaves, grass, and untreated wood.

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. August 1, 2008; October 1, 1995; January 4, 1993; December 1, 1991; February 1, 1991.

15A NCAC 13B .0102 APPLICABILITY
These solid waste management rules are for general application throughout the State of North Carolina unless otherwise specifically indicated by their context. Rules found in Section .0700 of this Subchapter apply to the Division's program for solid waste management and also to the Division's program for hazardous waste management. All other rules of this Subchapter apply to the Division's program for solid waste management but not to the Division's program for hazardous waste management. Other hazardous waste management program rules are found in 15A NCAC 13A. The official policy and purpose of the State of North Carolina in regard to solid waste control is set forth in Article 9 of Chapter 130A of the North Carolina General Statutes.

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. February 1, 1991; October 1, 1984.

15A NCAC 13B .0103 GENERAL CONDITIONS
(a) All solid waste shall be stored, collected, transported, separated, processed, recycled, recovered, and disposed of in a manner consistent with the requirements of these Rules. The Division of Solid Waste Management is responsible for the enforcement of these Rules.
(b) No radioactive waste material shall be collected and transported, stored, treated, processed, disposed of or reclaimed, except as specifically authorized by a radioactive material license issued by the Division of Radiation Protection, DEHNR.
(c) Solid waste shall be disposed of at a solid waste disposal site in accordance with the Solid Waste Management Act and the Federal Act. Hazardous waste, lead acid batteries, liquid waste, including used oil, regulated medical waste, and any other wastes that may pose a threat to the environment or the public health, as determined by the Division, are prohibited from disposal at a solid waste disposal site.

(d) The Division has developed a "Procedure and Criteria for Waste Determination" which is used to determine whether a waste is:

1. hazardous as defined by 15A NCAC 13A, and
2. suitable for disposal at a solid waste management facility. Information required for evaluation includes the identity of the generator, identity of the waste and how it was generated, and laboratory results indicating the chemical constituency of the waste. Copies of "Procedure and Criteria for Waste Determination" may be obtained from and inspected at the Division, P.O. Box 27687, Raleigh, N.C. 27611-7687. The waste determination procedure shall be used for:

   A. Waste which is generated outside the population and geographic area which the solid waste management facility is permitted to serve under .0504(1)(g).
   B. Waste from a transfer facility other than a facility permitted under these Rules.
   C. Waste generated by a new generator inside the population and geographic area which the Solid Waste Management Facility is permitted to serve if the components of the waste cannot be readily determined otherwise.
   D. Waste generated through a change in industrial process by an existing generator, provided the components of the waste cannot be readily determined otherwise.
   E. A load of waste which a sanitary landfill operator suspects may contain materials which the facility is not permitted to receive.
   F. Requests by a generator interested in transporting waste to an identified solid waste management facility for treatment and processing, transfer or disposal.
   G. All sludges except sludge from water treatment plants.
   H. Other wastes deemed appropriate by the Division for testing before transporting to a solid waste management facility.

(e) No person shall dispose or cause the disposal of solid waste in or on waters in a manner that results in solid waste's entering waters or being deposited upon lands of the state.


(g) By July 1, 1991, all solid waste management facilities owned and operated by or on behalf of a local government, except facilities which will receive no waste after July 1, 1992, shall install scales and weigh all solid waste when it is received at the facility.

(h) By July 1, 1991, each local government operating a permitted solid waste management facility shall initiate a solid waste recycling program which shall be designed to achieve the goal of recycling at least 25 percent of the municipal solid waste stream by January 1, 1993, prior to final disposal or incineration at a solid waste disposal facility.

(i) After January 1, 1998, all active sanitary landfills (except land clearing and inert debris landfills) shall be equipped with liners, leachate collection systems and final cover systems as required in Sections .0500 and .1600 of this Subchapter.

History Note: Filed as a Temporary Amendment Eff. October 28, 1988, for a Period of 180 Days to Expire on April 26, 1989; Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. October 1, 1995; January 4, 1993; February 1, 1991; September 1, 1990.

15A NCAC 13B .0104 SOLID WASTE STORAGE

(a) The owner or occupant of any property, except that exempted as specified in Rule .0103(c) of this Subchapter shall be responsible for the sanitary storage of all solid waste accumulated on the property.

(b) Garbage shall be stored in either durable rust resistant, non-absorbent, water-tight, rodent proof, and easily cleanable containers with a close fitting fly-tight cover, when applicable, or other types of containers acceptable to the local governing agency and conforming to the intent of this Section.

(c) Refuse shall be stored in durable containers or as otherwise provided in this Section. Where garbage is stored in combination with refuse, containers shall meet the requirements for garbage containers.
(d) Hazardous waste shall be stored as prescribed in the applicable state or federal rules.
(e) All containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or insanitary conditions. Containers that are broken or otherwise fail to meet this Rule shall be replaced with acceptable containers. Refuse too large or otherwise not suitable for storage in containers shall be stored in a nuisance free manner consistent with requirements with the unit of local government.
(f) All solid waste shall be stored in such a manner as to prevent the creation of a nuisance, insanitary conditions, or a potential public health hazard.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. February 1, 1988.

15A NCAC 13B .0105 COLLECTION AND TRANSPORTATION OF SOLID WASTE
(a) The solid waste collector shall be responsible for the collection and transportation of all solid waste to a solid waste management facility as defined in G.S. 130A-290 that is permitted by the Division.
(b) The solid waste collector shall transport to a site or facility only those solid wastes that are allowed by facility permit.
(c) Vehicles or containers used for the collection of solid waste, and transportation by whatever means, including highway, rail, and navigable waterway, shall be constructed, operated, and maintained to be leak resistant in order to prevent the creation of a nuisance to public health from the escape of solid, semi-solid, or liquid waste. In order to meet the requirement to be leak resistant, the owner and/or operator of the vehicle or container shall adhere to the following standards:
   (1) All surfaces that come in contact with waste shall be smooth and non-absorbent.
   (2) All drain holes and valves shall be closed, plugged, or sealed.
   (3) The vehicle or container shall be equipped with seals, gaskets, or other devices pursuant to manufacturer specifications in order to prevent the escape of liquids. Such seals, gaskets, and other devices shall be maintained and replaced pursuant to manufacturer specifications.
   (4) The vehicle or container body, waste holding area, and hopper, if so equipped, shall be free of holes, cracks, rusting, corrosion, or other evidence of damage or weakness that may allow the escape of solid, semi-solid, or liquid waste.
   (5) The waste holding area, including the hopper and around the packer blade, if so equipped, shall be clean of debris to prevent vectors or the accumulation of litter.
   (6) The vehicle or container shall be loaded, transported, operated, and maintained to prevent the escape of solid, semi-solid, or liquid waste to the environment.
   (7) The vehicle or container shall be serviced, repaired, and cleaned to maintain sanitary conditions, to preserve the integrity of the door seal, to prevent the accumulation of mechanical fluids, dirt, and filth on the vehicle's exterior, and to prevent contamination of the environment by fluids.

History Note: Authority G.S. 130A-294(b); S.L. 2013-413; Eff. April 1, 1982; Amended Eff. March 16, 2017; February 1, 1988.

15A NCAC 13B .0106 GENERATOR OF SOLID WASTE
(a) A solid waste generator shall be responsible for the satisfactory storage, collection and disposal of solid waste.
(b) The solid waste generator shall ensure that his waste is disposed of at a site or facility which is permitted to receive the waste.


15A NCAC 13B .0107 TREATMENT OF INFECTIOUS WASTES PRIOR TO DISPOSAL

History Note: Filed as a Temporary Amendment Eff. November 1, 1987, For a Period of 180 Days to Expire on April 28, 1988; Statutory Authority G.S. 130A-294;
SECTION .0200 - PERMITS FOR SOLID WASTE MANAGEMENT FACILITIES

15A NCAC 13B .0201 PERMIT REQUIRED

(a) No person shall treat, process, store, or dispose of solid waste or arrange for the treatment, processing, storage, or disposal of solid waste except at a solid waste management facility permitted by the Division for such activity, except as provided in G.S. 130A-294(b).

(b) No person shall cause, suffer, allow, or permit the treatment, storage, or processing of solid waste upon any real or personal property owned, operated, leased, or in any way controlled by that person without first having been issued a permit for a solid waste management facility from the Division authorizing such activity, except as provided in G.S. 130A-294(b).

(c) No solid waste management facility shall be established, operated, maintained, constructed, expanded, or modified without a currently valid permit issued by the Division for the specified type of disposal activity. It is the responsibility of every owner and operator of a proposed solid waste management facility to apply for a permit for the facility. The term "owner" shall include record owners of the land where the facility is located or proposed to be located and holders of any leasehold interest, however denominated, in any part of the land or structures where the facility is located or proposed to be located.

(d) The solid waste management facility permit, except for land clearing and inert debris permits, shall have two parts, as follows:

1. A permit approval to construct a solid waste management facility or portion of a facility shall be issued by the Division after site and construction plans have been approved by the Division and it has been determined that the facility can be operated in accordance with Article 9 of Chapter 130A and the applicable rules set forth in this Subchapter, and other applicable state, federal, and local laws. An applicant shall not clear or grade land or commence construction for a solid waste management facility or a portion thereof until a permit approval to construct has been issued.

2. A permit approval to operate a solid waste management facility shall not be issued unless it has been determined that the facility has been constructed in accordance with the construction plans, that any pre-operation conditions of the permit to construct have been met, and that the permit has been recorded, if applicable, in accordance with Rule .0204 of this Section.

(e) Land clearing and inert debris facilities may be issued a combined permit that includes approval to construct and operate the facility.

(f) Land clearing and inert debris facilities subject to Rule .0563(1) of this Subchapter may construct and operate after notification as provided for under Rule .0563(2) of this Subchapter.

(g) All solid waste management facilities shall be operated in conformity with these Rules and shall not create a nuisance, or an unsanitary condition, or a potential public health hazard.

History Note: Authority G.S. 130A-294; S.L. 2015-286, s.4.9; Eff. April 1, 1982; Amended Eff. January 4, 1993; February 1, 1991; March 1, 1988; Temporary Amendment Eff. May 19, 1993 to expire on October 9, 1993 or until the permanent rule becomes effective, whichever is sooner; Temporary Amendment Expired Eff. October 9, 1993; Amended Eff. September 1, 2016; August 1, 2008.
(a) Application for permits required by Rule .0201 of this Section shall be forwarded to the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, Solid Waste Section, Post Office Box 27687, Raleigh, North Carolina 27611. Permit applications shall contain the following information:

1. Site and construction plans;
2. An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned;
3. Detailed plans and specifications for solid waste management facilities shall be prepared by a professional engineer except for land clearing and inert debris landfills subject to Rule .0563(1) of this Subchapter. The plans shall bear an imprint of the registration seal of the engineer and geological studies shall bear the seal of a licensed professional geologist, in accordance with N.C.G.S. Chapter 89E; and
4. Any other information pertinent to the proposed facility.

(b) Specific information for a permit application is found in Sections .0300, .0400 and .0500 of this Subchapter.

History Note: 
Authority G.S. 130A-294;
Eff. April 1, 1982;

15A NCAC 13B .0203 PERMIT APPROVAL OR DENIAL

(a) Upon receipt of a permit application, the Division shall review the request to assure that all provisions of these Rules, the Solid Waste Management Act, and the Federal Act, will be met. Based on its review, the Division shall either approve or deny the request in writing.

(b) When an application is approved, the applicant shall be provided a permit. If the approval is contingent upon certain conditions being met by the applicant, such conditions shall be noted on the permit.

(c) Before receiving solid waste at a newly permitted facility, an inspection shall be made by a representative of the Division to assure that the site is prepared in accordance with the permit, and the permit shall be recorded with the Register of Deeds in the county where the facility is located in accordance with the recordation requirements set out in 15A NCAC 13B .0204.

(d) By receiving solid waste at a permitted facility, the permittee(s) shall be considered to have accepted the conditions of the permit and shall comply with the conditions of the permit.

(e) When the Division denies a permit for a solid waste management facility, it shall state in writing the reason for such denial and shall also state its estimate of the changes in the applicant's proposed activities or plans which will be required in order that the applicant may obtain a permit. A denial shall be without prejudice to the submission of a future application for a permit after revisions are made to meet objections specified as reasons for denial. Reasons for denial include:

1. Submission of incomplete information;
2. Failure to meet applicable requirements of this Subchapter; or
3. Failure to meet any applicable requirement or standard set forth in Article 9 of Chapter 130A of the N.C. General Statutes; or
4. Any other reasons which would prevent the solid waste facility or site from being operated in accordance with Article 9, Chapter 130A of the General Statutes, these Rules, the Federal Act, or acceptable engineering or public health and environmental standards.

(f) Appeals of permit decisions shall be in accordance with Article 3 of N.C.G.S., Chapter 150B, and the Rules adopted thereunder.

History Note: 
Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. August 1, 2008; February 1, 1991; August 1, 1988; February 1, 1988.

15A NCAC 13B .0204 RECORDATION OF LAND DISPOSAL PERMITS

(a) Whenever the Division approves a permit for a sanitary landfill or a facility for the disposal of hazardous waste on land, the owner of the facility shall be granted both an original permit and a copy certified by the secretary or his authorized representative. The permit shall include a legal description of the site that would be sufficient as a description in an instrument of conveyance.
(b) The owner of a facility granted a permit for a sanitary landfill or a facility for the disposal of hazardous waste on land shall file the certified copy of the permit in the register of deeds' office in the county or counties in which the land is located.

(c) The register of deeds shall record the certified copy and index it in the grantor index under the name of the owner of the land.

(d) The permit shall not be effective unless the certified copy is filed as required under Paragraph (b) of this Rule.

(e) When any sanitary landfill or a facility for the disposal of hazardous waste on land is sold, leased, conveyed or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a sanitary landfill or a disposal site for hazardous waste and a reference by book and page to the recordation of the permit.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982.

15A NCAC 13B .0205 VARIANCES

History Note: Authority G.S. 130A-294; Eff. April 1, 1982; Repealed Eff. July 1, 1990 in accordance with G.S. 150B-59(c).

15A NCAC 13B .0206 OPTION TO APPLY FOR ISSUANCE OF 10-YEAR PERMIT FOR SANITARY LANDFILL OR TRANSFER STATION

History Note: Authority G.S. 130A-294; S.L. 2012-187, s.15.1; S.L. 2015-286, s. 4.9; Eff. July 1, 2013; Repealed Eff. September 1, 2016.

15A NCAC 13B .0207 LIFE-OF-SITE PERMIT ISSUED FOR A SANITARY LANDFILL OR TRANSFER STATION

(a) A new or existing sanitary landfill or transfer station permit shall be subject to Section .0400, .0500, or .1600 of this Subchapter and shall be for the life-of-site as defined in G.S. 130A-294(a2).

(b) A life-of-site permit application for a new sanitary landfill shall contain design, construction, site development, and operation plans. Site development plans shall show the phases or progression of operation in periods of no less than five years and no greater than the life of the site as contained in the facility plan. The life-of-site of a sanitary landfill shall be specified in the facility plan prepared in accordance with Section .0500 or .1600 of this Subchapter.

(c) A sanitary landfill that has an existing permit as of July 1, 2016 shall be approved for a life-of-site permit within 90 days of submittal of the following updated permit information:

1. a specification of the life-of-site quantified in the site development or facility plan;
2. landfill capacity in years, projected for the life of the site;
3. average monthly disposal rates and estimated variances; and
4. a copy of the local government franchise agreement or approving resolution for the life of the site.

(d) Each phase within a life-of-site permit for sanitary landfills shall be designed and constructed in accordance with Sections .0500 or .1600 of this Subchapter. Site development plans shall show the phases or progression of construction and operation in periods of no less than five years and no greater than the life of the site as contained in the site development or facility plan.

(e) A life-of-site permit application for a new transfer station shall conform to the requirements of Section .0400 of this Subchapter and shall contain a site plan for the life of the site. A specification of the life-of-site of a transfer station shall be quantified in the site plan prepared in accordance with Section .0400 of this Subchapter.

(f) A transfer facility that has an existing permit as of July 1, 2016 shall be approved for a life-of-site permit upon submittal of a written request that shall include a specification of the quantified life-of-site.

History Note: Authority G.S. 130A-294; S.L. 2015-286, s. 4.9; Eff. March 16, 2017.

SECTION .0300 - TREATMENT AND PROCESSING FACILITIES
15A NCAC 13B .0301 APPLICATION REQUIREMENTS

This Rule contains the information required for a permit application for each treatment and processing facility. A minimum of three sets of the following information shall be required in each application:

1. Site and operation plans;
2. An approval letter from the unit of local government having zoning authority over the area where the facility is to be located, stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned; and
3. Any other information pertinent to the proposed facility.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. February 1, 1991.

15A NCAC 13B .0302 OPERATIONAL REQUIREMENTS

Any person who maintains or operates a treatment and processing facility shall maintain and operate the facility in accordance with the following practices unless otherwise specified in the permit:

1. Operational plans shall be approved and followed as specified for the facility;
2. A facility shall only accept wastes which it is permitted to receive;
3. Water that comes in contact with solid waste will be contained on-site or properly treated prior to discharge from the site. A NPDES permit may be required prior to discharge to surface waters;
4. Equipment for fire control shall be available;
5. Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin;
6. Equipment shall be provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain the facility in a sanitary condition; and
7. Appropriate methods shall be provided to confine material subject to be blown by the wind within the area. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982.

SECTION .0400 - TRANSFER FACILITIES

Rules .0401 - .0402 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0401 - .0402); have been transferred and recodified from Rules .0401 - .0402 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0401 - .0402), effective April 4, 1990.

15A NCAC 13B .0401 APPLICATION REQUIREMENTS

This Rule contains the information required for a permit application for each transfer facility. A minimum of three sets of the following information shall be required in each application:

1. Site and operation plans;
2. An approval letter from the unit of local government having zoning authority over the area where the facility is to be located, stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned; and
3. Any other information pertinent to the proposed facility.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. February 1, 1991.
15A NCAC 13B .0402  OPERATIONAL REQUIREMENTS
Any person who maintains or operates a transfer facility shall maintain and operate the facility in conformance with the following practices unless otherwise specified in the permit.

(1) Operational plans shall be approved and followed as specified for the facility;
(2) A facility shall only accept those wastes which it is permitted to receive;
(3) Water that comes into contact with solid waste will be contained on-site or properly treated prior to discharge from the site. An NPDES permit may be required prior to discharge to surface waters;
(4) Equipment for fire control shall be available;
(5) Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin;
(6) Equipment shall be provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain the facility in a sanitary condition; and
(7) Appropriate method shall be provided to confine material subject to be blown by the wind within the area. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.

History Note:  Authority G.S. 130A-294;
Eff. April 1, 1982.

SECTION .0500 - DISPOSAL SITES

Rules .0501 - .0510 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0501 - .0510) have been transferred and recodified from Rules .0501 - .0510 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0501 - .0510), effective April 4, 1990.

15A NCAC 13B .0501  APPROVED DISPOSAL METHODS
(a) The disposal of solid waste shall be by the following approved methods or any combination thereof:

(1) Sanitary landfill;
(2) Land clearing and inert debris landfill;
(3) Incineration; or
(4) Disposal by other sanitary methods which may be developed and demonstrated to be capable of fulfilling the basic requirements of these Rules and which have been approved by the Division.

(b) The requirements of this Section shall not apply to municipal solid waste landfill units, which are defined under and subject to the requirements of Section .1600 of this Subchapter.

History Note:  Authority G.S. 130A-294;
Eff. April 1, 1982;

15A NCAC 13B .0502  OPEN DUMPS
Any owner or operator of an open dump, as defined by G.S. 130A-290(20), for disposal of solid waste or any person(s) who owns, leases or otherwise controls land on which such an open dump is or has been operating shall immediately close the site in accordance with the following requirements:

(1) Implement effective vector control, including baiting for at least two weeks after closing, to prevent vector migration to adjacent properties;
(2) If the site is deemed suitable by the Division, compact and cover existing solid waste in place with one foot or more of suitable compacted earth. Closing the site by this method is conditioned upon the further requirement that the waste disposal location and development and conveyance restrictions prohibiting the disturbance of the solid waste disposal site be recorded by the property owner with the Register of Deeds in the county where the site is located. The Division shall provide the property owner with the development and conveyance restrictions to be recorded for that site. Copies of the recordation procedure may be obtained from and inspected at the Division;
(3) If the site is deemed unsuitable by the Division, remove and place solid waste in an approved disposal site or facility;
(4) Implement erosion control measures by grading and seeding; and
(5) Prevent unauthorized entry to the site by means of gates, chains, berms, fences, and other security measures approved by the Division and post signs indicating closure for a period designated by the Division not to exceed one year.

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. August 1, 2008; January 4, 1993; December 1, 1990; August 1, 1988; February 1, 1988.

15A NCAC 13B .0503 SITING AND DESIGN REQUIREMENTS FOR DISPOSAL SITES
Disposal sites shall comply with the following requirements in order for a permit to be issued:

(1) A site shall meet the following siting requirements:

(a) A site located in a floodplain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain or result in washout of solid waste so as to pose a hazard to human life, wildlife or land or water resources.

(b) A site shall be located in consideration of the following:

(i) a site shall not cause or contribute to the taking of any endangered or threatened species of plants, fish or wildlife;

(ii) a site shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 C.F.R. Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This information is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost;

(iii) a site shall not damage or destroy an archaeological or historical site; and

(iv) a site shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.

(c) A new site disposing of putrescible wastes shall not be located within 10,000 feet of an airport runway used by turbojet aircraft or within 5,000 feet of an airport runway used by piston-type aircraft; and

(d) A site shall have available adequate suitable soils for cover either on-site or from off-site.

(2) A site shall meet the following design requirements:

(a) The concentration of explosive gases generated by the site shall not exceed:

(i) twenty-five percent of the limit for the gases in site structures (excluding gas control or recovery system components); and

(ii) the lower explosive limit for the gases at the property boundary;

(b) A site shall not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site;

(c) A site shall meet the following surface water requirements:

(i) A site shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended, or that is in violation of standards promulgated under G.S. 143-214.1 and G.S. 143-215;

(ii) A site shall not cause a discharge of dredged material or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended, or that is in violation of any state requirements regulating the discharge of dredged or fill material into waters of the state, including wetlands; and

(iii) A site shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.

(d) A site shall meet the following ground water requirements:
A site, except for land clearing and inert debris landfills subject to Rule .0564(8)(e) of this Section, shall be designed so that the bottom elevation of solid waste will be a minimum of four feet above the seasonal high water table;

Operators of new industrial solid waste landfills, lateral expansions of existing industrial solid waste landfills, and industrial solid waste landfills receiving solid waste on or after January 1, 1998 shall submit to the Division a design which satisfies one of the following criteria:

(A) a design that will ensure that the ground water standards established under 15A NCAC 2L will not be exceeded in the uppermost aquifer at the compliance boundary established by the Division in accordance with 15A NCAC 2L. The design shall be based upon modeling methods acceptable to the Division, which shall include, at a minimum, the following factors:
   (I) the hydrogeologic characteristics of the facility and surrounding lands;
   (II) the climatic factors of the area; and
   (III) the volume and physical and chemical characteristics of the leachate; or

(B) a design with a leachate collection system, a closure cap system, and a composite liner system consisting of two components: the upper component shall consist of a minimum 30-mil flexible membrane (FML), and the lower components shall consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1 X 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.

(iii) The Division reserves the right to require an applicant to submit a liner design if the groundwater protection demonstration is Sub-item (ii) of this Paragraph is not satisfactory.

(iv) Industrial solid waste landfills shall comply with ground water standards established under 15A NCAC 2L at the compliance boundary.

(e) A site shall not engage in open burning of solid waste;

(f) A site, except a land clearing and inert debris landfill, shall meet the following buffer requirements:
   (i) A 50-foot minimum buffer between all property lines and disposal areas;
   (ii) A 500-foot minimum buffer between private dwellings and wells and disposal areas; and
   (iii) A 50-foot minimum buffer between streams and rivers and disposal areas; and

(g) Requirements of the Sedimentation Pollution Control Law (15A NCAC 4) shall be met.

**History Note:**  Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. October 1, 1995; January 4, 1993; February 1, 1991; September 1, 1990.

**15A NCAC 13B .0504 APPLICATION REQUIREMENTS FOR SANITARY LANDFILLS**

A permit for a sanitary landfill shall be based upon a particular stream of identified waste, as set forth in Rule .0504(1)(g)(i) and (ii) of this Section. Any substantial change in the population or area to be served, or in the type, quantity or source of waste shall require a new permit and operation plan, including waste determination procedures where appropriate.

(1) The following information shall be required for reviewing a site application for a proposed sanitary landfill:
   (a) An aerial photograph on a scale of at least 1 inch equals 400 feet showing the area within one-fourth mile of the proposed site's boundaries with the following specifically identified:
      (i) Entire property owned or leased by the person proposing the disposal site;
      (ii) Land use and zoning:
Location of all homes, industrial buildings, public or private utilities, and roads;
Location of wells, watercourses, dry runs, and other applicable details regarding the general topography; and
Flood plains.

(b) A map on a scale of at least 1 inch equals 1000 feet showing the area within two miles of the proposed site's boundaries with the following specifically identified:
(i) Known ground water users;
(ii) Potential or existing sources of ground water and surface water pollution;
(iii) Water intakes;
(iv) Airport and runways; and
(v) Subdivisions.

(c) A geological and hydrological study of the site which provides:
(i) Soil borings for which the numbers and depths have been confirmed by the Division and lab testing of selected soil samples that provide:
   (A) standard penetration resistance;
   (B) particle size analysis;
   (C) soil classification Unified Soil Classification System;
   (D) geologic considerations (slopes, solution features, etc.);
   (E) undisturbed representative geologic samples of the unconfined or confined or semiconfined hydrological units within a depth of 50 feet that provide the following information for each major lithologic units:
      (I) saturated hydraulic conductivity (or by in situ);
      (II) volume percent water; and
      (III) porosity;
   (F) remolded sample of cover soils that provide:
      (I) saturated hydraulic conductivity,
      (II) total porosity,
      (III) atterberg limits;
   (G) stratigraphic cross sections identifying hydrogeological units including lithology;
   (H) tabulation of water table elevations at time of boring, 24 hours, and seven days (The number of cased borings to provide this information shall be confirmed by the Division.); and
   (I) boring logs;
(ii) A boundary plat locating soil borings with accurate horizontal and vertical control which are tied to a permanent onsite bench mark;
(iii) A potentiometric map of the surficial aquifer based on stabilized water table elevations; and
(iv) A report summarizing the geological and hydrological evaluation.

(d) A conceptual design plan presenting special engineering features or considerations which must be included or maintained in site construction, operation, maintenance and closure.

(e) Local government approvals:
(i) If the site is located within an incorporated city or town, or within the extra-territorial jurisdiction of an incorporated city or town, the approval of the governing board of the city or town shall be required. Otherwise, the approval of the Board of Commissioners of the county in which the site is located shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution, or the minutes of the meeting where the vote was taken, shall be forwarded to the Division.
(ii) A letter from the unit of government having zoning jurisdiction over the site which states that the proposal meets all of the requirements of the local zoning ordinance, or that the site is not zoned.

(f) A discussion of compliance with siting standards in Rule .0503(1) of this Subchapter.

(g) A report indicating the following:
(i) population and area to be served;
(ii) type, quantity and source of waste;
(iii) the equipment that will be used for operating the site;
(iv) a proposed groundwater monitoring plan including well location and schematics showing proposed screened interval, depth and construction; and
(v) a more detailed geologic report may be required depending on specifics of the site. This report may be based on physical evidence, initially, or due to information obtained from the site plan application.

(h) Any other information pertinent to the suitability of the proposed site.

(2) The following information shall be required for reviewing a construction plan application for a proposed sanitary landfill:
(a) A map showing existing features to include:
   (i) existing topography of the site on a scale of at least 1 inch equals 200 feet with five foot contours;
   (ii) bench marks;
   (iii) springs;
   (iv) streams;
   (v) potential ground water monitoring sites;
   (vi) pertinent geological features; and
   (vii) soil boring locations.
(b) A grading plan that provides:
   (i) proposed excavated contours;
   (ii) soil boring locations;
   (iii) locations and elevations of dikes or trenches;
   (iv) designated buffer zones;
   (v) diversion and controlled removal of surface water from the work areas; and
   (vi) proposed utilities and structures.
(c) A construction plan that provides:
   (i) engineering design for liners, leachate collections systems;
   (ii) proposed final contours showing removal of surface water runoff; and
   (iii) locations of slope drains or other drop structures.
(d) An erosion control plan that identifies the following:
   (i) locations of temporary erosion control measures (sediment basins, stone filters, terraces, silt fences, etc.);
   (ii) locations of permanent erosion control measures (rip rap, energy dissipators, ditch stabilization, pipe drain, etc.); and
   (iii) seeding specifications and schedules.
(e) Engineering diagrams showing typical sections of:
   (i) dikes,
   (ii) trenches,
   (iii) diversions, and
   (iv) sediment basins.
(f) A minimum of two cross sections per operational area showing:
   (i) original elevations,
   (ii) proposed excavated depths,
   (iii) proposed final elevations,
   (iv) ground water elevation, and
   (v) soil borings.
(g) Site development showing phases or progression of operation in five-year or ten-year phases of construction and operation.
(h) A written report that contains the following:
   (i) A copy of the deed or other legal description of the landfill site that would be sufficient as a description in an instrument of conveyance and property owner's name;
   (ii) Name of individual responsible for operation and maintenance of the site;
   (iii) Projected use of land after completion of the sanitary landfill;
Anticipated lifetime of the project;
Description of systematic usage of area, operation, orderly development and completion of the sanitary landfill;
Earthwork calculations;
Seeding specifications and schedules;
Calculations for temporary and permanent erosion control measures;
Any narrative necessary to describe compliance with the Sedimentation Pollution Control Act of 1973 (15A NCAC 4);
A discussion of compliance with design requirements in Rule .0503(2) of this Section.

History Note: Authority G.S. 130A 294;
Eff. April 1, 1982;
Amended Eff. January 1, 1985;
Temporary Amendment Eff. October 1, 1987, For a Period of 180 Days to expire on March 29, 1988;

15A NCAC 13B .0505 OPERATIONAL REQUIREMENTS FOR SANITARY LANDFILLS
Any person who maintains or operates a sanitary landfill site shall maintain and operate the site in conformance with the following practices, unless otherwise specified in the permit:

1. **Plan and Permit Requirements**
   (a) Construction plans shall be approved and followed.
   (b) Specified monitoring and reporting requirements shall be met.

2. **Spreading and Compacting Requirements**
   (a) Solid waste shall be restricted into the smallest area feasible.
   (b) Solid waste shall be compacted as densely as practical into cells.

3. **Cover Requirements**
   (a) Solid waste shall be covered after each day of operation, with a compacted layer of at least six inches of suitable cover or as specified by the Division.
   (b) Areas which will not have additional wastes placed on them for 12 months or more, but where final termination of disposal operations has not occurred, shall be covered with a minimum of one foot of intermediate cover.
   (c) After final termination of disposal operations at the site or a major part thereof, or upon revocation of a permit, the area shall be covered with at least two feet of suitable compacted earth.

4. **Erosion Control Requirements**
   (a) Adequate erosion control measures shall be practiced to prevent silt from leaving the site.
   (b) Adequate erosion control measures shall be practiced to prevent excessive on-site erosion.

5. **Drainage Control Requirements**
   (a) Surface water shall be diverted from the operational area.
   (b) Surface water shall not be impounded over or in waste.
   (c) Completed areas shall be adequately sloped to allow surface water runoff in a controlled manner.

6. **Vegetation Requirements**
   (a) Within six months after final termination of disposal operations at the site or a major part thereof or upon revocation of a permit, the area shall be stabilized with native grasses.
   (b) Temporary seeding will be utilized as necessary to stabilize the site.

7. **Water Protection Requirements**
   (a) The separation distance of four feet between waste and water table shall be maintained unless otherwise specified by the Division in the permit.
   (b) Solid waste shall not be disposed of in water.
   (c) Leachate shall be contained on site or properly treated prior to discharge. An NPDES permit may be required prior to the discharge of leachate to surface waters.

8. **Access and Security Requirements**
(a) The site shall be adequately secured by means of gates, chains, berms, fences, and other security measures approved by the Division, to prevent unauthorized entry.

(b) An attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.

(c) The access road to the site shall be of all-weather construction and maintained in good condition.

(d) Dust control measures shall be implemented where necessary.

(9) Sign Requirements

(a) Signs providing information on dumping procedures, the hours during which the site is open for public use, the permit number and other pertinent information shall be posted at the site entrance.

(b) Signs shall be posted stating that no hazardous or liquid waste can be received without written permission from the Division.

(c) Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

(10) Safety Requirements

(a) Open burning of solid waste is prohibited.

(b) Equipment shall be provided to control accidental fires or arrangements shall be made with the local fire protection agency to immediately provide fire-fighting services when needed.

(c) Fires that occur at a sanitary landfill shall be reported to the Division within 24 hours and a written notification shall be submitted within 15 days.

(d) The removal of solid waste from a sanitary landfill is prohibited unless the owner/operator approves and the removal is not performed on the working face.

(e) Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein.

(11) Waste Acceptance and Disposal Requirements

(a) A site shall only accept those solid wastes which it is permitted to receive. The landfill operator shall notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve.

(b) No hazardous or liquid waste shall be accepted or disposed of in a sanitary landfill.

(c) Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site shall be covered immediately.

(d) Asbestos waste that is packaged in accordance with 40 CFR 61, which is adopted by reference in accordance with G.S. 150B-14(c), may be disposed of separate and apart from other solid wastes at the bottom of the working face or in an area not contiguous with other disposal areas, in either case, in virgin soil. Separate areas shall be clearly marked so that asbestos is not exposed by future land-disturbing activities. The waste shall be covered immediately with soil in a manner that will not cause airborne conditions. Copies of 40 CFR 61 may be obtained and inspected at the Division.

(e) Wastewater treatment sludges may only be used as a soil conditioner and incorporated into the final two feet of cover. Sludges shall be examined for acceptance by Waste Determination procedures in Rule .0103(e) of this Subchapter.

(12) Miscellaneous Requirements

(a) Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin when necessary.

(b) Appropriate methods such as fencing and diking shall be provided within the area to confine solid waste subject to be blown by the wind. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.

History Note: Filed as a Temporary Amendment Eff. November 1, 1987, For a Period of 180 Days to Expire on April 28, 1988; Authority G.S. 130A-294; Eff. April 1, 1982;
15A NCAC 13B .0506 APPLICATION REQUIREMENTS FOR DEMOLITION LANDFILLS
15A NCAC 13B .0507 OPERATIONAL REQUIREMENTS FOR DEMOLITION LANDFILLS

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. February 1, 1991; September 1, 1990;

15A NCAC 13B .0508 APPLICATION REQUIREMENTS FOR INCINERATORS
Five sets of plans shall be required for each application.

(1) Site and operation plans of the proposed incinerator;
(2) A copy of the air quality permit application to the Division of Environmental Management, Department of Environment, Health and Natural Resources;
(3) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned; and
(4) The type, quantity and source of waste for disposal.

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. February 1, 1991; September 1, 1990.

15A NCAC 13B .0509 OPERATIONAL REQUIREMENTS FOR INCINERATORS
Any person who maintains or operates an incinerator shall maintain and operate the site in conformance with the following practices, unless otherwise specified in the permit:

(1) All incinerators shall be designed and operated in a manner so as to prevent the creation of a nuisance or potential health hazard;
(2) The incinerator plant shall be so situated, equipped, operated, and maintained as to minimize interference with other activities in the area;
(3) All solid waste to be disposed of at the site shall be confined to the dumping area. Adequate storage facilities shall be provided;
(4) Effective vector control measures shall be applied to control flies, rodents, and other insects or vermin;
(5) Equipment shall be provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain the plant in a sanitary condition;
(6) All residue from the incinerator plant shall be promptly disposed of at an approved sanitary landfill site;
(7) An air quality permit issued by the Division of Environmental Management, Department of Environment, Health, and Natural Resources, shall be obtained prior to operation;
(8) A site shall only accept those solid wastes which it is permitted to receive; and
(9) Water that comes into contact with solid waste will be contained on-site or properly treated prior to discharge. A NPDES permit may be required prior to discharge to surface waters.

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;
Amended Eff. September 1, 1990.

15A NCAC 13B .0510 CLOSURE CONDITIONS
(a) When the disposal site has been closed in accordance with Rule .0505 of this Subchapter, the operator shall:

(1) Notify the Division in writing in order that a site inspection may be made by the Division to determine compliance with closure procedures; and
(2) Provide test holes, as specified by the Division, to determine compliance for final cover.

(b) An inspection shall be made by a representative of the Division and a written statement will be supplied to the operator concerning the closure of the site.

(c) When a solid waste disposal site has been closed in accordance with the requirements of the Division, future necessary maintenance and water quality monitoring shall be the responsibility of the owner and the operator and shall be specified in the closure letter.

(d) When a solid waste disposal site has been closed in accordance with the requirements of the Division, the permit is terminated. Any future disposal at the site shall require a new permit.

History Note: Authority G.S. 130A-294;
Eff. April 1, 1982;

15A NCAC 13B .0511 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0512 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0513 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0514 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0515 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0516 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0517 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0518 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0519 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0520 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0521 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0522 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0523 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0524 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0525 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0526 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0527 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0528 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0529 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0530 RESERVED FOR FUTURE CODIFICATION

15A NCAC 13B .0531 PURPOSE, SCOPE, AND APPLICABILITY FOR CONSTRUCTION AND DEMOLITION LANDFILLS

(a) Purpose. The purpose of Rules .0531 through .0547 of this Section is to regulate the siting, design, construction, operation, closure and post-closure of all construction and demolition solid waste landfill (C&DLF) facilities and units.

(b) Scope. Rules .0531 through .0547 of this Section describe the performance standards, application requirements, and permitting procedures for all C&DLF facilities and units. Rules .0531 through .0547 of this Section are intended to:

1. establish the State standards for C&DLF facilities and units to provide for effective disposal practices and protect the public health and environment; and
2. coordinate other State Rules applicable to landfills.

(c) Applicability. Owners and operators of C&DLF facilities and units must conform to the requirements of Rules .0531 through .0547 of this Section as follows:

1. C&DLF units permitted to operate prior to January 1, 2007, and which do not receive solid waste after June 30, 2008, must comply with the Conditions of the Solid Waste Permit and Rule .0510 of this Section.

2. C&DLF units permitted to operate prior to January 1, 2007, and which continue to receive waste after June 30, 2008, must comply with Rule .0547 of this Section, at the time of closure of the unit(s).

3. C&DLF units permitted after December 31, 2006 must comply with the requirements of Rules .0531 through .0546 of this Section.

(d) Owners and operators of a C&DLF facility must comply with any other applicable Federal, State and Local laws, rules, regulations, or other requirements.
DEFINITIONS FOR C&DLF FACILITIES

This Rule contains definitions for terms that appear throughout the Rules pertaining to Construction and Demolition Landfills, Rules .0531 through .0547 of this Section; additional definitions appear in the specific Rules to which they apply.

(1) "100-year flood" means a flood that has a one-percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on average over a significantly long period.

(2) "Active life" means the period of operation beginning with the initial receipt of C&D solid waste and ending at completion of closure activities in accordance with Rule .0543 of this Section.

(3) "Active portion" means that part of a facility or unit(s) that has received or is receiving wastes and that has not been closed in accordance with Rule .0543 of this Section.

(4) "Aquifer" means a geological formation, group of formations, or portion of a formation capable of yielding ground water.

(5) "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 C&DLF unit(s), 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 fluctuation, block sliding, and rock fall.

(6) "Base liner system" means the liner system installed on the C&DLF unit's foundation to control the flow of leachate.

(7) "Cap system" means a liner system installed over the C&DLF unit(s) to minimize infiltration of precipitation and contain the wastes.

(8) "C&D solid waste" means solid waste generated solely from the construction, remodeling, repair, or demolition operations on pavement and buildings or structures. C&D waste does not include municipal and industrial wastes that may be generated by the on-going operations at buildings or structures.

(9) "Ground water" means water below the land surface in a zone of saturation.


(11) "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/ foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

(12) "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.

(13) "Landfill facility" means all contiguous land and structures, waste management unit(s), other appurtenances, and improvements on the land within the legal description of the site included in or proposed for the Solid Waste Permit. Existing facilities are those facilities which were permitted by the Division prior to December 31, 2006. Facilities permitted on or after January 1, 2007 are new facilities.

(14) "Landfill unit" means a discrete area of land or an excavation that receives a particular type of waste such as C&D, industrial, or municipal solid waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill unit
may be publicly or privately owned, may be located at a MSWLF, an industrial landfill facility, or other waste management facility.

(15) "Lateral expansion" means a horizontal expansion of the waste boundaries of an existing C&DLF unit(s).

(16) "Liner system" means an engineered environmental control system which can incorporate filters, drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures.

(17) "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S.W. 846.

(18) "Licensed Geologist" means an individual who is licensed to practice geology in accordance with G.S. 89E.

(19) "Open burning" means the combustion of any solid waste without:
   (a) control of combustion air to maintain adequate temperature for efficient combustion;
   (b) containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and
   (c) control of the emission of the combustion products.

(20) "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 C&DLF unit(s).

(21) "Professional Engineer" means an individual who is licensed to practice engineering in accordance with G.S. 89C.

(22) "Project engineer" means the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management unit conforms to the Division approved plan, the permit to construct and the rules specified in this Section. All certifications must bear the seal and signature of the professional engineer and the date of certification.

(23) "Registered Land Surveyor" means an individual who is licensed to practice surveying in accordance with G.S. 89C.

(24) "Run-off" means any rainwater that drains over land from any part of a facility or unit.

(25) "Run-on" means any rainwater that drains over land onto any part of a facility.

(26) "Structural components" means liners, leachate collection systems, final covers, run-on or run-off systems, and any other component used in the construction and operation of the C&DLF that is necessary for protection of human health and the environment.

(27) "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.

(28) "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.

(29) "Washout" means the carrying away of solid waste by waters of the base flood.


15A NCAC 13B .0533 GENERAL APPLICATION REQUIREMENTS AND PROCESSING FOR C&DLF FACILITIES

(a) Applicability. Owners or operators of a proposed or existing C&DLF unit or facility shall submit an application document as detailed in Rule .0535 of this Section in accordance with the criteria and scheduling requirements set forth as follows:

(1) New facility. Owners or operators proposing to establish a C&DLF facility or unit in accordance with the following criteria shall submit a Site Study and subsequently an application for a permit to construct as set forth in Paragraph (a) of Rule .0535 of this Section. A new facility permit application is required when:
(A) The owner or operator proposes to establish a new facility not previously permitted by the Division.
(B) The owner or operator proposes to expand the landfill facility in order to expand the C&DLF unit(s) boundary approved in accordance with Subparagraph (a)(1) of Rule .0536 of this Section.

(2) Amendment to the permit. For any subsequent phase of landfill development the owner or operator shall prepare an application to amend the permit to construct in accordance with Paragraph (b) of Rule .0535 of this Section and submit the application at the earlier of the following dates:
(A) at least 180 days prior to the date scheduled for commencing construction; or
(B) five years from the issuance date of the initial permit to operate or as specified in the effective permit.

(3) Substantial amendment to the permit. A permit issued in accordance with Paragraph (c) of this Rule approves a facility plan for the life of the C&DLF facility and a set of plans for the initial phase of landfill development. The owner or operator shall prepare an application in accordance with Paragraph (c) of Rule .0535 of this Section and submit the application when there is:
(A) a substantial change in accordance with N.C.G.S. 130A-294 (b1)(1); or
(B) a proposed transfer of ownership of the C&DLF facility.

(4) Modifications to the permit. An owner or operator proposing changes to the plans approved in the permit shall request prior approval from the Division in accordance with Paragraph (d) of Rule .0535 of this Section.

(b) Application format guidelines. All applications and plans required by Rules .0531 through .0547 of this Section shall be prepared in accordance with the following guidelines:

(1) The initial application shall:
(A) contain a cover sheet stating the project title and location, the applicant's name and address, and the engineer's name, address, signature, date of signature and seal; and
(B) contain a statement defining the purpose of the submittal signed and dated by the applicant.

(2) The text of the application shall:
(A) be submitted in a three ring binder;
(B) contain a table of contents or index outlining the body of the application and the appendices;
(C) be paginated consecutively; and
(D) identify revised text by noting the date of revision on the page.

(3) Drawings. The engineering drawings for all landfill facilities shall be submitted using the following format.
(A) The sheet size with title blocks shall be at least 22 inches by 34 inches.
(B) The cover sheet shall include the project title, applicant's name, sheet index, legend of symbols, and the engineer's name, address, signature, date of signature, and seal.
(C) Where the requirements do not explicitly specify a minimum scale, maps and drawings shall be prepared at a scale that adequately illustrates the subject requirement(s).

(4) Number of copies. An applicant shall submit a minimum of three copies of each original application document and any revisions to the Division. The Division shall request additional copies as necessary. The Division shall require submittal of relevant documents in electronic format.

(c) Permitting and Public Information Procedures.

(1) Purpose and Applicability.
(A) Purpose. During the permitting process the Division shall provide for public review of and input to permit documents containing the applicable design and operating conditions. The Division shall provide for consideration of comments received and notification to the public of the permit design.
(B) Applicability. Applications for a Permit to Construct for a new facility, for a substantial amendment to the permit for an existing facility, or for a modification to the permit involving corrective remedy selection required by Paragraphs (d) through (h) of Rule .0545 of this Section shall be subject to the requirements of Subparagraphs (c)(2) through (c)(9) of this Rule. Applications submitted in accordance with Subparagraphs (a)(2) and (a)(4) of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.
Once an application is complete, the Division shall decide whether the permit should be issued or denied.

If the Division decides to deny the permit, the Division shall send a notice to deny to the applicant. Reasons for permit denial shall be in accordance with Rule .0203(e) of this Subchapter.

If the Division decides the permit should be issued, the Division shall prepare a draft permit. A draft permit shall contain (either expressly or by reference) all applicable terms and conditions for the permit.

All draft permits shall be subject to the procedures of Subparagraphs (3) through (9) of this Paragraph, unless otherwise specified in those Subparagraphs.

Fact Sheet.

The Division shall prepare a fact sheet for every draft permit. The fact sheet shall include a brief description of the type of facility or activity which is the subject of the draft permit. It shall also include a description of the area to be served and of the volume and characteristics of the waste stream, and a projection of the useful life of the landfill. The fact sheet shall contain a brief summary of the basis for the draft permit conditions, including references to applicable statutory or regulatory provisions and appropriate supporting references to the permit application. The fact sheet shall describe the procedures for reaching a decision on the draft permit. It shall include the beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph, the address where comments will be received, the procedures for requesting a public hearing and any other procedures by which the public may participate in the decision. The fact sheet shall contain the name and telephone number of a person to contact for additional information.

The Division shall send this fact sheet to the applicant and make it available to the public for review or copying at the central office of the Division of Waste Management – Solid Waste Section. The Division shall post the fact sheet on the Division web site.

Public Notice of Permit Actions and Public Hearings.

The Division shall give public notice of each of the following: a draft permit has been prepared; a public hearing has been scheduled under Subparagraph (6) of this Paragraph; or a notice of intent to deny a permit has been prepared under Part (2)(B) of this Paragraph. No public notice is required when a request for a permit modification is denied.

The Division shall give written notice of denial to the applicant.

Public notices may describe more than one permit or permit action.

Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall allow at least 45 days for public comment.

The Division shall give public notice of a public hearing at least 15 days before the hearing. Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.

Public notice of activities described in Part (A) of this Subparagraph shall be given by publication on the Division website, by publication in a daily or weekly local newspaper of general circulation, and by any other method deemed necessary or appropriate by the Division to give actual notice of the activities to persons potentially affected.

General Public Notices. All public notices issued under this Part shall at minimum contain the following: (1) name, address and phone number of the office processing the permit action for which notice is being given; (2) name and address of the owner and operator applying for the permit; (3) a brief description of the business conducted at the facility or activity described in the permit application including the size and location of the facility and type of waste accepted; (4) a brief description of the comment procedures required by Subparagraphs (5) and (6) of this Paragraph, including a statement of procedures to request a public hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the permit decision; (5) name, address, and telephone number of a Division staff from whom interested persons may obtain further information; (6) a description of the time frame and procedure for making an approval or disapproval decision of the application; and (7) any additional information considered necessary or proper as required by the Division.
Public Notices for Public Hearing. In addition to the general public notice described in Part (4)(A) of this Paragraph, the public notice of a public hearing shall contain the date, time, and place of the public hearing; a brief description of the nature and purpose of the public hearing, including the applicable rules and procedures; and a concise statement of the issues raised by the persons requesting the hearing.

Public Comments and Requests for Public Hearings. During the public comment period any interested person may submit written comments on the draft permit and may request a public hearing if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Division shall consider all comments in making a final permit decision. The Division shall respond to all comments as provided in Subparagraph (9) of this Paragraph.

Public Hearings.

(A) The Division shall hold a public hearing on a draft permit(s) when a hearing is requested. The Division may also hold a public hearing at its discretion whenever such a hearing might clarify one or more issues involved in the permit decision. Public hearings held pursuant to this Rule shall be at a location convenient to the nearest population center to the subject facility. Public notice of the hearing shall be given as specified in Subparagraph (4) of this Paragraph.

(B) Any person may submit oral or written statements and data concerning the draft permit. The public comment period under Subparagraph (4) of this Paragraph is extended to the close of any public hearing conducted under this Subparagraph. The hearing officer may also extend the public comment period by so stating at the hearing, when information is presented at the hearing which indicates the importance of extending the period to receive additional comments, to allow potential commentors to gather more information, to allow time for submission of written versions of oral comments made at the hearing, or to allow time for rebuttals of comments made during the hearing.

(C) The Division shall make available to the public a recording or written transcript of the hearing for review or copying at the central office of the Division of Waste Management - Solid Waste Section.

Reopening of the Public Comment Period.

(A) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit action, the Division may prepare a new draft permit, appropriately modified, under Subparagraph (2) of this Paragraph; prepare a fact sheet or revised fact sheet under Subparagraph (3) of this Paragraph and reopen the comment period under Subparagraph (4) of this Paragraph; or reopen or extend the comment period under Subparagraph (4) of this Paragraph to give interested persons an opportunity to comment on the information or arguments submitted.

(B) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under Subparagraph (4) of this Paragraph shall define the scope of the reopening.

(C) Public notice of any of the actions of this Subparagraph shall be issued in accordance with Subparagraph (4) of this Paragraph.

Permit Decision.

(A) After the close of the public comment period under Subparagraph (4) of this Paragraph on a draft permit or a notice of intent to deny a permit, the Division shall issue a permit decision. The Division shall notify the applicant and each person who has submitted a written request for notice of the permit decision. For the purposes of this Subparagraph, a permit decision means a decision to issue, deny or modify a permit.

(B) A permit decision shall become effective upon the date of the service of notice of the decision unless a later date is specified in the decision.

Response to Comments.

(A) At the time that a permit decision is issued under Subparagraph (8) of this Paragraph, the Division shall issue a written response to comments. This response shall specify which provisions, if any, of the draft permit have been changed in the permit decision, and the reasons for the change. The response shall also briefly describe and respond to all significant
comments on the draft permit raised during the public comment period, or during any public hearing.

(B) The Division shall make the response to comments available to the public for review or copying at the central office of the Division of Waste Management – Solid Waste Section.

(d) Permit approval or denial. The Division shall review all permit applications in accordance with Rule .0203 of Section .0200 - PERMITS FOR SOLID WASTE MANAGEMENT FACILITIES.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0534 GENERAL REQUIREMENTS FOR C&DLF FACILITIES AND UNITS
(a) Applicability. Permits issued by the Division for C&DLF facilities and units shall be subject to the general requirements set forth in this Rule.
(b) Terms of the Permit. The Solid Waste Management Permit shall incorporate requirements necessary to comply with this Subchapter and the North Carolina Solid Waste Management Act including the provisions of this Paragraph.

(1) Division Approved Plan. Permits issued after December 31, 2006 must incorporate a Division approved plan.
   (A) The scope of the Division approved plan must include the information necessary to comply with the requirements set forth in Rule .0535 of this Section.
   (B) The Division approved plans must be subject to and may be limited by the conditions of the permit.
   (C) The Division approved plans for a new facility must be described in the permit and must include the Facility Plan, Rule .0537 of this Section, Engineering Plan, Rule .0539 of this Section, Construction Quality Assurance plan, Rule .0541 of this Section, Operation Plan, Rule .0542 of this Section, Closure and Post-Closure plan, Rule .0543 of this Section, and Monitoring Plans, Rule .0544 of this Section.

(2) Permit provisions. All C&DLF facilities and units must conform to the specific conditions set forth in the permit and the following general provisions.
   (A) Duty to Comply. The permittee must comply with all conditions of the permit, unless otherwise authorized by the Division. Any permit noncompliance, except as otherwise authorized by the Division, constitutes a violation of the Act and is grounds for enforcement action or for permit revocation, modification or suspension.
   (B) Duty to Mitigate. In the event of noncompliance with the permit, the permittee must take all reasonable steps to minimize releases to the environment, and must carry out such measures as are reasonable to prevent adverse impacts on human health or the environment.
   (C) Duty to Provide Information. The permittee must furnish to the Division any relevant information that the Division may request to determine whether cause exists for modifying, revoking or suspending the permit, or to determine compliance with the permit. The permittee must also furnish to the Division, upon request, copies of records required to be kept under the conditions of the permit.
   (D) Recordation Procedures. The permittee must comply with the requirements of Rule .0204 of this Subchapter RECORDATION OF LAND DISPOSAL PERMITS in order for a new permit to be effective.
   (E) Need to Halt or Reduce Activity. It shall not be a defense for a permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
   (F) Permit Actions. The permit may be modified, reissued, revoked, suspended or terminated in accordance with G.S. 130A-23. The filing of a request by the permittee for a permit modification, or a notification of planned changes or anticipated noncompliance, does not stay any existing permit condition.
   (G) Not Transferable. The permit is not transferable.
   (H) Construction. If construction is not commenced within 18 months from the issuance date of the permit to construct, or an amendment or substantial amendment to the permit, then the permit shall expire. The applicant may re-apply for the permit, which shall be subject to statutes and rules in effect on the date of the re-application.
Proper Operation and Maintenance. The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

Inspection and Entry. The permittee must allow the Division or an authorized representative to enter the permittee's premises where a regulated unit(s) or activity is located or conducted, or where records are kept under the conditions of the permit. The Division or its authorized representative shall have access in order to copy any records required to be kept under the conditions of the permit. The permittee must allow the Division or its authorized representative to inspect any facilities, equipment (including monitoring and control equipment), practices or operations regulated by the Division. For the purposes of assuring permit compliance or as otherwise authorized by the Act, the permittee must allow the Division or its authorized representative to sample or monitor, at any location under the operation or control of the permittee, the following: any materials, substances, parameters, soil, groundwater, surface water, gases or ambient air. The permittee must allow the Division or its authorized representative to take photographs for the purpose of documenting items of compliance or noncompliance at permitted facilities, or where appropriate to protect legitimate proprietary interests, require the permittee to take such photographs for the Division.

Waste Exclusions. Waste to be excluded from disposal in a C&DLF is listed in Rule .0542 of this Section. Permit conditions may include additional exclusions as they become necessary in order to protect the public health and the environment or to ensure proper landfill operation.

Additional Solid Waste Management Activities. Construction and operation of additional solid waste management activities at the landfill facility must not impede operation or monitoring of the C&DLF unit(s). Any proposed additional activities must be submitted to the Division for review, approval, and permitting, as applicable, before construction and operation.


15A NCAC 13B .0535 APPLICATION REQUIREMENTS FOR C&DLF FACILITIES
(a) Permit for a new facility. In accordance with Rule .0201 of this Section the permit for a new C&DLF facility shall have two parts:

(1) Permit to Construct. The owner and operator of a new facility must meet the requirements of Rule .0536 of this Section prior to submitting an application for a permit to construct. A complete application for a permit to construct must contain the following:
   (A) a facility plan that describes the comprehensive development of the C&DLF facility prepared in accordance with Rule .0537 of this Section;
   (B) an engineering plan for the initial phase of landfill development prepared in accordance with Rule .0539 of this Section;
   (C) a construction quality assurance plan prepared in accordance with Rule .0541 of this Section;
   (D) an operation plan prepared in accordance with Rule .0542 of this Section;
   (E) a closure and post-closure plan prepared in accordance with Rule .0543 of this Section; and
   (F) monitoring plans prepared in accordance with Paragraph (a) of Rule .0544 of this Section.

(2) Permit to Operate. The owner and operator must meet the pre-operative requirements of the permit to construct in order to qualify the constructed C&DLF unit for a permit to operate. Construction documentation must be submitted in a timely and organized manner in order to facilitate the Division's review.

(b) Amendment to the permit. A complete application for an amendment to the permit must contain:
an updated engineering plan prepared in accordance with Rule .0539 of this Section;
(2) an updated construction quality assurance plan prepared in accordance with Rule .0541 of this Section;
(3) an updated operation plan prepared in accordance with Rule .0542 of this Section;
(4) an updated closure and post-closure plan prepared in accordance with Rule .0543 of this Section; and
(5) an updated monitoring plan prepared in accordance with Rule .0544 of this Section.

(c) Substantial amendment to the permit. A complete application for a substantial amendment to the permit must contain:

(1) a facility plan that describes the comprehensive development of the C&DLF facility prepared in accordance with Rule .0537 of this Section; and
(2) local government approval in accordance with Subparagraph (c)(11) of Rule .0536 of this Section.

(d) Modifications to the permit. The owner or operator may propose to modify plans that were prepared and approved in accordance with the requirements set forth in this Section. A complete application must identify the requirement(s) proposed for modification and provide sufficient information in order to demonstrate compliance with the applicable requirements of this Section.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0536 SITE STUDY FOR C&DLF FACILITIES
(a) Purpose. As required under Rule .0535 of this Section, the owner or operator must prepare a site study which meets the requirements of this Rule. The Division shall review the site study for a proposed new facility prior to consideration of an application for a permit to construct. Following review of the site study, the Division shall notify the applicant that either:

(1) the site is deemed suitable and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .0535 of this Section; or
(2) the site is deemed unsuitable for establishing a C&DLF unit(s) and shall specify the reasons that would prevent the C&DLF unit(s) from being operated in accordance with G.S. 130A Article 9, or this Subchapter, and any applicable federal laws and regulations.

(b) Scope. The site is the land which is proposed for the landfill facility. The site study presents a characterization of the land, incorporating various investigations and requirements pertinent to suitability of a C&DLF facility. The scope of the site study includes criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site is not within the scope of this study. The information in the site study must accurately represent site characteristics and must be prepared by qualified environmental professionals as set forth in Subparagraph (a)(3) of Rule .0202 of this Subchapter. New C&DLF unit(s) and lateral expansions must comply with the siting criteria set forth in Paragraph (c) of this Rule, Subparagraphs (4) through (10). In order to demonstrate compliance with specific criteria for each of the respective location restrictions, documentation or approval by agencies other than the Division of Waste Management, Solid Waste Section may be required. The scope of demonstrations including design and construction performance must be addressed in the site study.

(c) The site study prepared for a C&DLF facility must include the information required by this Paragraph.

1. Characterization study. The site characterization study area includes the landfill facility and a 2000-foot perimeter measured from the proposed boundary of the landfill facility. The study must include an aerial photograph taken within one year of the original submittal date, a report, and a local map. The map and photograph must be at a scale of at least one inch equals 400 feet. The study must identify the following:

(A) the entire property proposed for the disposal site and any on-site easements;
(B) existing land use and zoning;
(C) the location of residential structures and schools;
(D) the location of commercial and industrial buildings, and other potential sources of contamination;
(E) the location of potable wells and public water supplies;
(F) historic sites;
(G) state nature and historic preserves;
(H) the existing topography and features of the disposal site including: general surface water drainage patterns and watersheds, 100-year floodplains, perennial and intermittent streams, rivers, and lakes; and
(I) the classification of the surface water drainage from landfill site in accordance with 15A NCAC 02B .0300.

(2) Proposed Facility Plan. A conceptual plan for the development of the facility including drawings and a report must be prepared which includes the drawings and reports described in Subparagraphs (d)(1), (e)(1), (e)(2), and (e)(3) of Rule .0537 of this Section.

(3) Site Hydrogeologic Report. The study must be prepared in accordance with the requirements set forth in Paragraph (a) of Rule .0538 of this Section.

(4) Floodplain Location Restrictions:
   (A) C&DLF units or constructed embankments used to construct a C&DLF unit must not be located in a 100-year floodplain unless a variance for the facility has been issued in accordance with G.S. 143-215.54A.
   (B) C&DLF units must not be located in floodplains unless the owners or operators demonstrate that the unit will not restrict the flow of the flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

(5) Wetlands Location Restriction. New C&DLF units and lateral expansions must not be located in wetlands, unless the owner or operator can make the following demonstrations to the Division:
   (A) Where applicable under Section 404 of the Clean Water Act or applicable State wetlands laws, the presumption that a practicable alternative to the proposed landfill facility is available which does not involve wetlands is clearly rebutted.
   (B) The construction and operation of the C&DLF unit(s) will not cause or contribute to violations of any applicable State water quality standards and will not violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act.
   (C) The construction and operation of the C&DLF unit(s) will not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973. The construction and operation of the C&DLF unit(s) will not violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.
   (D) The construction and operation of the C&DLF unit(s) will not cause or contribute to significant degradation of wetlands.
   (E) The owner or operator must demonstrate the integrity of the C&DLF unit(s) and its ability to protect ecological resources by addressing the following factors: (1) erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the C&DLF unit; (2) erosion, stability, and migration potential of dredged and fill materials used to support the C&DLF unit; the volume and chemical nature of the waste managed in the C&DLF unit; (3) impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste; (4) the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and (5) any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected to the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws.
   (F) The owner or operator must demonstrate that steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by Part (c)(5)(A) – (D) of this Rule, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).
   (G) The owner or operator must also demonstrate that sufficient information is available to make a reasonable determination with respect to each of the demonstrations required by this Rule.
   (H) For purposes of this Rule, wetlands means those areas that are defined in 40 CFR 232.2(r).

(6) Unstable Area Location Restrictions. Owners and operators of new C&DLF unit(s) and lateral expansions proposed for location in an unstable area must demonstrate that engineering measures have been incorporated in the C&DLF unit's design to ensure that the integrity of any structural components
of the C&DLF unit will not be disrupted. The owner and operator must consider the following factors, at a minimum, when determining whether an area is unstable:

(A) On-site or local soil conditions that may result in significant differential settling;
(B) On-site or local geologic or geomorphologic features; and
(C) On-site or local human-made features or events (both surface and subsurface).

(7) Cultural Resources Location Restrictions. A new C&DLF unit or lateral expansion must not damage or destroy a property of archaeological or historical significance which has been listed or determined eligible for a listing in the National Register of Historic Places. To aid in making a determination as to whether the property is of archaeological or historical significance, the State's Historic Preservation Office in the Department of Cultural Resources may request the owner and operator to perform a site-specific survey which must be included in the Site Study.

(8) State Nature and Historic Preserve Location Restrictions. A new C&DLF unit or lateral expansion must not have an adverse impact, considering the purposes for designation of the Preserve lands and the location, access, size and operation of the landfill, on any lands included in the State Nature and Historic Preserve.

(9) Water Supply Watersheds Location Restrictions;
(A) A new C&DLF unit or lateral expansion must not be located in the critical area of a water supply watershed, or in the watershed for a stream segment classified as WS-I, or in watersheds of other water bodies which indicate that no new landfills are allowed in accordance with the rules codified at 15A NCAC 02B Section .0200 entitled "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."
(B) Any new C&DLF unit or lateral expansion, which proposes to discharge leachate to surface waters and must obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Division of Environmental Management pursuant to Section 402 of the United States Clean Water Act, must not be located within watersheds classified as WS-II or WS-III, or in watersheds of other water bodies which indicate that no new discharging landfills are allowed, in accordance with the rules codified at 15A NCAC 02B Section .0200.

(10) Endangered and Threatened Species Location Restrictions. A new C&DLF unit or lateral expansion must not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973.

(11) Local government approvals for C&DLFs.
(A) If the permit applicant is a unit of local government in which jurisdiction the proposed C&DLF site is located, the approval of the governing board shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution or the minutes of the meeting where the vote was taken must be submitted to the Division as part of the site study.
(B) A permit applicant other than the unit of local government with jurisdiction over the proposed landfill site must obtain a franchise in accordance with G.S 130A-294(b1)(3) from each unit of local government in whose jurisdiction the site is located. A copy of the franchise must be submitted to the Division as part of the site study.
(C) Prior to issuance of approval or a franchise, the jurisdictional local government(s) where the landfill is to be located shall hold at least one public meeting to inform the community of the proposed waste management activities as described in the proposed facility plan prepared in accordance with Subparagraph (2) of this Paragraph. The local government where the landfill is to be located shall provide a public notice of the meeting at least 30 days prior to the meeting. For purposes of this Part, public notice must include a legal advertisement placed in a newspaper or newspapers serving the county and provision of a news release to at least one newspaper serving the county. Public notice must include time, place, and purpose of the meetings required by this Part. The application for a franchise or other documentation as required by the appropriate local government(s), must be placed at a location that is accessible by the public. This location must be noted in the public notice. The permit applicant must notify the property owners of all property that shares a common border with the proposed facility by means of a U.S. Postal Service registered letter, return receipt requested. The notice must give the date, time and place of the public meeting, and must
describe the facility plan for the landfill, including the areal location and final elevation of all waste disposal units, the type and amount of waste to be disposed at the landfill, any other waste management activities to be conducted at the facility, and the proposed location of the entrance to the facility. Mailings must be postmarked a minimum of 30 days prior to the public meeting which is being noticed. The applicant must provide documentation of the content and mailing of the notices in the site study.

(D) Public notice of the meeting must be documented in the site study. A tape recording or a written transcript of the meeting, all written material submitted representing community concerns, and all other relevant written material distributed or used at the meeting must be submitted as part of the site study.

(E) A letter from the unit of local government(s) having zoning jurisdiction over the site which states that the proposal meets all the requirements of the local zoning ordinance, or that the site is not zoned, must be submitted to the Division as part of the site study.

(d) Site suitability applications for a new C&DLF facility or unit submitted in accordance with Rule .0504(1) of this Section must be submitted to the Division prior to December 31, 2006.


15A NCAC 13B .0537 FACILITY PLAN FOR C&DLFS

(a) Purpose. As required under Rule .0535 of this Section, a permit applicant shall prepare a facility plan which meets the requirements of this Rule.

(b) Scope.

(1) The facility plan must define the comprehensive development of the property proposed for a permit or described in the permit of an existing facility. The plan must include a set of drawings and a report which present the long-term, general design concepts related to construction, operation, and closure of the C&DLF unit(s). The scope of the plan must span the active life of the unit(s). Additional solid waste management activities located at the C&DLF facility must be identified in the plan and must meet the requirements of this Subchapter. The facility plan must define the waste stream proposed for management at the C&DLF facility. If different types of landfill units or non-disposal activities are included in the facility design, the plan must describe general waste acceptance procedures.

(2) The areal limits of the C&DLF unit(s), total capacity of the C&DLF unit(s), and the proposed waste stream must be consistent with the Division's approval set forth in accordance with Rule .0536 (a)(1) of this Section for a new facility.

(c) Use of Terms. The terminology used in describing areas of the C&DLF unit(s) shall be defined as follows and must be used consistently throughout a permit application.

(1) A "phase" is an area constructed that provides no more than approximately five years of operating capacity.

(2) A "cell" is a subdivision of a phase, which describes modular or partial construction.

(3) A "subcell" is a subdivision of a cell, which describes leachate and stormwater management, if required, for active or inactive areas of the constructed C&DLF.

(d) Facility Drawings. The facility plan must include the following drawings:

(1) Site Development. The drawings which plot site development must be prepared on topographic maps representative of existing site conditions; the maps must locate or delineate the following:

(A) Delineate the areal limits of all landfill units, and incorporate the buffer requirements set forth in Item (1) of Rule .0540 of this Section;

(B) Locate all solid waste management facilities and facility infrastructure, including landfill units;

(C) Delineate the areal limits of grading, including borrow and stockpile areas;

(D) Define phases of development, which do not exceed approximately five years of operating capacity;

(E) Delineate proposed final contours for the C&DLF unit(s) and facility features for closure; and

(F) Delineate physical features including floodplains, wetlands, unstable areas, and cultural resource areas as defined in Rule .0536 of this Section.
Landfill Operation. The following information related to the long-term operation of the C&DLF unit must be included in facility drawings:

(A) proposed transitional contours for each phase of development including operational grades for existing phase(s) and construction grading for the new phase; and

(B) stormwater segregation features and details for inactive landfill subcells, if included in the design or required.

Survey. A survey locating all property boundaries for the proposed landfill facility certified by an individual licensed to practice land surveying in the State of North Carolina.

Facility Report. The facility plan must include the following information:

(1) Waste stream. A discussion of the characteristics of the wastes received at the facility and facility specific management plans must incorporate:

(A) the types of waste specified for disposal;

(B) average yearly disposal rates in tons and a representative daily rate that is consistent with the local government approval in accordance with Rule .0536 of this Section;

(C) the area served by the facility;

(D) procedures for segregated management at different on-site facilities; and

(E) equipment requirements for operation of the C&DLF unit(s).

(2) Landfill Capacity. An analysis of landfill capacity and soil resources must be performed.

(A) The data and assumptions used in the analysis must be included with the facility drawings and disposal rates specified in the facility plan and representative of operational requirements and conditions.

(B) The conclusions must provide estimates of gross capacity of the C&DLF unit; gross capacity for each phase of development of the C&DLF unit; the estimated operating life of all C&DLF units in years; and required quantities of soil for landfill construction, operation, and closure; and available soil resources from on-site. Gross capacity is defined as the volume of the landfill calculated from the elevation of the initial waste placement through the top of the final cover, including any periodic cover.

(3) Special engineering features.

(A) Leachate management systems, if proposed by the applicant. The performance of and design concepts for the leachate collection system within active areas of the C&DLF unit(s) and any storm water segregation included in the engineering design must be described. Normal operating conditions must be defined. A contingency plan must be prepared for storm surges or other considerations exceeding design parameters for the storage or treatment facilities.

(B) Containment and environmental control systems. A general description of the systems designed for proper landfill operation, system components, and corresponding functions must be provided.

(C) Base liner systems, if proposed by the applicant must be described.

(D) Other device, components, and structures, if proposed by the applicant, must be described.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0538 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATIONS FOR C&DLF FACILITIES

(a) Site Hydrogeologic Report. A permit applicant must conduct a hydrogeologic investigation and prepare a report. An investigation is required to assess the geologic and hydrogeologic characteristics of the proposed site to determine the suitability of the site for solid waste management activities, which areas of the site are most suitable for C&DLF units, and the general ground-water flow paths and rates for the uppermost aquifer. The report must provide an understanding of the relationship of the site ground-water flow regime to local and regional hydrogeologic features with special emphasis on the relationship of C&DLF units to ground-water receptors (especially drinking water wells) and to ground-water discharge features. Additionally, the scope of the investigation must include the general geologic information necessary to address compliance with the pertinent location restrictions described in Rule .0536 of this Section. The Site Hydrogeologic Report must provide, at a minimum, the following information:

(1) A report on local and regional geology and hydrogeology based on research of available literature for the area. This information is to be used in planning the field investigation. For sites located in
piedmont or mountain regions, this report must include an evaluation of structurally controlled features identified on a topographic map of the area.

(2) A report on field observations of the site that includes information on the following:
(A) topographic setting, springs, streams, drainage features, existing or abandoned wells, rock outcrops, (including trends in strike and dip), and other features that may affect site suitability or the ability to effectively monitor the site; and
(B) ground-water discharge features. For a proposed site where the owner or operator does not control the property from any landfill unit boundary to the controlling, downgradient, ground-water discharge feature(s), additional borings, geophysics or other hydrogeological investigations may be required to characterize the nature and extent of groundwater flow; and
(C) the hydrogeological properties of the bedrock, if the uppermost ground-water flow is predominantly in the bedrock. Bedrock for the purpose of this rule is defined as material below auger refusal.

(3) Borings for which the numbers, locations, and depths are sufficient to provide an adequate understanding of the subsurface conditions and ground-water flow regime of the uppermost aquifer at the site. The number and depths of borings required will depend on the hydrogeologic characteristics of the site. At a minimum, there must be an average of one boring for each 10 acres of the proposed landfill facility unless otherwise authorized by the Division. All borings intersecting the water table must be converted to piezometers or monitoring wells in accordance with 15A NCAC 02C .0108.

(4) A testing program for the borings which describes the frequency, distribution, and type of samples taken and the methods of analysis (ASTM Standards or test methods approved by the Division) used to obtain, at a minimum, the following information:
(A) standard penetration - resistance (ASTM D 1586);
(B) particle size analysis (ASTM D 422);
(C) soil classification: Unified Soil Classification System (USCS) (ASTM D 2487);
(D) formation descriptions; and
(E) saturated hydraulic conductivity, porosity, effective porosity, and dispersive characteristics for each lithologic unit of the uppermost aquifer including the vadose zone.

(5) In addition to borings, other techniques may be used to investigate the subsurface conditions at the site, including but not limited to: geophysical well logs, surface geophysical surveys, and tracer studies.

(6) Stratigraphic cross-sections identifying hydrogeologic and lithologic units, and stabilized water table elevations.

(7) Water table information, including:
(A) tabulations of water table elevations measured at the time of boring, 24 hours, and stabilized readings for all borings (measured within a period of time short enough to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow direction and rate);
(B) tabulations of stabilized water table elevations over time in order to develop an understanding of seasonal fluctuations in the water table;
(C) an estimation of the long-term seasonal high water table based on stabilized water table readings, hydrographs of wells in the area, precipitation and other meteorological data, and streamflow measurements from the site frequent enough to demonstrate infiltration and runoff characteristics, and any other information available; and
(D) a discussion of any natural or man-made activities that have the potential for causing water table fluctuations, including but not limited to, tidal variations, river stage changes, flood pool changes of reservoirs, high volume production wells, and injection wells.

(8) The horizontal and vertical dimensions of ground-water flow including flow directions, rates, and gradients.

(9) Ground-water contour map(s) to show the occurrence and direction of ground-water flow in the uppermost aquifer and any other aquifers identified in the hydrogeologic investigation. The ground-water contours must be superimposed on a topographic map. The location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the ground-water contours must be shown on the ground-water contour map(s).
A topographic map of the site locating soil borings with accurate horizontal and vertical control, which are tied to a permanent onsite benchmark.

Information for wells and water intakes within the site characterization study area, in accordance with Rule .0536(c) of this Section including:

(A) boring logs, construction records, field logs and notes, for all onsite borings, piezometers and wells;

(B) construction records, number and location served by wells, and production rates, for public water wells; and

(C) available information for all surface water intakes, including use and production rate.

Identification of other geologic and hydrologic considerations including but not limited to: slopes, streams, springs, gullies, trenches, solution features, karst terranes, sinkholes, dikes, sills, faults, mines, ground-water discharge features, and ground-water recharge/discharge areas.

A report summarizing the geological and hydrogeological evaluation of the site that includes the following:

(A) a description of the relationship between the uppermost aquifer of the site to local and regional geologic and hydrogeologic features,

(B) a discussion of the ground-water flow regime of the site focusing on the relationship of C&DLF unit(s) to ground-water receptors and to ground-water discharge features,

(C) a discussion of the overall suitability of the proposed site for solid waste management activities and which areas of the site are most suitable for C&DLF units, and

(D) a discussion of the ground-water flow regime of the uppermost aquifer at the site and the ability to effectively monitor the C&DLF units in order to ensure early detection of any release of constituents to the uppermost aquifer.

(b) Design Hydrogeologic Report

(1) A geological and hydrogeologic report must be submitted in the application for the Permit to Construct. This report must contain the information required by Subparagraph (2) of this Paragraph. The number and depths of borings required must be based on the geologic and hydrogeologic characteristics of the landfill facility. At a minimum, there must be an average of one boring for each acre of the investigative area. The area of investigation must, at a minimum, be the area within the unit footprint and unit compliance boundary, unless otherwise authorized by the Division. The scope and purpose of the investigation is as follows:

(A) The investigation must provide adequate information to demonstrate compliance with the vertical separation and foundation standards set forth in Items (2) and (5) of Rule .0540 of this Section.

(B) The report must include an investigation of the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of C&DLF development and any leachate management unit(s). The purpose of this investigation is to provide more detailed and localized data on the hydrogeologic regime for this area in order to design an effective water quality monitoring system.

(2) The Design Hydrogeologic Report must provide, at a minimum, the following information:

(A) the information required in Subparagraphs (a)(4) through (a)(12) of this Rule;

(B) the technical information necessary to determine the design of the monitoring system as required by Paragraph (b) of Rule .0544 of this Section;

(C) the technical information necessary to determine the relevant point of compliance as required by Part (b)(1)(B) of Rule .0544 of this Section;

(D) rock cores (for sites located in the piedmont or mountain regions) for which the numbers, locations, and depths are adequate to provide an understanding of the fractured bedrock conditions and ground-water flow characteristics of at least the upper 10 feet of the bedrock. Testing for the corings must provide, at a minimum, rock types, recovery values, rock quality designation (RQD) values, saturated hydraulic conductivity and secondary porosity values, and rock descriptions, including fracturing and jointing patterns, etc.;

(E) a ground-water contour map based on the estimated long-term seasonal high water table that is superimposed on a topographic map and includes the location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the ground-water contours;
(F) a bedrock contour map (for sites located in piedmont or mountain regions) illustrating the contours of the upper surface of the bedrock that is superimposed on a topographic map and includes the location of all borings and rock cores and the top of rock elevations used to generate the upper surface of bedrock contours;

(G) a three dimensional ground-water flow net or several hydrogeologic cross-sections that characterize the vertical ground-water flow regime for this area;

(H) a report on the ground-water flow regime for the area including ground-water flow paths for both horizontal and vertical components of ground-water flow, horizontal and vertical gradients, flow rates, ground-water recharge areas and discharge areas;

(I) a report on the soils in the four feet immediately underlying the waste with relationship to properties of the soil. Soil testing cited in Subparagraph (a)(4) of this Rule must be used as a basis for this discussion; and

(J) a certification by a Licensed Geologist that all borings which intersect the water table at the site have been constructed and maintained as permanent monitoring wells in accordance with 15A NCAC 02C .0108, or that the borings will be properly abandoned in accordance with the procedures for permanent abandonment of wells as delineated in 15A NCAC 02C .0113. All piezometers within the footprint area must be overdrilled to the full depth of the boring, prior to cement or bentonite grout placement, and the level of the grout within the boring must not exceed in height the elevation of the proposed basegrade.

History Note:  Authority G.S. 130A-294;

15A NCAC 13B .0539 ENGINEERING PLAN FOR C&DLF FACILITIES
(a) Purpose. The engineering plan must incorporate the detailed plans and specifications relative to the design and performance of the C&DLF's containment and environmental control systems. This plan must set forth the design parameters and construction requirements for the components of the C&DLF's systems and must establish the responsibilities of the design engineer. The engineered components must be described in Rule .0540 of this Section. As required under Rule .0535 of this Section, the owner or operator must submit an engineering plan, which meets the requirements of this Rule.

(b) Responsibilities of the design engineer. The engineering plan must be prepared by a Professional Engineer licensed to practice engineering in accordance with G.S. 89C and must meet the requirements of this Rule. The design engineer must incorporate a statement certifying this fact and bearing his or her seal of registration.

(c) Scope. An engineering plan must be prepared for a phase of development not to exceed approximately five years of operating capacity consistent with the development phases and design criteria defined in the facility plan. The engineering plan shall contain a report and a set of drawings which consistently represent the engineering design.

(d) An engineering report must contain:
   (1) A summary of the facility design that includes:
      (A) a discussion of the analytical methods used to evaluate the design,
      (B) definition of the critical conditions evaluated and assumptions made,
      (C) a list of technical references used in the evaluation, and
      (D) completion of any applicable location restriction demonstrations in accordance with Rule .0536 of this Section.
   (2) A description of the materials and construction practices that conforms to the requirements set forth in Rule .0540 of this Section.
   (3) A copy of the Design Hydrogeologic Report prepared in accordance with Paragraph (b) of Rule .0538 of this Section.

(e) Engineering drawings must illustrate:
   (1) existing conditions: site topography, features, existing disposal areas, roads, and buildings;
   (2) grading plans: proposed limits of excavation, subgrade elevations, intermediate grading for partial construction;
   (3) stormwater segregation system, if required: location and detail of features;
   (4) cap system: base and top elevations, landfill gas devices, infiltration barrier, surface water removal, protective and vegetative cover, and details;
   (5) temporary and permanent sedimentation and erosion control plans;
vertical separation requirement estimates including:

(A) Cross-sections, showing borings, which indicate existing ground surface elevations, base grades, seasonal high ground-water level, estimated long-term seasonal high ground-water level in accordance with Part (b)(2)(E) of Rule .0538 of this Section, and bedrock level in accordance with Part (b)(2)(F) of Rule .0538 of this Section; and

(B) A map showing the existing ground surface elevation and base grades. The map must include labeled boring locations which indicate seasonal high ground-water level, estimated long-term high ground-water level in accordance with Part (b)(2)(E) of Rule .0538 of this Section, and bedrock level in accordance with Part (b)(2)(F) of Rule .0538 of this Section.

(f) The engineering plan must also describe and illustrate additional engineering features and details including, if proposed by the applicant, the cap system, leachate collection system and base liner system. Cap systems, leachate collection systems and base liner systems must be designed in accordance with NC Solid Waste Management Rules 15A NCAC 13B .1620 and .1621.

.0539 of this Section, which are incorporated into the permit to construct in accordance with Paragraph (b) of Rule .0534 of this Section as follows:
(a) The owner or operator of the C&DLF unit must have the subgrade inspected by a qualified geologist or engineer when excavation is completed.
(b) The owner or operator of the C&DLF unit must notify the Division's hydrogeologist at least 24 hours before subgrade inspection.
(c) Compliance with the requirements of Sub-Item (2)(b) of this Rule must be in accordance with Paragraph (b) of Rule .0538 of this Section or by placement of soil in accordance with this Sub-Item and verified in accordance with Rule .0541 of this Section.

(6) Special engineering structures. Engineering structures, including cap systems, incorporated in the design and necessary to comply with the requirements of this Section must be specified in the engineering plan. Material, construction, and certification requirements necessary to ensure that the structure is constructed in accordance with the design and acceptable engineering practices must be included in the plans prepared in accordance with Rule .0539 of this Section.

(7) Sedimentation and erosion control. Adequate structures and measures must be designed and maintained to manage the run-on and run-off generated by the 24-hour, 25-year storm event, and conform to the requirements of the Sedimentation Pollution Control Law (15A NCAC 04) and any required NPDES permits.

(8) Construction quality assurance (CQA) report. A CQA report must be submitted in accordance with Rule .0541 of this Section.


15A NCAC 13B .0541 CONSTRUCTION QUALITY ASSURANCE FOR C&DLF FACILITIES
(a) Purpose of the construction quality control and quality assurance (CQA) plan. The CQA plan must describe the observations and tests that will be used before, during, and upon completion of construction to ensure that the construction and materials meet the design specifications and the construction and certification requirements set forth in Rule .0540 of this Section. The CQA plan must also describe the procedures to ensure that the integrity of the landfill systems will be maintained prior to waste placement.
(b) For construction of each cell, the CQA plan must include at a minimum:

(1) Responsibilities and authorities. The plan must establish responsibilities and authorities for the construction management organization. A pre-construction meeting must be conducted prior to beginning construction of the initial cell, or as required by the permit. The meeting must include a discussion of the construction management organization, respective duties during construction, and periodic reporting requirements for test results and construction activities;
(2) Inspection activities. A description of all field observations, tests and equipment that will be used to ensure that the construction meets or exceeds all design criteria established in accordance with Rules .0539, .0540 and Rule .0543 Paragraph (d) of this Section;
(3) Sampling strategies. A description of all sampling protocols, sample size and frequency of sampling must be presented in the CQA plan;
(4) Documentation. A description of reporting requirements for CQA activities; and
(5) Progress and troubleshooting meetings. A plan for holding daily and monthly troubleshooting meetings. The proceedings of the meetings must be documented.
(c) Purpose of the CQA report. The CQA report must contain the results of all the construction quality assurance and construction quality control testing including documentation of any failed test results, descriptions of procedures used to correct the improperly installed material, and results of all retesting performed. The CQA report must contain as-built drawings noting any deviation from the approved engineering plans and must also contain a comprehensive narrative including, but not limited to, daily reports from the project engineer, a series of color photographs of major project features, and documentation of proceedings of all progress and troubleshooting meetings.
(d) For construction of each cell, the CQA report must be submitted:
(1) after completion of landfill construction in order to qualify the constructed C&DLF unit for a permit to operate;
(2) after completion of construction of the cap system in accordance with the requirements of Rule .0543 of this Section; and
in accordance with the reporting schedule developed in accordance with Paragraph (b) of this Rule.

The CQA report must bear the seal of the project engineer and a certification that construction was completed in accordance with:

(A) the CQA plan,
(B) the conditions of the permit to construct,
(C) the requirements of this Rule, and
(D) acceptable engineering practices.

(e) The Division must review the CQA report within 30 days of a complete submittal to ensure that the report meets the requirements of this Rule.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0542 OPERATION PLAN AND REQUIREMENTS FOR C&DLF FACILITIES

(a) The owner or operator of a C&DLF unit must maintain and operate the facility in accordance with the operation plan prepared in accordance with this Rule. The operation plan must be submitted in accordance with Rule .0535 of this Section. Each phase of operation must be defined by an area which contains approximately five years of disposal capacity.

(b) Operation Plan. The owner or operator of a C&DLF unit must prepare an operation plan for each phase of landfill development. The plan must include drawings and a report defining the information as identified in this Rule.

(1) Operation drawings. Drawings must be prepared for each phase of landfill development. The drawings must be consistent with the engineering plan and prepared in a format which is usable for the landfill operator. The operation drawings must illustrate the following:

(A) existing conditions including the known limits of existing disposal areas;
(B) progression of operation including initial waste placement, daily operations, yearly contour transitions, and final contours;
(C) stormwater controls for active and inactive subcells, if required;
(D) special waste handling areas, such as asbestos disposal area, within the C&DLF unit;
(E) buffer zones, noting restricted use;
(F) stockpile and borrow operations; and
(G) other solid waste activities, such as tire disposal or storage, yard waste storage, white goods storage, recycling pads, etc.

(2) Operation Plan Description. The owner and operator of any C&DLF unit must maintain and operate the unit in accordance with the operation plan as described in Paragraphs (c) through (l) of this Rule.

(c) Waste Acceptance and Disposal Requirements.

(1) A C&DLF must accept only those solid wastes it is permitted to receive. The landfill owner or operator must notify the Division within 24 hours of attempted disposal of any waste the C&DLF is not permitted to receive, including waste from outside the area the landfill is permitted to serve.

(2) Asbestos waste must be managed in accordance with 40 CFR 61, which is hereby incorporated by reference including any subsequent amendments and additions. Copies of 40 CFR 61 are available for inspection at the Department of Environment and Natural Resources, Division of Waste Management. The regulated asbestos waste must be covered immediately with soil in a manner that will not cause airborne conditions and must be disposed of separate and apart from other solid wastes, as shown on Operation drawings:

(A) in a defined isolated area within the footprint of the landfill, or
(B) in an area not contiguous with other disposal areas. Separate areas must be designated so that asbestos is not exposed by future land-disturbing activities.

(d) Wastewater treatment sludge must not be accepted for disposal. Wastewater treatment sludge may be accepted, with the approval of the Division, for utilization as a soil conditioner and incorporated into or applied onto the vegetative growth layer. The wastewater treatment sludge must neither be applied at greater than agronomic rates nor to a depth greater than six inches.

(e) Waste Exclusions. The following wastes must not be disposed of in a C&DLF unit:

(1) Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained therein,

(2) Garbage as defined in G.S. 130A-290(a)(7),
Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators,

Industrial solid waste unless a demonstration has been made and approved by the Division that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A),

Liquid wastes,

Medical waste as defined in G.S. 130A-290(a)(18),

Municipal solid waste as defined in G.S. 130A-290(a)(18a),

Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761,

Radioactive waste as defined in G.S. 104E-5(14),

Septage as defined in G.S. 130A-290(a)(32),

Sludge as defined in G.S. 130A-290(a)(34),

Special wastes as defined in G.S. 130A-290(a)(40),

White goods as defined in G.S. 130A-290(a)(44), and

Yard trash as defined in G.S. 130A-290(a)(45),

The following wastes cannot be received if separate from C&DLF waste: lamps or bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures; thermosstats and light switches; batteries including but not limited to those from exit and emergency lights and smoke detectors; lead pipes; lead roof flashing; transformers; capacitors; and copper chrome arsenate (CCA) and creosote treated woods.

Waste accepted for disposal in a C&DLF unit must be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except as specified in Subparagraph (17) of this Paragraph.

C&D waste that has been shredded, pulverized or otherwise processed may be accepted for disposal from a facility that has received a permit from an authorized regulatory authority which specifies such activities are inspected by the authority, and whose primary purpose is recycling and reuse of the C&D material. A waste screening plan and waste acceptance plan must be made available to the Division upon request.

The owner or operator of a C&DLF must not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:

(A) Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.

(B) Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.

Cover material requirements.

Except as provided in Subparagraph (3) of this Paragraph, the owners and operators of all C&D units must cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and at least once weekly. Cover must be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter, and scavenging. A notation of the date and time of the cover placement must be recorded in the operating record as specified in Paragraph (n) of this Rule.

Except as provided in Subparagraph (3) of this Paragraph, areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, must be covered and stabilized with vegetative ground cover or other stabilizing material.

Alternative materials or an alternative thickness of cover may be approved by the Division if the owner or operator demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment. A C&D owner or operator may apply for approval of an alternative cover material. If approval is given by the Division, approval would extend to all C&D units at one specific facility.

Spreading and Compacting requirements.

C&D units must restrict solid waste into the smallest area feasible.

Solid waste must be compacted as densely as practical into cells.

Appropriate methods such as fencing and diking must be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation must be collected and disposed of by the owner and operator.
(h) Disease vector control. Owners and operators of all C&DLF units must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment. For purposes of this item, "disease vectors" means any rodents, flies, mosquitoes, or other animals or insects, capable of transmitting disease to humans.

(i) Air Criteria and Fire Control.
   (1) Owners and operators of all C&DLF units must ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.
   (2) Open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited at all C&DLF facilities. Prior to any burning a request must be sent to the Division for review. The Division will determine the burning to be approved if it is one of the two types of burning as referenced in this Subparagraph. A notation of the date of approval and the name of the Division personnel who approved the burning must be included in the operating record.
   (3) Equipment must be provided to control accidental fires and arrangements must be made with the local fire protection agency to immediately provide fire-fighting services when needed.
   (4) Fires and explosions that occur at a C&DLF require verbal notice to the Division within 24 hours and written notification within 15 days. Written notification must include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.

(j) Access and safety requirements.
   (1) The C&DLF must be adequately secured by means of gates, chains, berms, fences and other security measures approved by the Division to prevent unauthorized entry.
   (2) In accordance with G.S. 130A-309.25, an individual trained in landfill operations must be on duty at the site while the facility is open for public use and at all times during active waste management operations to ensure compliance with operational requirements.
   (3) The access road to the site and access roads to monitoring locations must be of all-weather construction and maintained in good condition.
   (4) Dust control measures must be implemented.
   (5) Signs providing information on disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information specified in the permit conditions must be posted at the site entrance.
   (6) Signs must be posted which at a minimum list liquid, hazardous and municipal solid waste as being excluded from the C&DLF unit.
   (7) Traffic signs or markers must be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
   (8) The removal of solid waste from a C&DLF is prohibited unless the unit has included in its operational plan a recycling program which has been approved by the Division. The general public is prohibited from removal activities on the working face.

(k) Erosion and sedimentation control requirements.
   (1) Adequate sediment control measures consisting of vegetative cover, materials, structures or devices must be utilized to prevent sediment from leaving the C&DLF facility.
   (2) Adequate sediment control measures consisting of vegetative cover, materials, structures or devices must be utilized to prevent excessive on-site erosion of the C&DLF facility or unit.
   (3) Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished as directed by appropriate state or local agency upon completion of any phase of C&DLF development consistent with Rule .0543(c)(5) of this Section.

(l) Drainage control and water protection requirements.
   (1) Surface water must be diverted from the operational area.
   (2) Surface water must not be impounded over or in waste.
   (3) Solid waste must not be disposed of in water.
   (4) Leachate must be contained on-site or treated prior to discharge. An NPDES permit may be required prior to the discharge of leachate to surface waters.
   (5) C&DLF units must not:
(A) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402.

(B) 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 under Section 208 or 319 of the Clean Water Act, as amended.

(m) Survey for Compliance. Within 60 days of the permittee's receipt of the Division's written request, the permittee must cause to be conducted a survey of active or closed portions of unit or units at the facility in order to determine whether operations are being conducted in accordance with the approved design and operational plans. The permittee must report the results of such survey, including a map produced by the survey, to the Division within 90 days of receipt of the Division's request.

(1) A survey shall be required by the Division:
   (A) If there is reason to believe that operations are being conducted in a manner that deviates from the plan listed in the effective permit, or
   (B) As a verification that operations are being conducted in accordance with the plan listed in the effective permit.

(2) Any survey performed pursuant to this Paragraph must be performed by a registered land surveyor duly authorized under North Carolina law to conduct such activities.

(n) Operating Record and Recordkeeping requirements.

(1) The owner and operator of a C&DLF unit must record and retain at the facility, or in an alternative location near the facility, the following information:
   (A) records of random waste inspections, monitoring results, certifications of training, and training procedures required by Rule .0544 of this Section;
   (B) amounts by weight of solid waste received at the facility to include, consistent with G.S. 130A-309.09D, county of generation;
   (C) any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .0544 through .0545 of this Section;
   (D) any closure or post-closure monitoring, testing, or analytical data as required by Rule .0543 of this Section;
   (E) any cost estimates and financial assurance documentation required by Rule .0546 of this Section;
   (F) notation of date and time of placement of cover material; and
   (G) all audit records, compliance records and inspection reports.

(2) All information contained in the operating record must be furnished to the Division according to the permit or upon request, or be made available for inspection by the Division.

(3) The operating record must also include:
   (A) A copy of the approved operation plan required by this Rule and the engineering plan required by Rule .0539 of this Section;
   (B) A copy of the current Permit to Construct and Permit to Operate; and
   (C) The Monitoring Plan, in accordance with Rule .0544 of this Section, included as appendices to the Operation Plan.


15A NCAC 13B .0543 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR C&DLF FACILITIES
(a) Purpose. This Rule establishes criteria for the closure of all C&DLF units and subsequent requirements for post-closure compliance. The owner and operator must develop specific plans for the closure and post-closure of the C&DLF facility or units that comply with these rules, and submit them to the Division for review and approval.

(b) Scope.

(1) Closure. Standards must be established for the scheduling and documenting of closure of all C&DLF units and design of the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this Section.
Post-closure. Standards are must be established for the monitoring and maintenance of the C&DLF unit(s) following closure.

(c) Closure criteria.

(1) C&DLF units must install a cap system that is designed to minimize infiltration and erosion. The cap system must be designed and constructed to:
   (A) have a permeability less than or equal to soils underlying the landfill, or the permeability specified for the final cover in the effective permit, or a permeability no greater than 1.0 x 10-5 cm/sec, whichever is less;
   (B) minimize infiltration through the closed C&DLF unit by the use of a low-permeability barrier that contains a minimum 18 inches of earthen material; and
   (C) minimize erosion of the cap system and protect the low-permeability barrier from root penetration by use of an erosion layer that contains a minimum of 18 inches of earthen material that is capable of sustaining native plant growth.

(2) Construction of the cap system for all C&DLF units must conform to the plans prepared in accordance with Rule .0540 of this Section and the following requirements:
   (A) post-settlement surface slopes must be a minimum of five percent and a maximum of 25 percent; and
   (B) a gas venting or collection system must be installed below the low-permeability barrier to minimize pressures exerted on the barrier.

(3) The Division may approve an alternative cap system or alternative post-settlement slopes if the owner or operator can demonstrate the following:
   (A) the alternative cap system will achieve a reduction in infiltration equivalent to or greater than the low-permeability barrier specified in Subparagraph (1) of this Paragraph;
   (B) the erosion layer will provide protection equivalent to or greater than the erosion layer specified in Subparagraph (1) of this Paragraph; and
   (C) the alternative post-settlement slopes must be stable, encourage runoff, be safe to operate, and be safe to construct during operation and closure activities.

(4) Prior to beginning closure of each C&DLF unit as specified in Subparagraph (5) of this Paragraph, an owner or operator must notify the Division that a notice of the intent to close the unit has been placed in the operating record, as specified in Paragraph (n) of Rule .0542.

(5) The owner and operator must begin closure activities for that portion of each C&DLF unit meeting one or more of the following requirements, unless an extension has been granted by the Division. Extensions beyond the deadline for beginning closure may be granted by the Division if the owner or operator demonstrates that the portion of the C&DLF unit has the capacity to receive additional wastes and the owner and operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed C&DLF unit:
   (A) No later than 30 days after the date on which the C&DLF unit receives the known final receipt of wastes;
   (B) No later than 30 days after the date that a 10 acre or greater area of waste, is within 15 feet of final design grades; or
   (C) No later than one year after the most recent receipt of wastes, if the C&DLF unit has remaining capacity.

(6) The owner and operator of all C&DLF units must complete closure activities of each C&DLF unit in accordance with the closure plan within 180 days following the beginning of closure as specified in Subparagraph (5) of this Paragraph. Extensions of the closure period may be granted by the Division if the owner or operator demonstrates that closure will, of necessity, 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 C&DLF unit.

(7) Following closure of each C&DLF unit, the owner or operator must notify the Division that a certification, signed by the project engineer verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record.

(8) Recordation.
   (A) Following closure of all C&DLF units, the owner or operator must record a notation on the deed to the landfill facility property at the local county Register of Deeds office, or some
other instrument that is normally examined during title search, and notify the Division that
the notation has been recorded and a copy has been placed in the operating record.

(B) The notation on the deed shall in perpetuity notify any potential purchaser of the property
that the land has been used as a C&DLF unit or facility and its use is restricted under the
closure plan approved by the Division.

(9) The owner or operator may request permission from the Division to remove the notation from the deed
if all wastes are removed from the facility.

(d) Closure plan contents. The owner and operator must prepare a written closure plan that describes the steps necessary
to close all C&DLF units at any point during their active life in accordance with the cap system requirements in
Paragraph (c) of this Rule. The closure plan, at a minimum, must include the following information:

(1) a description of the cap system and the methods and procedures to be used to install the cap
that conforms to the requirements set forth in Paragraph (c) of this Rule;

(2) an estimate of the largest area of the C&DLF unit requiring the specified cap system at any
time during the active life that is consistent with the drawings prepared for:

(A) the operation plan for an existing C&DLF unit, or

(B) the engineering plan or facility plan for a lateral expansion or new C&DLF unit;

(3) an estimate of the maximum inventory of wastes on-site over the active life of the landfill
facility;

(4) a schedule for completing all activities necessary to satisfy the closure criteria set forth in
Paragraph (c) of this Rule; and

(5) the cost estimate for closure activities as required under Rule .0546 of this Section.

(e) Post-closure criteria.

(1) Following closure of each C&DLF unit, the owner and operator must conduct post-closure care. Post-
closure care must be conducted for 30 years, except as provided under Subparagraph (2) of this
Paragraph, and consist of at least the following:

(A) maintaining the integrity and effectiveness of any cap system 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 cap system;

(B) monitoring the ground water and surface water in accordance with the requirements of Rules
.0544 through .0545 of this Section and maintaining the ground-water monitoring system, if
applicable;

(C) maintaining and operating the gas monitoring system in accordance with the requirements of
Rule .0544 of this Section; and

(D) maintaining, operating and decommissioning the leachate collection system, if present, in
accordance with the requirements of Rule .0544 of this Section. The Division may allow the
owner and operator to stop managing leachate if the owner or operator demonstrates that
leachate no longer poses a threat to human health and the environment.

(2) The length of the post-closure care period may be:

(A) decreased by the Division if the owner or operator demonstrates that the reduced period is
sufficient to protect human health and the environment and this demonstration is approved by
the Division; or

(B) increased by the Division if the Division determines that the lengthened period is necessary
to protect human health and the environment.

(3) Following completion of the post-closure care period for each C&DLF unit, the owner or operator
must notify the Division that a certification, signed by a registered professional engineer, verifying that
post-closure care has been completed in accordance with the post-closure plan, has been placed in the
operating record.

(f) Post-closure plan contents. The owner and operator of all C&DLF units must submit a written post-closure plan that
includes, at a minimum, the following information:

(1) a description of the monitoring and maintenance activities required for each C&DLF unit, and the
frequency at which these activities must be performed;

(2) name, address, and telephone number of the person or office responsible for the facility during the
post-closure period;

(3) a description of the planned uses of the property during the post-closure period. Post-closure use of the
property must not disturb the integrity of the cap system, base liner system, or any other components of
the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this Section. The Division may approve disturbance if the owner or operator demonstrates that disturbance of the cap system, base liner system, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment; and the cost estimate for post-closure activities required under Rule .0546 of this Section.


15A NCAC 13B .0544 MONITORING PLANS AND REQUIREMENTS FOR C&DLF FACILITIES
(a) A Monitoring Plan must be submitted that contains the following information and must apply to all C&DLF units. The Monitoring Plan must be prepared in accordance with this Rule.
(b) Ground-water monitoring plan. A ground-water monitoring plan, including information on the proposed ground-water monitoring system(s), sampling and analysis requirements, and detection monitoring requirements that fulfills the requirements of Part (1)(A) through (1)(E) of this Paragraph, must be submitted.

(1) A ground-water monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield ground-water samples from the aquifer that:
(A) Represent the quality of the background ground water that has not been affected by leakage from the unit. Normally, determination of background water quality will be based on sampling of a well or wells that are hydraulically upgradient of the waste management area. However, the determination of background water quality may include sampling of wells that are not hydraulically upgradient of the waste management area where hydrogeologic conditions do not allow the owner and operator to determine which wells are hydraulically upgradient, or hydrogeologic conditions do not allow the owner and operator to place a well in a hydraulically upgradient location, or sampling at other wells will provide an indication of background ground-water quality that is as representative as that provided by the upgradient well(s); and
(B) Represent the quality of ground water passing the relevant point of compliance as approved by the Division. The downgradient monitoring system must be installed at the relevant point of compliance so as to ensure detection of ground-water contamination in the uppermost aquifer. The relevant point of compliance must be established no more than 250 feet from a waste boundary, or must be at least 50 feet within the facility property boundary, whichever point is closer to the waste boundary. In determining the relevant point of compliance, the Division shall consider recommendations made by the owner and operator based upon consideration of at least the hydrogeologic characteristics of the facility and surrounding land; the quantity, quality, and direction of flow of the ground water; the proximity and withdrawal rate of the ground-water users; the existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water, and whether the ground water is currently used or reasonably expected to be used for drinking water; public health, safety, and welfare effects; and practicable capability of the owner and operator.
(C) The ground-water monitoring programs must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of ground-water quality at the background and downgradient wells. The plan must include procedures and techniques for sample collection; sample preservation and shipment; chain-of-custody control; and quality assurance and quality control.
(D) Detection ground-water monitoring program. The monitoring programs must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure target constituents and other monitoring parameters in ground-water samples. Detection monitoring is required at C&DLF units at all ground-water monitoring wells that are part of the detection monitoring system as established in the approved monitoring plan. At a minimum, the detection monitoring program must include monitoring for the constituents listed in Appendix I of 40 CFR Part 258, Mercury, Chloride, Manganese, Sulfate, Iron, specific conductance, pH, temperature, Alkalinity, and Total Dissolved Solids.
The monitoring frequency for all detection monitoring constituents must be at least semiannual during the active life of the facility, and during the closure and post-closure periods. A minimum of one sample from each well, background and downgradient, must be collected and analyzed for the constituents before waste placement in each cell or phase. At least one sample from each well, background and downgradient, must be collected and analyzed during subsequent semiannual sampling events. The Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina (15A NCAC 02L) are incorporated by reference, including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment and Natural Resources or on the Department website.

(E) The sampling procedures and frequency must be protective of human health and the environment.

(F) Each time ground-water is sampled elevations must be measured in each well immediately prior to purging. Ground-water elevations in wells which monitor the same waste management area must be measured within a 24 hour period of time to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow rate and direction. In order to accurately determine ground-water elevations for each monitoring well, the wells must have been accurately surveyed by a North Carolina Registered Land Surveyor. The survey of the wells must conform to at least the following levels of accuracy: horizontal location to the nearest 0.1 foot, vertical control for the ground surface elevation to the nearest 0.01 foot, and vertical control for the measuring reference point on the top of the inner well casing to the nearest 0.01 foot. In order to determine the rate of ground-water flow, the owner or operator must provide data for hydraulic conductivity and porosity for the formation materials at each of the well locations.

(G) The owner or operator must establish existing conditions of ground-water quality in hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular ground-water monitoring program that applies to the C&DLF unit.

(H) Within 120 days of completing a ground-water sampling event, the owner or operator must submit to the Division a report, with one copy in electronic format, that includes information from the sampling event; including: field observations relating to the condition of the monitoring wells; field data; summary of the laboratory data; field sampling quality assurance and quality control data; information on ground-water flow direction; ground-water flow rate for each well with constituents that exceed ground-water standards over background levels; and any other pertinent information related to the sampling event.

(I) The owner or operator may demonstrate that a source other than the C&DLF unit or a natural variation in ground-water quality has caused contamination, or an error in sampling or analysis of data has resulted in false reporting of contamination. A report documenting this demonstration must be certified by a Licensed Geologist or Professional Engineer and must be submitted to the Division for review. The Division shall date and stamp the demonstration "approved" if the conditions of this Paragraph are met. A copy of the approved report must also be placed in the operating record.

(2) Monitoring wells must be designed and constructed in accordance with the applicable North Carolina Well Construction Standards as codified in 15A NCAC 02C.

(A) Owners and operators must obtain approval from the Division for the design, installation, development, and decommission of any monitoring well or piezometer. Documentation must be placed in the operating record and provided to the Division.

(B) The monitoring wells and piezometers must be operated, maintained, and accessible so that they perform to design specifications throughout the life of the monitoring program.

(3) The number, spacing, and depths of monitoring points must be determined based upon site-specific technical information that must include investigation of:

(A) aquifer thickness, ground-water flow rate, and ground-water flow direction, including seasonal and temporal fluctuations in ground-water flow; and
unsaturated and saturated geologic units (including fill materials) overlying and comprising
the uppermost aquifer, including thickness, stratigraphy, lithology, hydraulic conductivities,
porosities and effective porosities.

(4) The Division may require or allow the use of alternative monitoring systems in addition to ground-
water monitoring wells:
(A) at sites where the owner and operator does not control the property from any landfill unit to
the ground-water discharge feature(s); or
(B) at sites with hydrogeologic conditions favorable to detection monitoring by alternative
methods.

(5) Owners and operators of C&DLF units must comply with the ground-water monitoring, assessment
and corrective action requirements under Rules .0544 through .0545 of this Section according to the
following schedule:
(A) new C&DLF units must be in compliance with the requirements before waste can be placed
in the unit; and
(B) lateral expansions to existing C&DLF units must be in compliance with the requirements
before waste can be placed in the expansion area.

(c) Surface water monitoring plan. The Surface Water Monitoring System must be as follows:
(1) The Division shall require a solid waste management facility to provide such surface water monitoring
capability as the Division determines to be necessary to detect the effects of the facility on surface
water in the area. In making such a determination, the Division shall consider the following factors:
(A) the design of the facility, the nature of the process it will use, and the type of waste it will
handle;
(B) drainage patterns and other hydrological conditions in the area;
(C) proximity of surface water to the facility;
(D) uses that are being or may be made of any surface water that may be affected by the facility;
and
(E) any other factors that reasonably relate to the potential for surface water effects from the
facility.
(2) Responsibility for sample collection and analysis must be defined as a part of the monitoring plan.

(d) Gas control plan.
(1) Owners and operators of all C&DLF units must ensure that:
(A) the concentration of methane gas or other explosive gases generated by the facility does not
 exceed 25 percent of the lower explosive limit in on-site facility structures (excluding gas
control or recovery system components);
(B) the concentration of methane gas or other explosive gases does not exceed the lower
 explosive limit for methane or other explosive gases at the facility property boundary; and
(C) the facility does not release methane gas or other explosive gases in any concentration that
 can be detected in offsite structures.
(2) Owners and operators of all C&DLF units must implement a routine methane monitoring program to
ensure that the standards of this Paragraph are met.
(A) The type of monitoring must be determined based on soil conditions, the hydrogeologic
conditions under and surrounding the facility, hydraulic conditions on and surrounding the
facility, the location of facility structures and property boundaries, and the location of all off-
site structures adjacent to property boundaries.
(B) The frequency of monitoring shall be quarterly or as approved by the Division.
(3) If methane or explosive gas levels exceeding the limits specified in Subparagraph (d)(1) of this Rule
are detected, the owner and operator must:
(A) immediately take all steps necessary to ensure protection of human health and notify the
Division;
(B) within seven days of detection, place in the operating record the methane or explosive gas
levels detected and a description of the steps taken to protect human health; and
(C) within 60 days of detection, implement a remediation plan for the methane or explosive gas
releases, place a copy of the plan in the operating record, and notify the Division that the plan
has been implemented. The plan must describe the nature and extent of the problem and the
proposed remedy.
Based on the need for an extension demonstrated by the operator, the Division may establish alternative schedules for demonstrating compliance with Parts (3)(B) and (3)(C) of this Paragraph.

For purposes of this Item, "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.

e) A waste acceptability program. Owners and operators of all C&DLF units must implement a program at the facility for detecting and preventing the disposal of industrial, hazardous, liquid, municipal solid waste and excluded wastes in accordance with the Operating Plan or the effective permit. This program must include, at a minimum:
   (1) random inspections of incoming loads or other comparable procedures;
   (2) records of any inspections;
   (3) training of facility personnel to recognize industrial, hazardous, liquid, municipal and excluded waste; and
   (4) development of a contingency plan to properly manage any identified industrial hazardous, liquid, municipal or excluded waste. The plan must address identification, removal, storage and final disposition of the waste.

(f) The Monitoring Plan must include any other monitoring plan or program which is necessary according to the Operating Plan or the effective permit.

(g) Monitoring plans must be prepared under the responsible charge of and bear the seal of a Licensed Geologist or Professional Engineer in accordance with G.S. 89E or 89C, respectively.

(h) Monitoring plans must be certified by a Licensed Geologist or Professional Engineer to be effective in providing early detection of any release of hazardous constituents from any point in a disposal cell or leachate surface impoundment to the uppermost aquifer, air, surface waters, or proximal area, so as to be protective of public health and the environment.

(i) Monitoring plans must be submitted to the Division for review. The Division shall date and stamp the monitoring plans "approved" if they meet the conditions of this Rule. A copy of the approved monitoring plan must be placed in the operating record.

(j) Once established at a C&DLF facility, all monitoring must be conducted throughout the active life and post-closure care period for all C&DLF units.


15A NCAC 13B .0545  ASSESSMENT AND CORRECTIVE ACTION PROGRAM FOR C&DLF FACILITIES AND UNITS

(a) Assessment Program. Assessment is required if one or more constituents, as listed in Part (b)(1)(D) of Rule .0544 of this Section are detected above the current ground-water quality standards in accordance with 15A NCAC 02L .0202, in any sampling event. The owner and operator must also immediately:
   (1) Install at least one additional groundwater monitoring well or methane gas monitoring well at the facility boundary or the compliance boundary, as defined in 15A NCAC 02L .0100, in the direction of contaminant migration. The new sampling point must be installed at the facility boundary or compliance boundary at the location most likely to show impact based on the known geology and hydrogeology;
   (2) Notify all persons who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site or are thought to have migrated off site;
   (3) Within 30 days of triggering an assessment monitoring program, the owner and operator must submit an assessment monitoring work plan for Division review. The Division shall date and stamp the assessment monitoring program "approved" if the conditions in Paragraph (b) of this Rule are met. The owner and operator must place the approved program in the operation record, and notify all appropriate local government officials.

(b) Assessment Monitoring Work Plan. The assessment monitoring work plan must be in accordance with the following:
   (1) Install additional monitoring wells to characterize the nature and extent of the release by determining the following:
      (A) Lithology of the aquifer and unsaturated zone;
      (B) Hydraulic conductivity of the aquifer and unsaturated zone;
      (C) Ground-water flow rates;
      (D) Minimum distance of travel;
(E) Resource value of the aquifer; and
(F) Nature, fate, and transport of any detected constituents.

(2) Analyze for additional parameters, which may include constituents on the Appendix II of 40 CFR Part 258 as directed by the Division. For any constituent detected in the downgradient wells as the result of analyzing of additional parameters, a minimum of four independent samples from each well (background and downgradient) must be collected and analyzed to establish background for the new constituents.

(3) If the new constituents do not have an established 15A NCAC 02L .0202 groundwater quality standard, the owner or operator must obtain a determination from the Division on establishing a groundwater protection standard for each constituent detected in groundwater. The groundwater protection standard must be the most protective of the following:
(A) For constituents for which a maximum contamination level (MCL) has been promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR Part 141, the MCL for that constituent;
(B) For constituents for which a water quality standard has been established under the North Carolina Rules Governing Public Water Systems, 15A NCAC 18C, the water quality standard for that constituent;
(C) For constituents for which MCLs or water quality standards have not been promulgated, the background concentration for the constituent established from wells in accordance with Rule .1631(a)(1) of this Section; or
(D) For constituents for which the background level is higher than the MCL or water quality standard or health based levels identified under Paragraph (i) of this Rule, the background concentration.

(4) The Division may establish an alternative ground-water protection standard for constituents for which neither an MCL or water quality standard has not been established. These ground-water protection standards must be appropriate health based levels that satisfy the following criteria:
(A) The level is derived in a manner consistent with E.P.A. guidelines for assessing the health risks of environmental pollutants;
(B) 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;
(C) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) of 1 x 10^-6;
(D) For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

(5) In establishing ground-water protection standards under Paragraph (b) of this Rule the Division may consider the following:
(A) Multiple contaminants in the ground water;
(B) Exposure threats to sensitive environmental receptors; and
(C) Other site-specific exposure or potential exposure to ground water.

(6) The Division may specify an appropriate subset of wells to be sampled and analyzed during assessment monitoring. The Division may delete any of the additional monitoring parameters if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit.

(7) After obtaining the results from the initial and subsequent sampling events, the owner or operator must submit an assessment monitoring report to the Division which must be certified by a Licensed Geologist.

(8) The owner or operator may demonstrate that a source other than a C&DLF caused the contamination. An alternate source demonstration report must be prepared by a certified Licensed Geologist and submitted for approval by the Division. A copy of the approved report must also be placed in the operating record. If a successful demonstration is made, the owner or operator may discontinue assessment monitoring, and may return to detection monitoring if the constituents are at or below background values and 15A NCAC 02L .0202 or approval is given by the Division according to
Subparagraph (9) of this Paragraph. Until a successful demonstration is made, the owner or operator must comply with Paragraph (b) of this Rule.

(9) The Division may give approval to the owner or operator to return to detection monitoring if:
(A) The concentrations of the constituents are shown to be at or below background values and 15A NCAC 02L .0202 for two consecutive sampling events;
(B) The plume is not migrating horizontally or vertically; and
(C) The plume has not exceeded the compliance boundary.

(10) If constituents are consistently detected above background, 15A NCAC 02L .0202, and the approved groundwater protection standards, the owner or operator must initiate Assessment of Corrective Measures.

(c) Assessment of Corrective Measures. Assessment of corrective measures is required upon completion of Paragraphs (a) and (b) of this Rule as determined by the Division. The assessment of corrective measures must include an analysis of the effectiveness of potential corrective actions in meeting all of the requirements and objectives of the remedy as described under this Rule. The assessment of corrective measures document must address the following at a minimum:
(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 to complete the remedy;
(3) the costs of remedy implementation; and
(4) the institutional requirements such as State and Local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

(d) The owner and operator must discuss the results of the assessment of corrective measures, prior to the selection of the remedy, in a public meeting with interested and affected parties. The owner and operator must provide a public notice of the meeting at least 30 days prior to the meeting. The notice must include the time, place, date, and purpose of the meeting required by this Paragraph of this Rule. A copy of the public notice must be forwarded to the Division at least five days prior to publication. The owner and operator must mail a copy of the public notice to those persons requesting notification. Public notice must be in accordance with Rule .0533(c)(4) of this Section.

(e) Selection of Remedy. Based on the results of the Assessment of Corrective Actions, the owner and operator must select a remedy that, at a minimum, meets the standards listed in Subparagraph (e)(2) of this Rule as follows:
(1) Within 30 days of selecting a remedy, the permittee must submit an application to modify the permit describing the selected remedy to the Division for evaluation and approval. The application must be subject to the processing requirements set forth in Rule .0533(c) of this Section. The application must include the demonstrations necessary to comply with the financial assurance requirements set forth in accordance with Rule .0546 of this Section.
(2) Remedies must:
   (A) be protective of human health and the environment;
   (B) attain the approved ground-water protection standards;
   (C) 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; and
   (D) comply with standards for management of wastes as specified in Paragraph (k) of this Rule.
(3) In selecting a remedy that meets the standards of Subparagraph (e)(2) of this Rule, the owner and operator must consider the following evaluation factors:
   (A) The long-term 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 magnitude of reduction of existing risks; magnitude of residual risks in terms of likelihood of further releases due to wastes remaining following implementation of a remedy; the type and degree of long-term management required, including monitoring, operation, and maintenance; short-term risks that might be posed to the community, to workers, or to 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; time until full protection is achieved; 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; long-term reliability of the engineering and institutional controls; and potential need for replacement of the remedy.

(B) The effectiveness of the remedy in controlling the source to reduce further releases, based on consideration of the extent to which containment practices will reduce further releases, and the extent to which treatment technologies may be used.

(C) The ease or difficulty of implementing a potential remedy, based on consideration of the degree of difficulty associated with constructing the technology; the expected operational reliability of the technologies; the need to coordinate with and obtain necessary approvals and permits from other agencies; the availability of necessary equipment and specialists; and available capacity and location of needed treatment, storage, and disposal services.

(D) The practicable capability of the owner and operator, including a consideration of the technical and economic capability.

(4) The owner and operator must specify as part of the selected remedy a schedule for initiating and completing remedial activities included in a corrective action plan. This schedule must be submitted to the Division for review and approval. Such a schedule must require the initiation of remedial activities within a reasonable period of time, taking into consideration the factors set forth in this Rule. The owner and operator must consider the following factors in determining the schedule of remedial activities:

(A) nature and extent of contamination;
(B) practical capabilities of remedial technologies in achieving compliance with the approved ground-water protection standards and other objectives of the remedy;
(C) availability of treatment or disposal capacity for wastes managed during implementation of the remedy;
(D) desirability of utilizing technologies that are not currently available, but which may offer advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;
(E) potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;
(F) resource value of the aquifer, including current and future uses; proximity and withdrawal rate of users; ground-water quantity and quality; the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to contaminants; the hydrogeologic characteristics of the facility and surrounding land; ground-water removal and treatment costs; the costs and availability of alternative water supplies;
(G) practical capability of the owner and operator; and
(H) other relevant factors.

(f) The Division may determine that active remediation of a release of any detected constituent from a C&DLF unit is not necessary if the owner or operator demonstrates to the satisfaction of the Division that:

(1) The ground-water is additionally contaminated by substances that have originated from a source other than a C&DLF unit and those substances are present in concentrations such that active cleanup of the release from the C&DLF unit would provide no significant reduction in risk to actual or potential receptor;
(2) The constituent or constituents are present in ground-water that is not currently or reasonably expected to be a source of drinking water and is not hydraulically connected with water to which the constituents are migrating or are likely to migrate in concentrations that would exceed the approved ground-water protection standards;
(3) Remediation of the release is technically impracticable; or
(4) Remediation results in unacceptable cross-media impacts.

(g) A determination by the Division pursuant to this Paragraph must not affect the authority of the State to require the owner and operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the ground water, to prevent exposure to the ground water, or to remediate ground water to concentrations that are technologically practicable and reduce threats to human health or the environment.

(h) Implementation of the Corrective Action Program. Based on the approved schedule for initiation and completion of remedial activities, the owner and operator must submit in a corrective action plan:

(1) Establish and implement a corrective action ground-water monitoring program that:
(A) at a minimum, meets the requirements of an assessment monitoring program under Paragraphs (a) and (b) of this Rule;
(B) indicates the effectiveness of the corrective action remedy; and
(C) demonstrates compliance with ground-water protection standards pursuant to Paragraph (i) of this Rule.

(2) Implement the approved corrective action remedy; and
(3) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures must be consistent with the objectives of and contribute to the performance of any remedy that may be required. The following factors must be considered by an owner and operator 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 ground water 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 or the environment.

(i) The owner or operator or the Division may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of Subparagraph (e)(2) of this Rule are not being achieved through the remedy selected. In such cases, the owner and operator must implement other methods or techniques, as approved by the Division that could practically achieve compliance with the requirements, unless the owner or operator makes the determination under Paragraph (f) of this Rule.

(j) If the owner or operator determines that compliance with requirements of Subparagraph (e)(2) of this Rule cannot be practically achieved with any currently available methods, the owner and operator must:
(1) obtain certification of a Licensed Geologist or Professional Engineer and approval from the Division that compliance with the requirements under Subparagraph (e)(2) of this Rule 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) submit a report justifying the alternative measures to the Division for review. The Division shall date and stamp the report "approved" if the conditions of this paragraph are satisfied. The approved report must be placed in the operating record prior to implementing the alternative measures.

(k) All solid wastes that are managed pursuant to a remedy required under Paragraph (e) of this Rule, or an interim measure required under Paragraph (e) of this Rule, must be managed in a manner:
(1) that is protective of human health and the environment, and
(2) that complies with applicable state and federal requirements.

(l) Remedies selected pursuant to Paragraph (e) of this Rule shall be considered complete when:
(1) the owner and operator complies with the ground-water protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance;
(2) compliance with the ground-water protection standards has been achieved by demonstrating that concentrations of constituents have not exceeded these standards for a period of three consecutive years, consistent with performance standards in Subparagraph (e)(2) of this Rule; and
(3) all actions required to complete the remedy have been satisfied.

(m) Upon completion of the remedy, the owner and operator must submit a report to the Division documenting that the remedy has been completed in compliance with Paragraph (l) of this Rule. This report must be signed by the owner and by a Licensed Geologist or Professional Engineer. Upon approval by the Division, this report must be placed in the operating record.
(n) When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph (l) of this Rule, the owner and operator shall be released from the requirements for financial assurance for corrective action under Rule .0546 of this Section.


15A NCAC 13B .0546 FINANCIAL ASSURANCE REQUIREMENTS FOR C&DLF FACILITIES AND UNITS

(a) Owners and operators of C&DLF facilities and units must provide proof of financial assurance in accordance with the financial responsibility for landfills adopted pursuant to G.S. 130A-294(b) and 130A-309.27.

(b) Owners and operators of C&DLF facilities and units permitted under these Rules must provide proof of financial assurance to ensure closure of the site in accordance with these Rules and to cover closure, post-closure, and corrective action of the landfill. Financial assurance may be demonstrated through surety bonds, insurance, letters of credit, a funded trust, or local government financial test. Documentation of financial assurance must be kept current, and updated annually as required by changes in these Rules, changes in operation of the site, and inflation.

(c) Owners and operators of C&DLF facilities and units must demonstrate the following minimum amounts of financial assurance for closure and post-closure care:

(1) The owner and operator must have a written estimate, in current dollars, of the cost of hiring a third party to close the entire area of all C&DLF units, which have received permits to operate, at any time during the active life in accordance with the closure plan required under Rule .0543 of this Section. A copy of the closure cost estimate must be placed in the C&DLF’s closure plan and the operating record.

(A) The cost estimate must equal the cost of closing the entire area of all C&DLF units, which have received permits to operate, 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 as set forth in Rule .0543 of this Section.

(B) During the active life of the C&DLF, the owner and operator must annually adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s). For owners and operators using the local government financial test, the closure cost estimate must be updated for inflation within 30 days after the close of the local government’s fiscal year and before submission of updated information to the Division.

(C) The owner and operator must increase the closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes to the closure plan or C&DLF unit conditions increase the maximum cost of closure at any time during the remaining active life.

(D) The owner or operator may reduce the closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the C&DLF unit. Prior to any reduction of the closure cost estimate or the amount of financial assurance by the owner or operator, a written justification for the reduction must be submitted to the Division for review. The Division shall date and stamp the justification “approved” if the conditions of this paragraph are met. The reduction justification and the Division approval must be placed in the C&DLF’s operating record. No reduction of the closure cost estimate or the amount of financial assurance shall be allowed without Division approval.

(2) The owner and operator of each C&DLF unit must establish financial assurance for closure of the C&DLF unit in compliance with Paragraph (a) of this Rule. The owner and operator must provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with Rule .0543 of this Section for final closure certification.

(3) The owner and operator must have a written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the C&DLF unit(s) in compliance with the post-closure plan developed under Rule .0543 of this Section. The post-closure cost estimate used to demonstrate financial assurance in Subparagraph (2) of this Paragraph must 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 post-closure cost estimate must be placed in the operating record.

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

(B) During the active life of the C&DLF unit(s) and during the post-closure care period, the owner and operator must annually adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s). For owners and operators using the local government financial test, the post-closure cost estimate must be updated for inflation within 30 days after the close of the local government's fiscal year and before submission of updated information to the Division.

(C) The owner and operator must increase the post-closure care cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the post-closure plan or C&DLF unit(s) conditions increase the maximum costs of post-closure care.

(D) The owner or operator may reduce the post-closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. Prior to any reduction of the post-closure cost estimate by the owner or operator, a written justification for the reduction shall be submitted to the Division for review. The Division shall date and stamp the justification "approved" if the conditions of this paragraph are met. The written justification and the Division approval must be placed in the C&DLF operating record. No reduction of the post-closure cost estimate shall be allowed without Division approval.

(4) The owner and operator of each C&DLF unit must establish, in a manner in accordance with Paragraph (a) of this Rule, financial assurance for the costs of post-closure care as required under Rule .0543 of this Section. The owner and operator must provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with Rule .0543 of this Section. Maintenance of financial assurance in the required amounts in Subparagraphs (c)(1) and(c)(2) of this Rule does not in any way limit the responsibility of owners and operators for the full costs of site closure and clean-up, the expenses of any on-site or off-site environmental restoration necessitated by activities at the site, and liability for all damages to third parties or private or public properties caused by the establishment and operation of the site.

(5) An owner and operator of a C&DLF unit required to undertake a corrective action program under Rule .0545 of this Section must have a written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action. The corrective action cost estimate must account for the total costs of corrective action activities as described in the corrective action program for the entire corrective action period. The owner and operator must notify the Division that the estimate has been placed in the operating record.

(A) The owner and operator must annually adjust the estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) until the corrective action program is completed in accordance with Rule .0545(m) of this Section. For owners and operators using the local government financial test, the corrective action cost estimate must be updated for inflation within 30 days after the close of the local government's fiscal year and before submission of updated information to the Division.

(B) The owner and operator must increase the corrective action cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the corrective action program or C&DLF unit conditions increase the maximum costs of corrective action.

(C) The owner or operator may reduce the corrective action cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum remaining costs of corrective action. Prior to any reduction of the corrective action cost estimate by the owner or operator, a written justification for the reduction must be submitted to the Division for review. The Division shall date and stamp the justification "approved" if the conditions of this Paragraph are met. The reduction justification and the Division approval must be placed in the C&DLF's operating record. No reduction of the corrective action cost estimate shall be allowed without Division approval.
The reduction justification and the Division approval must be placed in the C&DLF’s operating record.

(6) The owner and operator of each C&DLF unit required to undertake a corrective action program under Rule .0545 of this Section must establish, in a manner in accordance with Paragraph (a) of this Rule, financial assurance for the most recent corrective action program. The owner or operator must provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with Rule .0545(m) of this Section.

History Note:  Authority G.S. 130A-294;

15A NCAC 13B .0547  EXISTING C&DLF UNITS AS OF JANUARY 1, 2007
An owner and operator of an existing C&DLF unit(s), those receiving waste prior to January 1, 2007, must close or submit an application document according to the criteria and scheduling requirements set forth in this Rule. All C&DLF unit(s) must conform to the specific conditions set forth in the permit and the following general provisions.

(1) Closure of existing C&DLF unit(s). C&DLF unit(s), which did not and will not receive solid waste after June 30, 2008, must comply with the Solid Waste Permit, the Conditions of Permit, and Rule .0510 of this Section.

(2) Financial Assurance for existing C&DLF facilities and units. Owners and operators of existing C&DLF facilities and units must submit the following by July 1, 2008:
   (a) a closure and post-closure plan prepared in accordance with Rule .0543 of this Section; and
   (b) financial responsibility in accordance with Rule .0546 of this Section.

(3) Application for a Permit to Construct a new phase of an existing C&DLF facility or unit must be subject to the following. An owner and operator of an existing C&DLF must submit an application 120 days prior to the expiration date of the effective permit to operate or at least 180 days prior to the date scheduled for constructing a phase of C&DLF development not approved in the effective permit to operate, whichever occurs first. The application must consist of the following:
   (a) a facility plan that defines the comprehensive development of the property. The plan includes a set of drawings and a report which presents the long-term, general design concepts related to construction, operation, and closure of the C&DLF unit(s). The scope of the plan spans the active life of the unit(s). A facility plan must be prepared in accordance with Subparagraphs (d)(1), (e)(1), (e)(2), and (e)(3) of Rule .0537 of this Section. Additional solid waste management activities located at the C&DLF facility must be identified in the plan and must meet the requirements of this Subchapter. The facility plan defines the waste stream proposed for management at the C&DLF facility. If different types of landfill units or non-disposal activities are included in the facility design, the plan must describe general waste acceptance and segregation procedures. The areal limits of the C&DLF unit(s), total capacity of the C&DLF unit(s), and the proposed waste stream must be in accordance with the current permit for an existing facility applying for a Permit to Construct a new phase not approved in the current permit;
   (b) an engineering plan that is prepared for the initial phase of landfill development prepared in accordance with Rule .0539 of this Section;
   (c) a construction quality assurance plan prepared in accordance with Rule .0541 of this Section;
   (d) an operation plan prepared in accordance with Rule .0542 of this Section, with an appended monitoring plan in accordance with Rule .0544 of this Section; and
   (e) a closure and post-closure plan prepared in accordance with Rule .0543 of this Section.

(4) Owners and operators of existing C&DLF units on top of closed MSWLFs must submit a permit application by July 1, 2008, for the continued operations of those units. The permit must be reviewed at the end of each five-year period. The permit will be reissued upon receipt of a complete permit amendment prepared in accordance with Rule .0535(b) and upon determination that the corrective action plan prepared in accordance with Rule .0547(4)(e) is being implemented. The application must contain:
   (a) local government approval in accordance with Rule .0536(c)(11) of this Section,
   (b) an operations plan in accordance with Rule .0542 of this Section, including a five-year phase of development and a waste acceptance plan in accordance with the existing permit,
(c) a corrective action plan for the closed MSWLF, as required by Rule .1635 of this Subchapter, prepared in accordance with Rules .1636 and .1637 of this Subchapter,
(d) a closure and post-closure plan in accordance with Rule .1627 of this Subchapter, and
(e) financial assurance in accordance with Rule .1628 of this Subchapter.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0548 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0549 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0550 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0551 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0552 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0553 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0554 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0555 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0556 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0557 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0558 RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .0559 RESERVED FOR FUTURE CODIFICATION

15A NCAC 13B .0560 LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

History Note: Authority G.S. 130A-294;
Eff. January 4, 1993;
Expired Eff. July 1, 2017 pursuant to G.S. 150B-21.3A.

15A NCAC 13B .0561 RESERVED FOR FUTURE CODIFICATION

15A NCAC 13B .0562 BENEFICIAL FILL
A permit is not required for beneficial fill activity that meets all of the following conditions:

(1) The fill material consists only of inert debris strictly limited to concrete, brick, concrete block, uncontaminated soil, rock, and gravel.
(2) The fill activity involves no excavation.
(3) The purpose of the fill activity is to improve land use potential or other approved beneficial reuses.
(4) The fill activity is not exempt from, and must comply with, all other applicable Federal, State, and Local laws, ordinances, rules, and regulations, including but not limited to zoning restrictions, flood plain restrictions, wetland restrictions, mining regulations, sedimentation and erosion control regulations. Fill activity shall not contravene groundwater standards.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0563 APPLICABILITY REQ. FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS
Management of land clearing and inert debris shall be in accordance with the State hierarchy for managing solid waste as provided for under G.S. 130A-309.04(a). Disposal in a landfill is considered to be the least desirable method of managing land clearing and inert debris. Where landfilling is necessary, the requirements of this Rule apply.

(1) An individual permit from the Division of Solid Waste Management is not required for Land Clearing and Inert Debris (LCID) landfills that meet all of the following conditions:
(a) The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash. Operations must be consistent and in compliance with
the local government solid waste management plan as approved by the Division of Solid Waste Management.

(b) The total disposal area is under two acres in size.

c) The facility and practices comply with the siting criteria under Rule .0564, and operational requirements under Rule .0566.

(d) The fill activity is not exempt from, and must comply with all other Federal, State, or Local laws, ordinances, Rules, regulations, or orders, including but not limited to zoning restrictions, flood plain restrictions, wetland restrictions, sedimentation and erosion control requirements, and mining regulations.

(2) Where an individual permit is not required, the following applies:

(a) The owner of the land where the landfill is located must notify the Division on a prescribed form, duly signed, notarized, and recorded as per Sub-item (2)(b) of this Rule. The operator of the landfill, if different from the land owner, shall also sign the notification form.

(b) The owner must file the prescribed notification form for recordation in the Register of Deeds’ Office. The Register of Deeds shall index the notification in the grantor index under the name of the owner of the land in the county or counties in which the land is located. A copy of the recorded notification, affixed with the Register's seal and the date, book and page number of recording shall be sent to the Division of Solid Waste Management.

(c) When the land on which the Land Clearing and Inert Debris Landfill is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a Land Clearing and Inert Debris Landfill and a reference by book and page to the recordation of the notification.

(3) An individual permit is required, except for landfills subject to Item (5) of this Rule, for the construction and operation of a Land Clearing and Inert Debris (LCID) landfill when:

(a) The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash. Operations must be consistent and in compliance with the local government solid waste management plan as approved by the Division of Solid Waste Management, and

(b) The total disposal area is greater than two acres in size.

(4) Individual permits for land clearing and inert debris landfills shall be issued for not more than five years.

(5) Landfilling of land clearing and inert debris generated solely from, and within the right of way of, North Carolina Department of Transportation projects shall be subject to the following:

(a) Only waste types as described in Sub-item (1)(a) of this Rule may be disposed of within the Department of Transportation right of way.

(b) Waste is landfilled within the project right of way from which it was generated.

(c) The disposal area shall not exceed two contiguous acres in size.

(d) Disposal sites shall comply with the siting requirements of Rule .0564 of this Section except for Item (10).

(e) Disposal sites are not subject to the requirements of Item (2) of this Rule and Rule .0204 of this Subchapter.

(6) Landfills that are currently permitted as demolition landfills are required to comply with the following:

(a) Only waste types as described in Sub-item (3)(a) of this Rule may be accepted for disposal, as of the effective date of this Rule unless otherwise specified in the existing permit.

(b) Operations must be in compliance with Rule .0566 of this Section as of the effective date of this Rule.
(c) Existing demolition landfills must comply with the siting criteria requirements of these Rules as of January 1, 1998 or cease operations and close in accordance with these Rules.


15A NCAC 13B .0564 SITING CRITERIA FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

The following siting criteria shall apply for Land Clearing and Inert Debris (LCID) landfills:

(1) Facilities or practices shall not be located in the 100-year floodplain.
(2) Facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.
(3) Facilities or practices shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost.
(4) Facilities or practices shall not damage or destroy an archaeological or historical site.
(5) Facilities or practices shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.
(6) Facilities shall not be located in any wetland as defined in the Clean Water Act, Section 404(b).
(7) It must be shown that adequate suitable soils are available for cover, either from on or off site.
(8) Land Clearing and Inert Debris landfills shall meet the following surface and ground water requirements:
   (a) Facilities or practices shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended.
   (b) Facilities or practices shall not cause a discharge of dredged materials or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended.
   (c) Facilities or practices shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.
   (d) Waste in landfills with a disposal area greater than two acres shall be placed a minimum of four feet above the seasonal high water table, except where an alternative separation is approved by the Division.
   (e) Waste in landfills with a disposal area less than two acres shall be placed above the seasonal high water table.
(9) The facility shall meet the following minimum buffer requirements:
   (a) 50 feet from the waste boundary to all surface waters of the state as defined in G.S. 143-212.
   (b) 100 feet from the disposal area to property lines, residential dwellings, commercial or public buildings, and wells.
   (c) Buffer requirements may be adjusted as necessary to insure adequate protection of public health and the environment.
(10) The facility shall meet all requirements of any applicable zoning ordinance.


15A NCAC 13B .0565 APPLICATION REQUIREMENTS FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS
Five sets of plans, maps, and reports shall be required with each application. The seal of a professional engineer is required when submitting plans for a Land Clearing and Inert Debris (LCID) landfill.

(1) The following information is required in order to review and approve the siting of a Land Clearing and Inert Debris (LCID) landfill:

   (a) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned.

   (b) Location on a county road map.

   (c) Information showing that the bottom elevation of the waste shall be four feet above the seasonal high water table. Seasonal high water table elevations shall be obtained from on site test borings, test pits, or from other geological or water table investigations, studies, or reports from the immediate area of the proposed facility.

   (d) A written report indicating that the facility shall comply with all the requirements set forth under Rule .0564 of this Section.

   (e) A copy of the deed or other legal description of the site that would be sufficient as a description in an instrument of conveyance, showing property owner's name.

   (f) Any other information pertinent to the suitability of the proposed facility.

(2) The following shall be provided on a map or aerial photograph with a scale of at least one inch equals four hundred feet showing the area within one-fourth mile of the site:

   (a) Entire property or portion thereof owned or leased by the person providing the disposal site.

   (b) Location of all homes, buildings, public or private utilities, roads, wells, watercourses, water or other impoundments, and any other applicable features or details.

   (c) 100-year flood plain boundaries, if any.

   (d) Wetland boundaries, if any.

   (e) Historical or archaeological sites, if any.

   (f) Park, scenic, or recreation area boundaries, if any.

(3) Development and design plans and details, at a scale of at least one inch equals one hundred feet with one inch equals forty feet preferred, and specifications containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:

   (a) Property or site boundary, fully dimensioned with bearings and distances, tied to North Carolina grid coordinates where reasonably feasible.

   (b) Easements and right-of-ways.

   (c) Existing pertinent on site and adjacent structures such as houses, buildings, wells, roads and bridges, water and sewer utilities, septic fields, and storm drainage features.

   (d) Proposed and existing roads, points of ingress and egress along with access control such as gates, fences, or berms.

   (e) Buffer and set back lines along with the buffered boundary or feature.

   (f) Springs, streams, creeks, rivers, ponds, and other waters and impoundments.

   (g) Wetlands, if any.

   (h) Boundary of the proposed waste area.

   (i) Existing topography with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify existing topographic conditions.

   (j) Proposed excavation, grading, and final contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading. Excavation, grading, and fill material side slopes shall not exceed three to one (3:1).

   (k) Where on site borrow for operational and final cover is proposed, indicate the borrow excavation and grading plan with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading.

   (l) Proposed surface water control features and devices such as slope drains, storm water pipes, inlets, culverts, and channels.

   (m) Information showing that the project meets the requirements of 15A NCAC 4, Sedimentation Control Rules.

   (n) Location of test borings or test pits, if used to determine the seasonal high water table elevation, shall be shown on the plans.
A minimum of two cross-sections, one each along each major axis, per operational area showing:

(i) Original elevations.
(ii) Proposed excavation.
(iii) Proposed final elevations.

An operational plan addressing the requirements under Rule .0566 of this Section and containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:

(a) Name, address, and phone number of individual responsible for operation and maintenance of the facility.
(b) Projected use of the land after completion.
(c) Description of systematic usage of disposal area, operation, orderly development and closure of the landfill.
(d) Type, source, and quantity of waste to be accepted.
(e) An emergency contingency plan, including fire fighting procedures.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .0566 OPERATIONAL REQ. FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

Land Clearing and Inert Debris (LCID) landfills shall meet the following operational requirements:

(1) Operational plans shall be approved and followed as specified for the facility.
(2) The facility shall only accept those solid wastes which it is permitted to receive.
(3) Solid waste shall be restricted to the smallest area feasible and compacted as densely as practical into cells.
(4) Adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first.
(5) Adequate erosion control measures, structures, or devices shall be utilized to prevent silt from leaving the site and to prevent excessive on site erosion.
(7) Provisions for a ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.
(8) The facility shall be adequately secured by means of gates, chains, berms, fences, etc. to prevent unauthorized access except when an operator is on duty. An attendant shall be on duty at all times while the landfill is open for public use to assure compliance with operational requirements and to prevent acceptance of unauthorized wastes.
(9) Access roads shall be of all-weather construction and properly maintained.
(10) Surface water shall be diverted from the working face and shall not be impounded over waste.
(11) Solid waste shall not be disposed of in water.
(12) Open burning of solid waste is prohibited.
(13) The concentration of explosive gases generated by the facility shall not exceed:
   (a) Twenty-five percent of the lower explosive limit for the gases in facility structures.
   (b) The lower explosive limit for the gases at the property boundary.
(14) Leachate shall be properly managed on site through the use of current best management practices.
(15) Should the Division deem it necessary, ground water or surface water monitoring, or both, may be required as provided for under Rules .0601 and .0602 of this Subchapter.
A sign shall be posted at the facility entrance showing the contact name and number in case of an emergency and the permit number. The permit number requirement is not applicable for facilities not requiring an individual permit.


SECTION .0600 - MONITORING REQUIREMENTS

Rules .0601 - .0602 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0601 - .0602); have been transferred and recodified from Rules .0601 - .0602 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0601 - .0602), effective April 4, 1990.

15A NCAC 13B .0601 GROUND-WATER MONITORING
(a) The Division shall require a solid waste management facility to provide such ground-water monitoring capability as the Division determines to be necessary to detect the effects of the facility on ground-water in the area. In making such a determination, the Division shall consider the following factors:

(1) the design of the facility, the nature of the processes it will use, and the type of waste it will handle;
(2) soil and other geological conditions in the area;
(3) nearness of ground-water to the facility;
(4) uses that are being or may be made of any ground-water that may be affected by the facility; and
(5) any other factors that reasonably relate to the potential for ground-water effects from the facility.

(b) Responsibility for sample collection and analysis will be defined as a part of the permit condition.
(c) Any other information that the Division deems pertinent to the development of a ground-water monitoring system will be required.
(d) All monitoring wells required pursuant to this Rule shall comply with monitoring well construction standards of 15A NCAC 2C .0105. Copies of 15A NCAC 2C may be obtained from and inspected at the Division.
(e) A record of well installation shall be filed with the Division upon completion of the monitoring wells.
(f) Groundwater quality monitoring wells shall be constructed of materials, and by procedures, approved by the Division.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. September 1, 1990; August 1, 1988; January 1, 1985.

15A NCAC 13B .0602 SURFACE WATER MONITORING
(a) The Division shall require a solid waste management facility to provide such surface water monitoring capability as the Division determines to be necessary to detect the effects of the facility on surface water in the area. In making such a determination, the Division shall consider the following factors:

(1) the design of the facility, the nature of the process it will use, and the type of waste it will handle;
(2) drainage patterns and other hydrological conditions in the area;
(3) nearness of surface water to the facility;
(4) uses that are being or may be made of any surface water that may be affected by the facility; and
(5) any other factors that reasonably relate to the potential for surface water effects from the facility.

(b) Responsibility for sample collection and analysis will be defined as a part of the permit conditions.
(c) Any other information that the Division deems pertinent to the development of a surface water monitoring system will be required.

History Note: Authority G.S. 130A-294; Eff. April 1, 1982.
SECTION .0700 - ADMINISTRATIVE PENALTY PROCEDURES

Rules .0701 -.0707 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0701 -.0707); have been transferred and recodified from Rules .0701 -.0707 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0701 -.0707), effective April 4, 1990.

15A NCAC 13B .0701 ADMINISTRATIVE PENALTIES
The following rules shall govern the assessment, remission, mitigation and appeal of administrative penalties imposed by the Division under the Solid Waste Management Act, Article 9 of Chapter 130A of the North Carolina General Statutes.

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;
Amended Eff. September 1, 1990; October 1, 1984.

15A NCAC 13B .0702 STANDARDS
In determining the amount of the administrative penalty, the Division shall consider the following standards:

(1) Nature of the violation and the degree and extent of the harm, including at least the following:
   (a) For a violation of the Solid Waste Management Act, Article 9 of Chapter 130A of the North Carolina General Statutes, and the rules adopted thereunder:
      (i) type of violation;
      (ii) type of waste involved;
      (iii) duration of the violation;
      (iv) cause (whether resulting from a negligent, reckless or intentional act or omission);
      (v) potential effect on public health and the environment;
      (vi) effectiveness of responsive measures taken by the violator;
      (vii) damage to private property.
   (b) For a violation of an order issued under the Solid Waste Management Act, Article 9 of Chapter 130A of the North Carolina General statutes:
      (i) subject matter of order;
      (ii) duration of the violation;
      (iii) cause (whether resulting from a negligent, reckless or intentional act or omission);
      (iv) type of violation, if any;
      (v) potential effect on public health and the environment;
      (vi) effectiveness of responsive measures taken by violator.
   (c) For refusing to allow an authorized representative of the Commission for Public Health, any local board of health, or the Department a right of entry as provided for in G.S. 130A-17:
      (i) type of previous violation or other violation found after entry, if any;
      (ii) duration of refusal;
      (iii) potential effect on public health and the environment;
      (iv) type of waste handled by violator at the solid waste management facility.

(2) Cost of rectifying any damage.
(3) The violator's previous record in complying or not complying with the Solid Waste Management Act and the regulations promulgated thereunder.

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;
Amended Eff. September 1, 1990; October 1, 1984.

15A NCAC 13B .0703 PROCEDURE FOR ASSESSMENT: REVOCATION OF PERMIT
(a) Depending on the violation involved, the Division may issue a notice of penalty assessment immediately or grant the violator a period of time within which to cease the violation.
(b) For all violations for which a penalty is assessed a notice of such action shall be sent the respondent by registered or certified mail. The notice shall describe the nature of the violation with reasonable particularity, the amount of the penalty for each violation, that each day of a continuing violation constitutes a separate violation, advise that the penalty is now due or that it will become due at the end of a specified time, and advise the respondent of his rights of appeal.
(c) In addition to any assessment that might be appropriate, the Division may suspend or revoke the permit of any facility in accordance with G.S. 130A-23.
(d) The Division or its delegates may modify a penalty upon finding that additional or different facts should have been considered in determining the amount of the assessment or upon finding that the respondent has corrected or mitigated the harm cause by the violation.

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;

15A NCAC 13B .0704  PAYMENTS: HEARING
(a) Within 60 days after receipt of notification of a penalty assessment, payment must be tendered unless a written request for an administrative hearing has been filed pursuant to G.S. 130A-22. All written requests for a hearing shall be made in accordance with G.S. 150B.
(b) Payment may be tendered in conjunction with a hearing request and in such case, the payment shall be accepted as conditional upon final action.
(c) This Rule shall not preclude informal conferences concerning the penalty assessed.
(d) The Division shall acknowledge the receipt of all payments.

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;
Amended Eff. September 1, 1990; February 1, 1988; May 1, 1987.

15A NCAC 13B .0705  STAY OF PENALTY ASSESSMENT
When an administrative hearing is requested for a purpose other than remission or reduction of the penalty assessed, the penalty will be stayed as of the date of receipt of the request by the Office of Administrative Hearings until service of the final decision or other settlement of the matter.

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;

15A NCAC 13B .0706  WAIVER OF ADMINISTRATIVE HEARING
A respondent waives his right to a hearing when he:
(1) submits a written waiver to the Division or its delegates of his right to an administrative hearing;
(2) fails to request a hearing within 30 days of receipt of notice of penalty assessment; or
(3) fails to attend a scheduled administrative hearing.

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;

15A NCAC 13B .0707  REFERRAL

History Note: Authority G.S. 130A-22(f);
Eff. April 1, 1982;
Amended Eff. May 1, 1987;

SECTION .0800 - SEPTAGE MANAGEMENT

Rules .0801 - .0814 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .0801 - .0814); have been transferred and recodified from Rules .0901 - .0914 of Title 10 Subchapter 10G of the North Carolina Administrative Code (T10.10G .0901 - .0914), effective April 4, 1990.
15A NCAC 13B .0801  PREAMBLE

History Note:  Filed as a Temporary Rule Eff. January 20, 1989, For a Period of 180 Days to Expire on July 19, 1989;
Statutory Authority G.S. 130A-291.1;
Eff. March 1, 1989;

15A NCAC 13B .0802  DEFINITIONS
15A NCAC 13B .0803  SEPTAGE MANAGEMENT FIRM PERMITS
15A NCAC 13B .0804  FEES
15A NCAC 13B .0805  SEPTAGE DISPOSAL SITE PERMITS
15A NCAC 13B .0806  STANDARDS
15A NCAC 13B .0807  LOCATION OF SEPTAGE DISPOSAL SITES
15A NCAC 13B .0808  MANAGEMENT OF SEPTAGE DISPOSAL SITES
15A NCAC 13B .0809  SEPTAGE DETENTION SYSTEMS
15A NCAC 13B .0810  SOIL TESTING
15A NCAC 13B .0811  LAND USE AFTER SEPTAGE DISPOSAL
15A NCAC 13B .0812  TRANSPORTATION OF SEPTAGE
15A NCAC 13B .0813  REVOCATION OF PERMITS
15A NCAC 13B .0814  APPEALS

History Note:  Filed as a Temporary Rule Eff. January 20, 1989, For a Period of 180 Days to Expire on July 19, 1989;
Authority G.S. 130A-291.1;
Eff. March 1, 1989;
Amended Eff. September 1, 1990; August 1, 1990; June 1, 1990;

15A NCAC 13B .0815  INCORPORATION BY REFERENCE
15A NCAC 13B .0816  DEFINITIONS

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;

15A NCAC 13B .0817  SEPTAGE MANAGEMENT FIRM PERMITS

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;

15A NCAC 13B .0818  PERMIT FEES

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;

15A NCAC 13B .0819  SEPTAGE LAND APPLICATION SITE PERMITS
15A NCAC 13B .0820  SEPTAGE DETENTION AND TREATMENT FACILITY PERMITS

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;
15A NCAC 13B .0821  LOCATION OF SEPTAGE LAND APPLICATION SITES
15A NCAC 13B .0822  MANAGEMENT OF SEPTAGE LAND APPLICATION SITES
15A NCAC 13B .0823  RECORD KEEPING FOR SEPTAGE MANAGEMENT FIRMS
15A NCAC 13B .0824  SAMPLING AND ANALYSIS

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;

15A NCAC 13B .0825  STANDARDS FOR SEPTAGE TREATMENT AND DETENTION FACILITIES

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;

15A NCAC 13B .0826  LAND USE AND SITE CLOSURE
15A NCAC 13B .0827  TRANSPORTATION OF SEPTAGE
15A NCAC 13B .0828  REVOCATION OF PERMITS
15A NCAC 13B .0829  APPEALS

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 1995;

15A NCAC 13B .0830  INCORPORATION BY REFERENCE
(a)  All Sections of the Code of Federal Regulations (CFR) cited in this Section are hereby incorporated by reference, including subsequent amendments or additions, and may be obtained free of charge at https://www.gpo.gov/fdsys/.
(b)  US Environmental Protection Agency (EPA) and American Society for Testing Materials (ASTM) test methods and procedures, and other published standards referenced in this Section are hereby incorporated by reference, including subsequent amendments or additions.
(c)  Copies of all material incorporated by reference in this Section are available for inspection free of charge at the Department of Environmental Quality Division of Waste Management, Solid Waste Section, 217 West Jones Street, Raleigh, N.C. 27603 or the Division's website at https://deq.nc.gov/about/divisions/waste-management.

History Note:  Authority G.S. 130A-291.1;
Eff. October 1, 2009;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. June 24, 2017;
Amended Eff. February 1, 2019.

15A NCAC 13B .0831  DEFINITIONS
In addition to the terms defined in G.S. 130A-290, as used in this Section the following terms are defined as follows:
(1) "Agronomic rates" means those rates that provide the nitrogen and other nutrient needs of the crop based on available realistic yield expectations (RYE) established for a soil series through published Cooperative Extension Service bulletins, Natural Resources Conservation Service publications, or county soil surveys, but do not overload the soil with nutrients or other constituents that may eventually leach to groundwater, limit crop growth, or degrade soil quality.
(2) "Annual septage application rate" means the maximum amount, in gallons, of septage that may be applied to a unit area of land during a 365-day period.
(3) "Land application" means the spraying or spreading of septage onto the land surface; the injection of septage below the land surface; or the incorporation of septage into the soil so that the septage conditions the soil or fertilizes crops or vegetation grown in the soil.
(4) "Licensed Geologist" means licensed geologist as defined in G.S. 89E-3.
(5) "Licensed Soil Scientist" means licensed soil scientist as defined in G.S. 89F-3.
"Nutrient Management Plan" means a plan to define the management requirements and nutrient needs of crops to be grown on a septage land application site, including the amount, sources, placement, and timing of nutrient applications to maximize the nutrient uptake of the crop. Plan implementation shall protect the environment and maintain crop productivity.

"Place of business" means place of business as defined in G.S. 130A-334.

"Place of public assembly" means place of public assembly as defined in G.S. 130A-334.

"Professional Engineer" means professional engineer as defined in G.S. 89C-3.

"Residence" means residence as defined in G.S. 130A-334.

"Rock" means the consolidated or partially consolidated mineral matter or aggregate, including bedrock or weathered rock, not exhibiting the properties of soil.

"Seasonal High Water Table" or "SHWT" means the highest level of the saturated zone in the soil during a year with normal rainfall. SHWT may be determined in the field through identification of redoximorphic features in the soil profile, monitoring of the water table elevation, or modeling of predicted groundwater elevations.

"Septage Management Facility" means land, personnel, and equipment used in the management of septage, including septage management firms as defined in G.S. 130A-290(a)(33), septage detention and treatment facilities, and septage land application sites.

"Soil" means the unconsolidated mineral and organic material of the land surface. It consists of sand, silt, and clay minerals and variable amounts of organic materials.

"Soil textural classes" means soil classification based upon size distribution of mineral particles in the fine-earth fraction less than two millimeters in diameter. The fine-earth fraction includes sand (2.0 – 0.05 mm in size), silt (0.05 mm – 0.002 mm), and clay (less than 0.002 mm in size) particles. The specific textural classes shall be defined as follows:

(a) "Sand" means soil material that contains 85 percent or more of sand; the percentage of silt plus 1.5 times the percentage of clay less than 15;

(b) "Loamy sand" means soil material that contains 70 to 91 percent sand, and the percentage silt plus 1.5 times the percentage of clay is not less than 15, and the percentage of silt plus twice the percentage of clay is less than 30;

(c) "Sandy loam" means soil material that contains either:
   (i) 7 to 20 percent clay, 52 percent or more sand, and the percentage of silt plus twice the percentage of clay exceeds 30; or
   (ii) less than 7 percent clay, less than 50 percent silt, and more than 43 percent sand;

(d) "Loam" means soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and 52 percent or less sand;

(e) "Silt loam" means soil material that contains either:
   (i) 50 percent or more silt and 12 to 27 percent clay; or
   (ii) 50 to 80 percent silt and less than 12 percent clay;

(f) "Silt" means soil material that contains 80 percent or more silt and less than 12 percent clay;

(g) "Sandy clay loam" means soil material that contains 20 to 35 percent clay, less than 28 percent silt, and more than 45 percent sand;

(h) "Clay loam" means soil material that contains 27 to 40 percent clay and 20 to 46 percent sand;

(i) "Silty clay loam" means soil material that contains 27 to 40 percent clay and 20 to 46 percent sand;

(j) "Sandy clay" means soil material that contains 35 percent or more clay and 45 percent or more sand;

(k) "Silty clay" means soil material that contains 40 percent or more clay and 40 percent or more silt; and

(l) "Clay" means soil material that contains 45 percent or less sand and less than 40 percent silt.

"Treatment of septage" means the preparation of septage for final use or disposal. Treatment may include thickening, stabilization, and dewatering of septage. Treatment shall not include storage of septage.

Definitions in 40 CFR 503.9(d), (g), (h), (j), (k), (l), (r), (t), (u), (v), (w), (bb), and in 40 CFR 503.11(a), (c), (d), (f), (g), (i), (k), (l), (m), (n) are incorporated by reference including subsequent amendments and editions.
GENERAL PROVISIONS

(a) General permitting requirements.

(1) No person shall manage septage, or any part of septage, or operate a Septage Management Firm without first obtaining a permit from the Division as required under G.S. 130A-291.1(c);

(2) The permit requirement of G.S. 130A-291.1(c) applies to persons who remove septage, and other waste materials or spent media from wastewater systems permitted by the Department of Health and Human Services, under the authority of Article 11, Chapter 130A of the North Carolina General Statutes;

(3) The permit requirement of G.S. 130A-291.1(c) applies to persons who manage septage generated from properties that they own, lease, or manage as part of a business, such as mobile homes, mobile home parks, restaurants, and other residential and commercial property;

(4) The Division may deny a permit application in accordance with G.S. 130A-295.3(c);

(5) The Division may require an applicant to demonstrate substantial compliance in accordance with G.S. 130A-294(b2)(2);

(6) Permits issued in accordance with this Section shall be followed;

(7) Where specified in this Section, permit applications or specific portions of applications shall be prepared in accordance with Rule .0202(a)(3) of this Subchapter; and

(8) Initial septage land application site and detention and treatment facility permits shall be valid for one year. Subsequent permits shall be valid for five years. The Division may issue a subsequent permit for less than five years based on any of the following factors:

(A) the duration of the landowner authorization or wastewater treatment plant authorization;

(B) the compliance history of the operator;

(C) if any of the information for the permit application was received after the due date; or

(D) to allow the due date for a subsequent permit application to be the same date as the septage firm permit application due date.

(b) Portable sanitation permitting provisions.

(1) A mobile or modular office that meets the criteria of G.S. 130A-291.2 shall be considered a chemical or portable toilet as defined in G.S. 130A-290(a)(1c). A storage tank at a mobile or modular office shall not release septage onto the ground. The owner and the lessee of the mobile or modular office shall be considered to be the responsible parties and shall be subject to the requirements of Paragraph (a) of this Rule.

(2) No person shall rent or lease portable toilet(s) or contract or subcontract to rent or lease portable toilet(s) to another person or manage or dispose of waste from portable toilet(s), regardless of ownership of the toilet(s), unless that person is permitted to operate a septage management firm.

(3) Placement of a chemical or portable toilet as defined in G.S. 130A-290(a)(1c) for potential use in North Carolina shall be considered operation of a septage management firm that requires a permit.

(c) Recreational vehicle waste provisions.

(1) Domestic septage from a recreational vehicle shall be managed in accordance with this Section or shall flow directly into a wastewater treatment system permitted by the Department of Environmental Quality.

(2) Wastewater from recreational vehicles that are tied down, blocked up, or that are not relocated, and that are not connected to an approved wastewater system shall be managed in accordance with Article 11, Chapter 130A of the NC General Statutes.

(3) Recreational vehicle dump stations that do not discharge directly to a wastewater treatment system permitted by the Department of Environmental Quality shall be permitted as a septage detention and treatment facility in accordance with Rule .0837 of this Section.

(d) Alternate septage management method limitations.

(1) Grease septage, or any part of grease septage, shall not be introduced or reintroduced into a grease trap, interceptor, separator, or other appurtenance used for the purpose of removing cooking oils, fats, grease, and food debris from the waste flow generated from food handling, preparation, and cleanup.
unless the Division has received written approval from the wastewater treatment plant operator or the onsite wastewater system permitting authority that reintroduction is acceptable.

(2) Septage, or any part of septage, shall not be reintroduced into an onsite wastewater system unless approved pursuant to G.S. 130A-343(c).

(3) Septage, or any part of septage, shall not be placed in containers at restaurants designated for yellow grease.

(4) Septage, or any part of septage, shall not be disposed of in a municipal solid waste landfill unless the waste passes the Paint Filter Liquids Test as defined by EPA S.W. 846 Test Method 9095B which can be accessed at no cost at https://www.epa.gov/hw-sw846, and the landfill receiving the waste has provided the Division written documentation that the specific material will be accepted.

(5) Septage, or any part of septage, shall not be disposed of in a dumpster unless the waste passes the Paint Filter Liquids Test and the landfill receiving the waste is a permitted municipal solid waste landfill, in accordance with Section .1600 of this Subchapter.

(6) Septage, or any part of septage, managed through subsurface disposal shall be considered a treatment facility and shall require a permit in accordance with this Section and G.S. 130A-343.

(7) Facilities receiving septage, or any part of septage, for composting shall be permitted in accordance with Section .1400 of this Subchapter.

(e) All training to meet the requirements of G.S. 130A-291.3(a) and (b) shall be pre-approved by the Division. Approval by the Division shall be based on whether the training is in accordance with the rules in this Section.

(f) Waste from holding tanks not otherwise addressed in this Section, and from wastewater systems pumped more often than every 30 days, shall not be considered domestic septage and shall not be land applied at a permitted septage land application site.

(g) Inspection and entry. The permit holder of a septage management firm or facility shall allow a representative of the Division to:

1. enter the permit holder’s premises where a regulated facility or activity is located or conducted;
2. access and copy any records required in accordance with this Section or conditions of the permit;
3. inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated by the Division;
4. sample or monitor for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or the North Carolina Solid Waste Management Act, any substances, parameters, or soils at any location; and
5. photograph for the purpose of documenting times of compliance or noncompliance at septage management facilities or to require the permit holder to make such photos for the Division.

(h) Washings from the interior of septage handling containers such as pump trucks shall be managed as septage.

History Note: Authority G.S. 130A-291.1; 130A-291.2; 130A-295.3(c); 130A-335; Eff. October 1, 2009; Amended Eff. January 1, 2014; Readopted Eff. February 1, 2019.

15A NCAC 13B .0833 PERMIT FEES

(a) Every septage management firm shall pay an annual permit fee by January 1 of each year in accordance with G.S. 130A-291.1(e) or (e1), unless the firm notifies the Division prior to January 1 that the firm will not operate during the next year. Fees shall be paid to the Division of Waste Management, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

(b) Annual fees are not pro-rated and shall not be refunded or credited to a subsequent year.

(c) Failure to apply for permit renewal or failure to pay the permit fee by January 1 shall result in assessment of a late fee in accordance with G.S. 130A-291.1(e2). Failure to pay the appropriate fees within 45 days after January 1 shall result in an additional administrative penalty pursuant to G.S. 130A-22(a) of ten dollars ($10.00) per day for each day thereafter that the fees are not paid.

(d) Annual permit renewal, including fee payment, shall be the responsibility of the operator of the septage management firm. If the operator did not receive annual permit renewal forms, it shall not be a defense to assessment of late fees.

(e) A food service facility that is permitted to operate a septage detention facility in accordance with Rules .0834 and .0837 of this Section and that has paid the fee specified in G.S. 130A-291.1(e1) shall be allowed to empty their own grease interceptors, separators, traps, or other appurtenances used for the purpose of removing cooking oils, fats, grease,
and food debris from the waste flow generated from food handling, preparation, and cleanup, that have a volume of 25 gallons or less, into the permitted detention facility. The permitted facility shall be constructed and located in accordance with the requirements of Rule .0838 of this Section and emptied at least quarterly by a permitted septage management firm.

**History Note:** Authority G.S. 130A-291.1; Eff. October 1, 2009; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0834).

### 15A NCAC 13B .0834 SEPTAGE MANAGEMENT FIRM PERMITS

(a) Septage management firm names shall be distinguishable upon the records of the Division from the name of other septage management firms, limited liability companies, non-profit corporations, business corporations, limited partnerships, sole proprietors, general partners, and limited liability partnerships operating in North Carolina. Naming preference shall be given to companies that are listed as incorporated with the NC Secretary of State's office.

(b) A person who has not operated a septage management firm during the previous calendar year shall obtain four hours of new operator training from the Division prior to receiving a permit to operate a septage management firm.

(c) To apply for a permit, a person proposing to operate a septage management firm shall submit the following information to the Division by January 1 of each year:

1. owner's name, address, and phone number;
2. business name, address, and phone number;
3. operator name, address, and phone number, if different from owner;
4. permit number, if existing firm;
5. type(s) of septage handled, and the quantity pumped the previous 12 months, if in operation;
6. number of pumper trucks;
7. capacity and type of septage handled by each pumper truck;
8. vehicle license and serial numbers of each pumper truck;
9. counties in which the firm operates;
10. disposal method(s) for septage;
11. permit number for each septage land application site to be used;
12. permit number for each septage detention and treatment facility to be used;
13. any other information that the Division may request that is pertinent to the operation of a septage management firm if it is necessary to determine compliance with the rules of this Section;
14. written authorization on official letterhead or a notarized wastewater treatment plant authorization form shall be submitted from an individual responsible for the operation of each wastewater treatment plant used for disposal indicating:
   (A) type(s) of septage that may be discharged at the plant;
   (B) where septage, including grease septage, may be discharged at the plant or in the collection system;
   (C) geographic area from which septage will be accepted; and
   (D) duration of authorization;
15. the appropriate annual permit fee in accordance with G.S. 130A-291.1(e); and
16. the date, location, number of hours, and provider of annual septage management firm training required in accordance with G.S. 130A-291.3(a).

(d) Persons that operate a septage land application site or a septage treatment and detention facility, but do not pump septage, shall submit the following information to the Division by January 1 of each year to apply for a permit:

1. facility name, address, phone number, and county;
2. owner's name, address, and phone number;
3. operator name, address, and phone number, if different from owner;
4. permit number, if existing firm;
5. type(s) of septage managed;
6. facility types and their permit numbers;
7. the name and permit number of all permitted septage management firms using the facility;
8. the date, location, number of hours, and provider of annual training in accordance with G.S. 130A-291.3(b); and
9. the appropriate annual permit fee in accordance with G.S. 130A-291.1(e1).
(e) A septage management firm permit shall not be issued unless the applicant has submitted to the Division written documentation of authorized access to dispose or otherwise manage septage, or any part of septage, at a wastewater treatment plant, a permitted septage land application site, a permitted septage treatment facility, or other permitted solid waste management facility. Documentation from each plant, site, or other facility shall include the types and amount of septage that may be discharged.

(f) Septage management firm permits shall not be issued until all parts of the application have been completed.

(g) Prior to the issuance of a septage management firm permit to firms that pump septage, all pumper trucks for the firm shall be inspected and approved by the Division for compliance with Rule .0835 of this Section.

(h) Permits shall not be transferable.

(i) Septage management firm permits issued on or after January 1 shall be effective until December 31 of that calendar year.

History Note: Authority G.S. 130A-291.1; Eff. November 1, 2009; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0833).

15A NCAC 13B .0835 TRANSPORTATION OF SEPTAGE

(a) Vehicles used for the transportation of septage shall be operated and maintained to prevent leaks and spills of septage and shall comply with the following:

1. all tanks shall be constructed of metal and affixed to the truck bed with permanent fixtures such as bolts;
2. all valves shall be in working order and be closed during transportation;
3. all access ports shall have lids in good repair in accordance with manufacturer specifications and sealed during transportation;
4. portable toilet pump units that slide into pickup truck beds shall be bolted to the trucks in accordance with manufacturer specifications;
5. boats used to pump or transport septage shall be United States Coast Guard approved or construction plans shall be available indicating that the specific craft is stable in the water when fully loaded with septage, and if required by G.S. 89C, a professional engineer shall prepare these documents; and
6. tanks that are mounted on trailers for the pumping or transportation of septage shall meet all applicable State and federal requirements for highway use.

(b) All permitted septage management firms shall display lettering on each side of every pumper vehicle operated by the firm. The lettering shall include the firm name, town name, phone number, and septage management firm permit number as shown on the firm application. All lettering required by this Rule on the pumper vehicle shall be no less than three inches in height and legible, distinguishable from the background, and not obstructed from view. Identification shall not be removable (i.e. no magnetic signs).

(c) Applicants for septage management firm permits that were not permitted in the previous calendar year shall have each pump truck inspected prior to the Division's issuance of a permit.

(d) Septage to be discharged at a wastewater treatment plant or any part of the collection system for that plant shall be handled in accordance with the plant rules and policies.

(e) All vehicles used in the transportation of septage, including spare vehicles and tankers, shall meet the requirements of this Section and be included in the permit application.

(f) Vehicles used in the transportation of septage, that are listed on an approved septage management firm permit application, may remain loaded or partially loaded on land owned by the septage management firm for up to seven days without obtaining a permit for a detention or treatment facility. Such vehicles shall comply with this Rule.

History Note: Authority G.S. 130A-291.1; Eff. October 1, 2009; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0844).

15A NCAC 13B .0836 RECORD KEEPING FOR SEPTAGE MANAGEMENT FIRMS

(a) Each permit holder shall maintain a log that includes the following information for each septage pumping event:

1. the date, type, quantity, and location of septage pumped; the location for tanks shall be a street address and the location for portable toilets shall be a route; and
2. location of the discharge of the septage.
(b) A septage management firm shall make all records, documents, or logs required in accordance with this Section or conditions of the permit available for review by the Division at the time and place of an inspection of the firm's septage pumper truck(s) or upon the Division's request.

History Note: Authority G.S. 130A-291.1; Eff. October 1, 2009; Readopted Eff. February 1, 2019 (Recodified 15A NCAC 13B .0839).

15A NCAC 13B .0837  SEPTAGE DETENTION AND TREATMENT FACILITY PERMITS
(a) No person shall establish, or allow to be established upon any real property owned, operated, leased, or controlled by that person, a septage detention and treatment facility, unless a permit has been obtained from the Division or the facility is operating in accordance with a NPDES permit issued by the NC Division of Water Resources.
(b) Septage detention and treatment facilities shall be designed, located, constructed, and operated in accordance with the standards specified in Rule .0838 of this Section.
(c) To apply for a permit to operate a septage detention facility the applicant shall submit the following information to the Division:
   (1) name, address, and phone number of
      (A) the applicant;
      (B) the landowner or the landowner's legal representative in control of the site; and
      (C) the proposed operator;
   (2) location of the facility;
   (3) vicinity map or county road map showing the site location;
   (4) types of septage to be stored or treated;
   (5) a description of the facility including the size, number, and type of structures to be used at the site and construction materials to be used;
   (6) an explanation of the methods for discharge into and removal from the detention or treatment facility, the methods for treating leaks or spills at the site, and methods for odor control;
   (7) septage land application site permit number and the name of any wastewater treatment plant(s) where the septage will be disposed;
   (8) written documentation of approved locations to manage any solid or liquid wastes generated at a treatment facility;
   (9) an aerial photograph, extending for a distance of at least 1,000 feet in all directions from the site property lines;
   (10) written authorization to operate a septage detention or treatment facility signed by each landowner (if other than the permit holder) or the landowner's legal representative;
   (11) any other information that the Division may request that is pertinent to the suitability of the proposed facility if it is necessary to determine compliance with this Section; and
   (12) an approval letter from the unit of local government having zoning authority over the area where the facility is to be located, stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned.
(d) Treatment of septage shall include aerobic or anaerobic digestion, dewatering or thickening, pressing, centrifuging, the use of organisms or enzymes, and pathogen reduction methods or vector attraction reduction methods other than lime stabilization.
(e) To apply for a permit to operate a septage treatment facility, plans and specifications shall be submitted. If required by G.S. 89C, a professional engineer shall prepare these documents. The plans shall include the information set forth in Paragraph (c) of this Rule and the following:
   (1) site plan at a scale appropriate to show the detail of the facility, but in no case greater than 100 feet per inch;
   (2) engineering plans for the entire system, including treatment, storage, and disposal equipment, and containment structures;
   (3) drawings that shall be at a scale appropriate to show pumps, tanks, valves, controls, meters, pipes, and other items critical to the operation of the facility. As-built drawings shall be submitted if the facility construction is not consistent with the initial drawings;
   (4) an operation and maintenance manual signed by the applicant outlining information and instruction on how the facility is to be operated, equipment maintenance, minimization of odors, required safety and
personnel training, and an outline of reports to be submitted to the Division. Contingency plans shall be included to address at least equipment failure, human error, inclement weather, and spill and leak cleanup;

(5) a quality assurance plan signed by the applicant for the process and final product if treatment involves meeting pathogen reduction or vector attraction reduction standards.

(6) compliance history for the facility showing no unresolved violations of Federal, State, or local laws, rules, regulations, or ordinances; and

(7) certification that the construction of the treatment facility is complete and consistent with the plans submitted in accordance with this Paragraph;

[Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter and resolution dated March 11, 2010, that preparation of engineering design documents pursuant to this Paragraph constitutes practicing engineering under G.S. 89C.]

(f) A permit to operate a new septage detention and treatment facility shall not be issued until the proposed site has been approved by the Division. Approval by the Division shall be based on whether the facility is in accordance with the rules of this Section.

(g) Operation of a new septage detention or a new septage treatment facility shall not commence until the facility has been inspected by the Division and found to be consistent with the permit application.

(h) A permit to operate a treatment facility shall not be issued until the facility has been inspected by the Division and found to be consistent with the permit application and operation has been found to be consistent with the operation and maintenance manual.

(i) Application packages for permit renewals for septage treatment facilities shall include:

(1) updated drawings, if there are changes to the facility;
(2) updated site plans, if there are changes to the initial site plan;
(3) updated operation and maintenance manual, if there are changes to the operation and maintenance manual; and
(4) updated quality assurance plan, if there are changes to the quality assurance plan.

(j) Engineering plans and specifications for marina detention tanks that do not meet the minimum setbacks in Rule .0838(m) of this Section or are located below grade shall be submitted. If required by G.S. 89C, a professional engineer shall prepare these documents. The facilities shall be certified to be constructed in substantial compliance with the plans and specifications submitted in accordance with this Rule. If required by G.S. 89C, a professional engineer shall certify this compliance. [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter and resolution dated March 11, 2010, that preparation of engineering design documents pursuant to this Paragraph constitutes practicing engineering under G.S. 89C.]

(k) Parts of detention and treatment facilities located below grade and lagoons shall be certified to be constructed in substantial compliance with the plans and specifications submitted in accordance with this Rule. If required by G.S. 89C, a professional engineer shall certify this compliance. [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter and resolution dated March 11, 2010, that preparation of engineering design documents pursuant to this Paragraph constitutes practicing engineering under G.S. 89C.]

(l) Applications shall be submitted to the Division of Waste Management, Solid Waste Section, 1646 Mail Service Center, Raleigh NC 27699-1646. Applications for permits will not be reviewed until all parts of the application have been completed and submitted to the Division.

(m) Applications for renewal permits shall be submitted to the Division at least 90 days prior to the expiration of the permit. The Division shall notify permit holders of facility permit expiration dates 120 days prior to permit expiration.

(n) Applications for renewal permits submitted in accordance with Paragraphs (i) and (m) of this Rule and applications for permit modifications shall not be required to resubmit the information required in Subparagraphs (c)(3) and (9), and Paragraph (d) of this Rule unless changes are made in those plans.

(o) Septage detention and treatment facility permits shall not be transferable.

(p) Permit duration shall be in accordance with Rule .0832(a)(8) of this Section.

(q) Applications for permit modifications shall be required for the following changes:

(1) property ownership;
(2) treatment methods;
(3) types of septage to be stored or treated; or
(4) size and number of treatment or storage structures.

(r) Applications for facilities that do not meet the standards set forth in this Section shall be denied.
An application requesting reduced setbacks in accordance with Rule .0838(m)(7) of this Section shall include a letter from the appropriate local zoning office approving proposed reduced setbacks.

History Note: Authority G.S. 130A-291.1;
Eff. April 1, 2010;
Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0836).

15A NCAC 13B .0838 STANDARDS FOR SEPTAGE DETENTION AND TREATMENT FACILITIES
(a) Septage detention facilities used to meet the requirements of Rule .0842(a)(19) of this Section shall have a minimum size equal to two percent of the maximum annual application rate. The Division shall increase the minimum size requirement for any increase in the maximum annual application rate or if it is demonstrated during site operation that this volume is inadequate or if specific site considerations would warrant such increases. The Division shall notify the owner or operator of the facility of the increase. This Paragraph does not limit the maximum capacity of a septage detention facility.
(b) Each site shall have an all weather access road.
(c) Septage treatment and detention facility containers shall be constructed of steel, concrete, plastic, or fiberglass; and shall be free of evidence of damage or weakness such as holes or cracks that may allow the escape of septage.
If required by G.S. 89C, plans and specifications for proposed containers constructed of materials not specifically addressed in this Rule shall be prepared by a professional engineer. [Note: The North Carolina Board of Examiners for Engineers and Surveyors, has determined, via letter and resolution dated March 11, 2010, that certification of documents pursuant to this Paragraph constitutes practicing engineering, under G.S. 89C.]
(d) A septage treatment and detention facility permit holder and operator shall be responsible for the actions of any septage management firm that uses the detention or treatment facility.
(e) Each detention and treatment facility shall be designed, constructed, and maintained to:
   (1) prevent leaks or the flow of septage out of the facility into the seasonally high water table, onto the ground surface, or into any surface waters;
   (2) minimize the attraction or admittance of vectors; and
   (3) prevent unauthorized entry into septage containers or lagoons.
(f) Septage detention and treatment facilities located below grade shall:
   (1) be constructed in substantial compliance with the plans and specifications prior to any waste being introduced into the system. If required by G.S. 89C, a professional engineer shall certify this compliance. [Note: The North Carolina Board of Examiners for Engineers and Surveyors, has determined, via letter and resolution dated March 11, 2010, that certification of documents pursuant to this Paragraph constitutes practicing engineering, under G.S. 89C.];
   (2) be constructed to a traffic rated standard or protected from vehicular traffic; and
   (3) not be constructed of used metal tanks. Used metal tanks may be located beside a wall or embankment for gravity access as long as the entirety of the tank is visible.
(g) The permit holder of a septage treatment or detention facility shall minimize odors from the facility at the property boundary.
(h) The Division may require that groundwater monitoring wells or a leak detection system be installed around treatment or detention systems for protection of public health and the environment if there is evidence of a leaking tank.
(i) The area around tanks shall be free of debris and vegetation to allow for access and inspection for a distance of 5 feet.
(j) Septage shall be transferred to and from a detention system in a manner that prevents leaks or spills of septage onto the ground surface or exterior surface of the detention system, including septage in pipes used for transferring waste to and from vehicles.
(k) Access roads or paths crossing or leading to the facility shall be posted with "NO TRESPASSING" signs.
(l) Requirements for lined lagoons:
   (1) Lined lagoons shall be permitted only at sites where the construction and use of a lagoon does not jeopardize the public health or environment.
   (2) Portions of lined lagoons located below grade shall be in substantial compliance with the plans and specifications prior to any waste being introduced into the system. If required by G.S. 89C, a professional engineer shall certify this compliance. [Note: The North Carolina Board of Examiners for Engineers and Surveyors, has determined, via letter and resolution dated March 11, 2010, that certification of documents pursuant to this Paragraph constitutes practicing engineering, under G.S. 89C.];
(3) Only lagoons designed, constructed and inspected in accordance with accepted engineering principles providing for the protection of the underlying groundwater will be considered for use in a septage treatment or detention system. If required by G.S. 89C, a professional engineer shall certify that the construction was completed in substantial compliance with the plans and specifications prior to any waste being introduced into the system. [Note: The North Carolina Board of Examiners for Engineers and Surveyors, has determined, via letter and resolution dated March 11, 2010, that certification of documents pursuant to this Paragraph constitutes practicing engineering under G.S. 89C.]

(4) Liners shall be a minimum of 12 inches of clay compacted to a maximum permeability of $10^{-7}$ cm/sec or equivalent synthetic liner.

(5) Synthetic liners shall have a minimum thickness of 30 mils. A synthetic liner shall have a demonstrated water vapor transmission rate of not more than 0.03 gm/m²/day. Liner material and any sealing materials shall have chemical and physical resistance not adversely affected by environmental exposure or waste placement.

(6) Clay liners with a permeability more than $10^{-7}$ cm/sec may be used in conjunction with a synthetic liner to meet the maximum permeability of $10^{-7}$ cm/sec or equivalent.

(7) The surface of the supporting soil on which the liner will be installed shall be free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could affect the integrity of the liner.

(8) Lagoons shall be designed and maintained to have adequate storage to handle the additional water from a 25-year storm.

(9) Lagoons shall be protected from entry by unauthorized individuals by fencing or other means.

(m) Septage detention and treatment facilities shall adhere to the following minimum setback requirements:

1. residence, place of business, except septage firm business, or place of public assembly – 100 feet;
2. well or water supply spring – 100 feet;
3. surface waters – 100 feet;
4. property lines – 50 feet;
5. facilities permitted after April 1, 2010 shall not be located in the 100-year flood plain hazard area;
6. soil wetness, as determined in of Rule .0841(a)(3)(A) of this Section – 12 inches;
7. setbacks in Subparagraphs (1) and (4) of this Paragraph may be in accordance with local zoning ordinances if located in areas zoned for industrial use;
8. setbacks in Subparagraphs (1) through (4) of this Paragraph shall be increased 100% for lagoons; and
9. accurate property line location shall be the responsibility of the site operator.

(n) At the time of initial permitting, septage detention and treatment facilities shall observe the minimum setback distances specified in this Rule. Minimum setbacks shall be maintained throughout the life of the facility only on land owned, operated, or controlled by the permittee or by the landowner(s) at the time of initial permitting. Any sale, lease, or other conveyance of land by the permittee, or by the landowner(s) if different from the permittee, subsequent to the initial permitting of the facility shall include restrictions to ensure continued maintenance of the setbacks.

(o) The setbacks in Subparagraph (m)(1) through (4) of this Rule shall be increased for storage facilities with a capacity in excess of 25,000 gallons permitted after April 1, 2010 to prevent offsite contamination from major spills, or 100% containment shall be provided. Increased setbacks shall be twice the minimum distance as indicated in Subparagraph (m)(1) through (4) of this Rule, unless the permitted volume and the proximity to residences, wells or water supply springs, surface waters, or property lines dictate a reduced setback determined by the Division on a case-by-case basis.

(p) Storage containers for individual restaurants shall be:

1. located above grade and protected from vehicular traffic;
2. kept free of grease on the exterior surface of the container and the ground surface, maintained to be impervious to flies, and shall not attract vectors;
3. placed at a location and acceptable to and determined by the local health department and the NC Department of Health and Human Services; and
4. no greater than 200 gallons in size.

(q) Setbacks for detention tanks at marinas may be reduced for storage capacity of 2000 gallons or less when the facility is designed to prevent leaks or spills or has containment equaling 100% of the storage volume plus rainfall from a 25-year storm event. Setbacks shall in no case be less than what is approved by applicable local government, State, or federal laws or rules.

(r) Permit holders of all septage detention and treatment facilities shall have all records required in accordance with this Section available for review during inspections by the Division or upon the Division's request.
(s) Septage shall not be stored or treated at a new septage treatment or detention facility until a representative of the Division has inspected the facility to determine compliance with these Rules and consistency with the permit application and all permit conditions.

(t) Septage detention and treatment facility closure shall include:
   1. a written notification of cease of operations submitted to the Division that shall include the permit number, the date of cease of operations, and the signature of the operator;
   2. all liquids and solids, resulting from septage detention or treatment, removed from all portions of the facility and managed or disposed at an approved facility; and
   3. all parts of the facility removed from property under separate ownership, unless all landowners provide the Division with written documentation that the facility may remain at the site.

(u) Record keeping for detention facilities that receive septage from more than one septage management firm shall include:
   1. the date that the septage is received at and removed from the facility;
   2. name of the septage management firm that delivered the septage;
   3. type and amount, in gallons, of septage received; and
   4. where septage is discharged.

(v) Record keeping for treatment facilities shall include:
   1. date septage is received at the facility;
   2. name of the septage management firm that delivered the septage;
   3. type and amount, in gallons, of septage received;
   4. date processed material(s) is removed from the facility;
   5. type and amount, in tons or gallons, of material removed from the facility; and
   6. management methods for each type of material removed by the facility.

(w) Alarms shall be required to detect high liquid levels, leaks and spills, or system operation parameters at detention or treatment facilities when the location, design, capacity, or operational complexities of the facility warrant the additional safety precautions.

History Note: Authority G.S. 130A-291.1;
Eff. April 1, 2010;
Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0841).

15A NCAC 13B .0839 INNOVATIVE OR ALTERNATIVE TREATMENT OR STORAGE METHODS

(a) Applications for permits for innovative or alternative treatment, storage, or land application methods that do not fit the criteria outlined in this Section shall be reviewed in accordance with G.S. 130A-291.1(i).

(b) Applications shall include:
   1. the information required in Rule .0837(c) of this Section;
   2. an operation and maintenance manual consistent with the requirements of Rule .0837(e)(4) of this Section;
   3. means of demonstrating that the proposed method of treatment or storage will meet the appropriate standards for vector attraction reduction and pathogen reduction in this Section; and
   4. testing methods and schedule to document Subparagraph (3) of this Paragraph.

If required by G.S. 89C, a professional engineer shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via letter dated March 11, 2010, that preparation of engineering design documents for alternative treatment methods that do not fit the criteria outlined in this Section constitutes practicing engineering under G.S. 89C.]

(c) Innovative or alternative design criteria shall be approved in cases where the applicant can demonstrate that the alternative design criteria will provide the following:
   1. equal or better treatment of the waste;
   2. equal or better protection of the waters of the state; and
   3. no increased potential for nuisance conditions from noise, odor, or vermin.

History Note: Authority G.S. 130A-291.1;
Eff. April 1, 2010;
Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0842).
15A NCAC 13B .0840  SEPTAGE LAND APPLICATION SITE PERMITS

(a) No person shall establish, or allow to be established upon any real property owned, operated, leased, or controlled by that person, a septage management facility to treat, manage, store, or dispose of septage, or any component of septage, unless a permit has been obtained from the Division. Septage shall not be disposed of by trenching or burial.

(b) Any person that has not operated as a septage land application site during the previous calendar year shall receive at least three hours of new land application site operator training from the Division prior to receiving a permit to operate a septage land application site.

(c) To apply for a permit for a septage land application site, the following information shall be submitted to the Division:

(1) name, address, and phone number of:
   (A) the applicant;
   (B) the landowner or the landowner's legal representative in control of the site; and
   (C) the proposed operator;

(2) location of the site;

(3) types of septage and the proposed annual volume of each type of septage proposed for land application per acre, based on the nutrient management plan submitted in accordance with Subparagraph (c)(12) of this Rule;

(4) substances other than septage previously disposed of at this location, and the amounts of those substances;

(5) aerial photography extending for a distance of at least 2500 feet in all directions from the site, with site property boundaries depicted;

(6) alternative plan for the detention or disposal of septage, during conditions that cause the site to be unavailable for use, such as adverse weather conditions;

(7) treatment method for each type of septage to be discharged and the permit number of any treatment facilities;

(8) a written report that documents compliance with Rule .0841 of this Section including:
   (A) a representative soils analysis such as the Standard Soil Fertility Analysis, conducted within the last six months, on each proposed field of each proposed land application site. The representative soils analysis shall include acidity, base saturation (by calculation), calcium exchange capacity, exchangeable sodium percentage (by calculation), magnesium, manganese, percent humic matter, pH, phosphorus, potassium, and sodium, and may include additional analyses;
   (B) a total metal analysis for each proposed field shall be conducted for arsenic, cadmium, copper, lead, nickel, selenium, and zinc. A North Carolina Department of Agriculture & Consumer Services (NCDA & CS) mehlich-3 extraction shall be an acceptable substitute for a total metal analysis. Mercury shall be sampled if the applicant proposes to land apply domestic or industrial or commercial treatment plant septage, or if warranted by previous site use;
   (C) field description of soil profile(s), based on examinations of excavation pits and auger borings, within four feet of the land surface or to bedrock describing the following parameters by individual diagnostic horizons: thickness of the horizon; texture; color and other diagnostic features; structure; internal drainage; depth, thickness, and type of restrictive horizon(s); and presence or absence and depth of evidence of any seasonal high water table. Applicants may be required to dig pits when necessary for evaluation of the soils at the site;
   (D) a soil map delineating major soil mapping units within each proposed land application site and showing all physical features, location of pits and auger borings, setbacks required in accordance with this Section, legends, scale, and a north arrow;
   (E) if the annual application rate is proposed to exceed 125,000 gallons per acre per year, field descriptions to a depth of six feet shall be required; and
   (F) Global Positioning System (GPS) data compatible with the Division's datalogger shall be provided for proposed sites 30 acres or more in size.

If required by G.S. 89F, G.S. 89C, and G.S. 89E, a licensed soil scientist, professional engineer, or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Licensing of
Soil Scientists, Board of Examiners for Engineers and Surveyors, and the Board of Licensing of Geologists has determined, via letters dated November 16, 2009, March 11, 2010, and January 7, 2010, that preparation of documents pursuant to this Paragraph constitutes soil science, practicing engineering, or geology under G.S. 89F, G.S. 89C, and G.S. 89E.

(11) applicants proposing to land apply 200,000 gallons per acre per year or more shall provide a plan for monitoring soil moisture levels and the depth to seasonal wetness to determine when land application may occur without impacting groundwater or hydraulic overloading. The plan shall include recommendations concerning annual and instantaneous loading rates of liquids, solids, other wastewater constituents, and amendments based on in-situ measurement of saturated hydraulic conductivity in the most restrictive horizon. If required by G.S. 89C, G.S. 89F, and G.S. 89E, a professional engineer, licensed soil scientist, or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors, Board of Licensing of Soil Scientists, and the Board of Licensing of Geologists has determined, via letters dated March 11, 2010, November 16, 2009, and January 7, 2010, that preparation of documents pursuant to this Paragraph constitutes practicing engineering, soil science, or geology under G.S. 89C, G.S. 89F, and G.S. 89E.]

(12) a nutrient management plan prepared by an environmental professional that shall include the following:

(A) crops that will be planted on the site, including cover crops, and where each crop will be planted. Crop planting locations shall be depicted on an aerial photograph or on a plat map;
(B) nitrogen needs of the crops based on the realistic yield expectations for the soils on the site, and crop management practices proposed;
(C) crop stand density required to meet the realistic yield expectations for the proposed crop;
(D) approximate crop planting times and the seeding or spripping rates for crops to be established;
(E) crop harvest frequency appropriate for the proposed realistic yield expectations and nitrogen needs, and approximate crop harvest times;
(F) approximate monthly discharge rate to match the nitrogen needs and potential uptake of the crop;
(G) sites proposed to receive more than 50,000 gallons per acre per year of domestic or industrial or commercial treatment plant septage, or domestic or grease septage that has been treated to remove solids, fats, oils, and grease shall include nitrogen carry over when determining annual application rates;
(H) weed control recommendations;
(I) crop use or removal;
(J) results from at least four samples of treated septage if the application is proposing an increased application rate for the land application of septage treated to reduce nutrients; and
(K) the signature of the site operator.

For the purposes of this Rule, an environmental professional means a person who has received a post-secondary degree from a college or university and has training and experience in or related to agronomic principles utilized to manage wastewater. Preparation by an environmental professional shall not be required for nutrient management plans for renewal applications that do not contain changes that would affect nutrient uptake.

(13) application rates for sites proposed to receive treated septage shall be determined based on the most limiting nutrient;

(14) erosion and runoff management plan showing:

(A) buffer locations and widths based on the direction and amount of slope adjacent to the land application site;
(B) vegetation type and stand density in the buffer areas; and
(C) buffer maintenance fertility requirements.

(15) proposed land application method;

(16) proposed distribution plan if required in Paragraph (e) of Rule .084 of this Section;

(17) sites proposing to use spray irrigation as a land application method shall include:

(A) the location of all fixed irrigation heads or the location of traveling gun irrigation lanes;
irrigation head spacing and traveling gun lane spacing shall be determined based on standards in NC Cooperative Extension Documents AG-553-6 and AG-553-7 which are hereby incorporated by reference including subsequent amendments and additions;

the size of all spray nozzles;

system operating pressure at the irrigation head;

calculation of the wettable acres vs. permitted acreage;

 calibration methods and frequency; and

irrigation system operation and maintenance plan.

(18) documentation from the Department of Natural and Cultural Resources that the land application site complies with Rule .0841(g) of this Section if any part of the site specified for land application is not agricultural land;

(19) the date, location, number of hours, and provider of annual septage land application site operator training required in accordance with G.S. 130A-291.3(b);

(20) any other information that the Division may request that is pertinent to the suitability of the proposed site if it is necessary to determine compliance with this Section;

(21) an applicant who proposes to land apply septage on a public contact site, shall provide the Division evidence of public notice and the applicant shall have completed the Land Application of Residuals Course and maintain a Land Application of Residuals Certificate issued by the Department of Environmental Quality;

(22) an applicant who proposes to land apply industrial or commercial treatment plant septage or domestic treatment plant septage shall have completed the Land Application of Residuals Course and maintain a Land Application of Residuals Certificate issued by the Department of Environmental Quality;

(23) an applicant who proposes to land apply septage in excess of 50,000 gallons per acre per year shall provide the Division with evidence of public notice which shall at a minimum be publication with a local news organization, and shall have completed the Land Application of Residuals Course and maintain a Land Application of Residuals Certificate issued by the Department of Environmental Quality; and

(24) an approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the proposed facility meets all of the requirements of the local zoning ordinance, or that the site is not zoned.

(d) The Division shall not issue a permit to land apply septage at a rate in excess of 50,000 gallons per acre per year or a permit to land apply domestic treatment plant septage or industrial or commercial treatment plant septage until the applicant has operated a septage land application site in accordance with this Section for at least a 12 month period.

(e) Applications for permits issued in accordance with this Rule shall be submitted to the Division of Waste Management, Solid Waste Section, 1646 Mail Service Center, Raleigh NC 27699-1646. Applications for permits will not be reviewed until all parts of the application have been completed and submitted to the Division.

(f) Applications for permits that do not meet the standards in accordance with this Section shall be denied.

(g) Applications for renewal permits issued in accordance with this Rule shall be submitted to the Division at least 90 days prior to the expiration date of the permit. The Division shall notify permit holders of facility permit expiration dates 120 days prior to permit expiration.

(h) Applications for permit modification shall be required for the following changes:

(1) permitted area or field boundaries;

(2) property ownership;

(3) annual application rates;

(4) receiver crop; or

(5) types of septage discharged.

(i) Applications for renewal permits submitted in accordance with Paragraph (g) of this Rule and applications for permit modifications shall not be required to resubmit the information required in Subparagraphs (c)(6), (8), (9), (10), (16), (17), and (18) unless changes are made in those plans.

(j) Septage land application site permits shall not be transferable.

(k) Permit duration shall be in accordance with Rule .0832(a)(8) of this Section.

History Note:  Authority G.S. 130A-291.1; Eff. April 1, 2010; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0835).
LOCATION OF SEPTAGE LAND APPLICATION SITES

(a) Soil characteristics (Morphology) that shall be evaluated are as follows:

1. Texture – The relative proportions of the sand, silt, and clay sized mineral particles in the fine-earth fraction of the soil are referred to as soil texture. The texture of the different horizons of soils shall be classified into three general groups and 12 soil textural classes based upon the relative proportions of sand, silt, and clay sized mineral particles.

   (A) Soil Group I – Sandy Texture Soils: The sandy group includes the sand and loamy sand textural classes.
   (B) Soil Group II – Coarse Loamy and Fine Loamy Texture Soils: The coarse loamy and fine loamy group includes sandy loam, loam, silt, silt loam, sandy clay loam, clay loam, and silty clay loam textural classes.
   (C) Soil Group III – Clayey Texture Soils: The clayey group includes sandy clay, silty clay, and clay textural classes.

2. The soil textural class shall be determined in the field by hand texturing samples of each soil horizon in the soil profile using the following criteria:

   (A) Sand: Sand has a gritty feel, does not stain the fingers, and does not form a ribbon or ball when wet or moist;
   (B) Loamy Sand: Loamy sand has a gritty feel, stains the fingers, forms a weak ball, and cannot be handled without breaking;
   (C) Sandy Loam: Sandy loam has a gritty feel and forms a ball that can be picked up with the fingers and handled with care without breaking;
   (D) Loam: Loam may have a slightly gritty feel but does not show a fingerprint and forms only short ribbons of from 0.25 inch to 0.50 inch in length. Loam forms a ball that can be handled without breaking;
   (E) Silt Loam: Silt loam has a floury feel when moist and shows a fingerprint but does not form a ribbon and forms only a weak ball;
   (F) Silt: Silt has a floury feel when moist and sticky when wet but does not form a ribbon and forms a ball that tolerates some handling;
   (G) Sandy Clay Loam: Sandy clay loam has a gritty feel but contains enough clay to form a firm ball and may form ribbons from 0.75 inch to one-inch long pieces;
   (H) Silty Clay Loam: Silty clay loam is sticky when moist and forms a ribbon from one to two inches. Rubbing silty clay loam with the thumbnail produces a moderate sheen. Silty clay loam produces a distinct fingerprint;
   (I) Clay Loam: Clay loam is sticky when moist. Clay loam forms a thin ribbon of one to two inches in length and produces a slight sheen when rubbed with the thumbnail. Clay loam produces a nondistinct fingerprint;
   (J) Sandy Clay: Sandy clay is plastic, gritty, and sticky when moist and forms a firm ball and produces a thin ribbon over two inches in length;
   (K) Silty Clay: Silty clay is both plastic and sticky when moist and lacks gritty feeling. Silty clay forms a ball and ribbons to over two inches in length;
   (L) Clay: Clay is both sticky and plastic when moist, produces a thin ribbon over two inches in length, produces a high sheen when rubbed with the thumbnail, and forms a strong ball resistant to breaking;
   (M) The Division shall allow laboratory determination of the soil textural class as defined in this Section by particle-size analysis of the fine-earth fraction (less than 2.0 mm in size) using the sand, silt, and clay particle sizes as defined in this Section for field testing when conducted in accordance with ASTM standard test methods D6913 for sieve analysis or D7928 for hydrometer analysis.

3. Wetness Condition:

   (A) Soil wetness conditions caused by a seasonal high water table, perched water table, tidal water, or seasonally saturated soils shall be determined by observation of common soil mottles of colors of chroma 2 or less, using the Munsell color chart, in mottle or a solid mass. If drainage modifications have been made, the soil wetness conditions may be determined by direct observation of the water surface in monitoring wells during periods of typically high
water elevations. However, colors of chroma 2 or less that are relic from minerals of the parent material shall not be considered indicative of a soil wetness condition. 

(B) Soils that do not meet the required depths to a soil wetness condition as set forth in Subparagraphs (4) – (7) of this Paragraph shall be considered unsuitable and septage shall not be applied, unless the required depths may be maintained. Water table monitoring wells may be utilized to determine the actual depth to a soil wetness condition. The Division may limit discharges to certain months where soil wetness conditions are marginal for use.

(C) The required depth to a soil wetness condition is determined by the Soil Group Textural Classification, as set forth in Subparagraphs (4) – (7) of this Paragraph.

(4) Soil Group I soil shall be considered suitable where soil wetness conditions are deeper than 36 inches below the point of septage application or incorporation.
(5) Soil Group II soils shall be considered suitable where soil wetness conditions are deeper than 24 inches below the point of septage application or incorporation.
(6) Soil Group III soils shall be considered suitable where soil wetness conditions are deeper than 18 inches below the point of septage application or incorporation.
(7) Depth to rock: soil depth shall be considered suitable where depth to rock is deeper than 24 inches below the point of septage application or incorporation or deeper than 18 inches if the septage is pretreated to accomplish pathogen reduction and surface applied over vegetation.
(8) Mine reclamation sites shall be considered on a case-by-case basis, based on compliance with the Rules of this Section, the previous use of the mine, and the current condition of the mine.

(b) Septage land application sites shall not be located in the watershed of a Class WS-I stream. New septage land application sites shall not be located in the water quality critical area of Class WS-II, WS-III, or WS-IV streams or reservoirs. This prohibition shall not apply to those portions of a water supply watershed that are drained by Class B or Class C streams.

(c) At the time of initial permitting, septage land application sites shall observe the minimum setback distances specified in this Rule. Minimum setbacks shall be maintained throughout the life of the site only on land owned, operated, or controlled by the permittee or by the landowner(s) at the time of initial permitting. Any sale, lease, or other conveyance of land by the permittee, or by the landowner(s) if different from the permittee, subsequent to the initial permitting of the site shall include restrictions to ensure continued maintenance of the setbacks.

(d) All septage disposal sites shall be located at least the minimum distance specified for the following:

(1) residence:
(A) not occupied by the applicant – 500 feet;
(B) occupied by the applicant – 100 feet;

(2) place of business, other than the septage management firm's office or related buildings, or place of public assembly – 500 feet;

(3) well or water supply spring – 500 feet;

(4) surface waters – stream classification shall be determined in accordance with 15A NCAC 02B .0301 through .0317 Assignment of Stream Classifications;

(5) fresh waters:
(A) Class WS-I, Class WS-II, or Class WS-III streams – 300 feet;
(B) Class B stream – 300 feet;
(C) Class C stream – 200 feet;
(D) other streams and bodies of water – 200 feet;

(6) tidal salt waters:
(A) Class SA or Class SB – 300 feet from mean high water mark;
(B) Class SC and other coastal waters – 200 feet from mean high water mark;

(7) supplemental classifications:
(A) trout waters and swim waters – 200 feet;
(B) nutrient sensitive waters and outstanding resource waters – 300 feet;

(8) groundwater lowering ditches and devices – 100 feet;

(9) adjoining property under separate ownership or control – 50 feet;

(10) public road right of ways – 100 feet;

(11) food crops – 50 feet;

(12) wetlands – 50 feet;

(13) woods line – five feet, unless greater distance is required as part of an erosion and runoff control plan;
land application site on the same tract of land, permitted to a different operator – 100 feet; and setbacks in Subparagraphs (d)(3), (4), (5), (6), (7), and (8) of this Rule may be reduced 50 percent when septage is pretreated to accomplish pathogen reduction and when the land within the setback area is in permanent, established grass with at least 95 percent cover or when the setback area is in forest with a continuous canopy and a 95 percent forest litter cover. Accurate property line locations shall be the responsibility of the site operator.

e) Septage land application sites less than five acres in size, individual fields of a site less than two acres in size, and sites with complex soil patterns or unusual shapes shall be permitted only if the applicant demonstrates to the Division that the site will be managed for crop production and that septage will be applied with uniform distribution over the entire permitted application area.

(f) Septage land application sites shall not be located where the slope of the land is greater than 12 percent unless all of the conditions of this Paragraph are met:

1. the site is in permanent, established grass with at least 95 percent cover or is in forest with a continuous canopy and a 95 percent forest litter cover;
2. the erosion and runoff management plans submitted to the Division in accordance with Rule 0840(c)(14) of this Section shall indicate the following:
   A. management practices and discharge methods that will be used to reduce the potential for run-off from the site and allow for the uniform distribution of septage over the entire permitted application area; and
   B. location of potential surface water monitoring devices upslope and downslope from the area proposed to be permitted and identification of sampling methods. Monitoring may be required if there is an indication that septage is entering surface waters.
3. The Division may increase setbacks or decrease application rates for the protection of surface waters; and
4. no site shall include slopes in excess of 25 percent.

(g) A new septage land application site shall not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of a critical habitat protected under the Federal Endangered Species Act of 1973. Agricultural land shall not be considered potential habitat.

(h) Septage, or any part of septage, treated to meet the standard for Class A sewage sludge in accordance with the federal regulations for pathogen reduction and vector attraction reduction in 40 CFR Part 503, Subpart D, may be permitted by the Division for application to a public contact site, home lawns and gardens, or to be sold or given away in a bag or other container, provided it can be demonstrated that pollutant limits in 40 CFR 503.13(b)(3) Table 3 Pollutant Concentrations are not exceeded. Persons who prepare the septage, and persons who derive material from the septage, shall comply with the applicable record keeping requirements in 40 CFR 503.17(a)(1), (2) or (6). Documentation and certification by the operator that the treatment method meets the Class A standard shall be available to the Division upon request. All treatment methods and facilities shall obtain a permit from the Division in accordance with Rule .0837 of this Section.

History Note:  Authority G.S. 130A-291.1; Eff. October 1, 2009; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0837).

15A NCAC 13B .0842 MANAGEMENT OF SEPTAGE LAND APPLICATION SITES

(a) General requirements for septage land application sites shall include the following:

1. only domestic septage, as defined in G.S. 130A-290, shall be land applied or otherwise placed on a septage land application site, unless specified in the permit;
2. each site shall be posted with visible and legible "NO TRESPASSING" signs. All access roads or paths crossing or leading to the disposal area shall be posted "NO TRESPASSING" and a visible and legible sign stating "SEPTAGE LAND APPLICATION SITE" shall be maintained at each entrance to the land application area;
3. each site shall have an all weather access road;
4. no hazardous wastes shall be permitted on the site;
5. no site shall be permitted for land application of industrial or commercial septage unless the applicant demonstrates to the Division that the strength of the organic and inorganic components of the septage is within the normal range for domestic septage;
(6) treatment plant septage generated by the operation of a wastewater system permitted under Article 11 of Chapter 130A may be land applied at a septage land application site permitted under this Section;
(7) septage shall be applied to the surface of the land from a moving vehicle to have no standing liquid or soil disturbance resulting from the waste flow after the discharge is complete;
(8) septage shall not be applied to a site if any liquid is ponded on the site or if the site is flooded, frozen, or snow covered;
(9) septage shall not be applied to a site if the application method will result in ruts greater than three inches in the soil surface;
(10) disposal area boundaries shall be marked on the ground while a site or any portion of a site is in use. Markers shall be of adequate height and spacing such that they are visible and distinguishable from the surrounding landscape for determining the disposal boundaries when the site is in use;
(11) all septage discharges shall be made at a location on the site consistent with the nutrient management plan;
(12) all septage discharges, including aerial drift from discharges, shall be made within the permitted boundaries of the land application site;
(13) land application of septage shall be limited to a maximum daily hydraulic application rate of one acre inch;
(14) grease septage shall be diluted at least 1:1 from its concentration when pumped with domestic septage or water if land applied over perennial vegetation. This dilution shall be increased if crop damage occurs. This dilution requirement shall not apply to the liquid portion of grease septage that has been treated to remove solids, fats, oils, and grease as long as crop damage does not occur;
(15) solids resulting from septage treatment shall not be land applied unless the solids are treated to meet pathogen reduction and vector attraction reduction requirements in 40 CFR 503, and the permittee has demonstrated to the Division that the solids will be land applied with uniform distribution over the entire permitted application area at agronomic rates with standard agricultural spreading equipment;
(16) the site shall be managed to minimize soil erosion and surface water runoff. Appropriate soil and water management practices shall be implemented and maintained in accordance with the erosion and run-off management plan submitted in accordance with Rule .0840(c)(14) of this Section. All water control structures shall be designed, installed, and maintained to control the run-off resulting from a 10-year storm;
(17) approved nutrient management plans shall be followed;
(18) land application sites or portions of land application sites that do not follow the approved nutrient management plan shall not be used for land application until brought into compliance with the nutrient management plan;
(19) land application sites permitted for the management of grease septage, or commercial or industrial septage, shall have a septage detention facility available, of adequate size to meet the requirement of Subparagraph (a)(14) of this Rule; and
(20) a septage land application site permit holder or operator is responsible for the actions of any septage management firm that the permit holder or operator allows to use his or her land application site.

(b) Maximum land application rates for septage shall be determined based upon the following:
(1) domestic septage land application rates shall be in accordance with 40 CFR 503.12(c);
(2) land application of domestic treatment plant septage shall not exceed the rate in 40 CFR 503.14(d);
(3) pollutant limits for regulated metals in 40 CFR 503.13 shall not be exceeded for any type of septage;
(4) grease septage shall be land applied at a rate that is equal to or less than the agronomic rate, but in no case shall the application of untreated grease septage exceed 25,000 gallons per acre per year;
(5) sites permitted for the land application of grease septage shall meet the requirements of 40 CFR 257.3-5;
(6) land application rates for septage treated to reduce solids, nutrients, or pollutants shall be determined based on the analysis of the treated material;
(7) at least four analyses of treated liquid shall be required prior to receiving an adjusted land application rate. Additional samples may be required for inconsistent analysis results;
(8) each analysis shall include nitrogen panel, phosphorus, potassium, soluble salts, pH, and regulated metals except mercury, calcium, manganese, magnesium, iron, sulfur, boron and chlorine;
(9) after an adjusted land application rate is approved, sampling shall be required every 60 days for the initial 12 months of operation;
(11) after the initial 12 months, wastes with consistent sample results shall be sampled quarterly; and
(12) land application rates for industrial or commercial septage, or commercial or industrial treatment plant
septage shall be determined as specified in Subparagraphs (b)(1) and (b)(2) of this Rule unless testing
determines that a lower rate is necessary due to other non-domestic pollutants.

(c) Septage treatment standards:
(1) domestic septage shall be treated in accordance with the requirements in 40 CFR 503 D (including
Appendix A and B) except that 503.33(b)(11) is not incorporated;
(2) grease septage, treated grease septage, industrial or commercial treatment plant septage, and industrial
or commercial septage shall be treated in accordance with 40 CFR 257.3-6 or treated by an equivalent
or more stringent process in 40 CFR 503 D;
(3) grease septage, or any part of grease septage, mixed with domestic septage shall be treated as grease
septage; and
(4) domestic treatment plant septage shall be treated to meet the pathogen reduction and the vector
attraction reduction requirements in 40 CFR 503 D.

(d) No one other than the permit holder shall land apply septage at a permitted site unless approved in writing by the
Division. The permit holder shall submit a written request and written authorization from the landowner(s), if different
from the permit holder. The request shall include the name of the firm requesting approval and the type and amount of
septage proposed to be discharged. The Division may approve the request if the land application activity, the permit
holder, and the firm requesting approval to land apply are in compliance with rules of this Section.

(e) Permit holders of septage land application sites shall develop and maintain records and reports to demonstrate
compliance with this Section and the permit requirements of each site.
(1) permit holders of sites receiving septage shall maintain a log which meets the requirements of 40 CFR
503.17(b);
(2) permit holders of all septage land application sites shall have all records and certifications and test
results required in accordance with this Section available for review during inspections by the Division
or upon the Division's request; and
(3) the permit holder of a site where more than one septage management firm has been authorized by the
Division to discharge septage shall submit a monthly report to the Division that shall include the
following information for each discharge: the date and quantity of each discharge, the type of septage
discharged, and the name of the septage management firm discharging.

(f) Septage shall not be land applied at a new septage land application site until a representative of the Division has
inspected the site to determine compliance with these rules and consistency with the permit application and all permit
conditions.

History Note: Authority G.S. 130A-291.1;
Eff. October 1, 2009;
Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0838).

15A NCAC 13B .0843 SAMPLING AND ANALYSIS
(a) Monitoring or sample collection, handling, and analysis required by this Section and all costs involved shall be the
responsibility of the septage management firm permit holder.
(b) The permit holder of a septage land application site shall obtain representative soil samples once every two years
from each field, as designated in permit, during the last quarter of the calendar year.
(c) Soil samples shall be analyzed for cation exchange capacity, pH, phosphorus, potassium, calcium, manganese,
magnesium, zinc, and copper. If the results for zinc analysis are equal to or above 30 pounds per acre or the results for
copper analysis are equal to or above 35 pounds per acre, analysis for the metals listed in Rule .0840(c)(10)(B) of this
Section shall be required. Sites permitted to receive septage other than domestic septage shall be analyzed for cadmium to
determine compliance with 40 CFR 257.3-5.
(d) Domestic septage and grease septage shall be monitored in accordance with 40 CFR 503.16(b).
(e) Domestic treatment plant septage proposed to be land applied at a permitted septage land application site shall be
sampled before the initial application, and annually thereafter, prior to being removed from a treatment facility. Samples
shall be analyzed for:
(1) Metals listed in 40 CFR 503.13; and
(2) Total solids, pH, ammonia, nitrates, total kjeldahl nitrogen (TKN), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total phosphorus, potassium, sodium, and magnesium.
(f) Industrial or commercial septage proposed to be land applied at a permitted septage land application site shall be sampled prior to being removed from a wastewater system. Analytical results shall be submitted to the Division prior to the issuance of a permit or approval to land apply the septage. Samples shall be analyzed for:

1. Metals listed in 40 CFR 503.13;
2. Total solids, pH, ammonia, nitrates, TKN, BOD, COD, total phosphorus, potassium, sodium, and magnesium; and
3. Organic chemicals, using a complete EPA Test Method 1311 Toxicity Characteristic Leaching Procedure or other appropriate analysis, such as EPA Test Method 8260 Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry or 8270 Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, unless an examination of the industrial process and the material used indicates less extensive analysis is acceptable.

(g) Sample analysis required by this Section shall be performed either by the North Carolina Department of Agriculture and Consumer Services laboratory or by a laboratory certified by the North Carolina Division of Water Resources for waste analysis. Analysis for inorganic constituents shall be conducted in accordance with 40 CFR 503.8.

History Note: Authority G.S. 130A-291.1; Eff. October 1, 2009; Amended Eff. May 1, 2017; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0840).

15A NCAC 13B .0844 LAND APPLICATION SITE LAND USE AND SITE CLOSURE
(a) Upon closure of a land application site permitted in accordance with this Section, the site shall meet the site restriction requirements set forth in 40 CFR 503.32(c)(1).
(b) Nursery and horticultural products, trees and other forest products, such as pine straw and pine bark, shall not be harvested or gathered for 30 days after septage application.
(c) Public access is to be controlled in accordance with 40 CFR 503.32(c)(1).
(d) The permit holder or operator of the site shall submit a written notification to the Division at least 30 days prior to final closure of a septage land application site in order to schedule a site inspection for determination of compliance with this Section. The notification shall include the permit number, the date of cease of operations, and the signature of the operator.
(e) Prior to final closure, the soil pH of the site shall be raised to 6.5, unless the fertility requirements for crops to be grown in the following year dictate less.

History Note: Authority G.S. 130A-291.1; Eff. October 1, 2009; Readopted Eff. February 1, 2019 (Recodified from 15A NCAC 13B .0843).

15A NCAC 13B .0845 REVOCATION OF PERMITS

History Note: Authority G.S. 130A-291.1; Eff. October 1, 2009; Repealed Eff. February 1, 2019.

15A NCAC 13B .0846 APPEALS
Appeals shall be made in accordance with G.S. 150B, Article 3.

History Note: Authority G.S. 130A-291.1; Eff. October 1, 2009; Readopted Eff. February 1, 2019.

SECTION .0900 - YARD WASTE FACILITIES

15A NCAC 13B .0901 PROCEDURE FOR PERMIT
15A NCAC 13B .0902 APPLICABILITY FOR YARD WASTE FACILITY
15A NCAC 13B .0903 APPLICATION REQUIREMENTS FOR YARD WASTE FACILITIES
15A NCAC 13B .0904  OPERATIONAL REQUIREMENTS FOR YARD WASTE FACILITIES
15A NCAC 13B .0905  COMPOST CLASSIFICATION AND DISTRIBUTION

History Note: Authority G.S. 130A-294; 130A-309.10; 130A-309.11;
Eff. February 1, 1991;
Amended Eff. December 1, 1991;
Repealed Eff. May 1, 1996.

SECTION .1000 - SOLID WASTE MANAGEMENT LOAN PROGRAM

15A NCAC 13B .1001  DEFINITIONS
15A NCAC 13B .1002  APPLICATION
15A NCAC 13B .1003  ELIGIBLE PURPOSES
15A NCAC 13B .1004  SCREENING OF APPLICATION
15A NCAC 13B .1005  PRIORITY FACTORS

History Note: Authority G.S. 159I-11;
Eff. November 1, 1990;
Expired Eff. July 1, 2017 pursuant to G.S. 150B-21.3A.

SECTION .1100 - SCRAP TIRE MANAGEMENT

15A NCAC 13B .1101  DEFINITIONS
The definitions in G.S. 130A-309.53 and the following definitions shall apply throughout this Section:
(1) "Disposal site" means any place at which scrap tires are disposed of by sanitary landfill or incineration.
(2) "Processing" means chopping, chipping, shredding, slicing, cutting, stamping, dyeing, pyrolizing, or other physicochemical processing of scrap tires either for disposal or production of useable materials.

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1102  APPLICATION FEE AND ANNUAL PERMIT FEE

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1103  GENERATOR OF SCRAP TIRES
No person shall discard, deposit, or dispose of a scrap tire except at a site or facility permitted to receive scrap tires under these Rules, or at a business exempt from a permit under G.S. 130A-309.57(d).

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1104  GENERAL CONDITIONS
(a) Landfilling of whole scrap tires is prohibited. Shreds or portions of scrap tires less than half of a whole scrap pneumatic tire shall be suitable for landfilling.
(b) The owner or operator of a scrap tire disposal site or processing facility may submit a request to the Division to use a scrap tire disposal or processing method other than the disposal methods in G.S. 130A-309.58. The request shall be included with a permit application or renewal submitted to the Division in accordance with Rule .1106 of this Section, and shall be approved by the Division if the owner or operator demonstrates that the proposed method meets the following conditions:
(1) is protective of human health and the environment;
PERMIT REQUIRED
(a) No person, other than a person exempted by G.S. 130A-309.57(d), shall establish, operate or maintain, or allow to be established, operated or maintained upon land owned, leased, or otherwise controlled by that person, a scrap tire collection site or scrap tire disposal site unless a permit for the site has been obtained from the Division.
(b) Applications for permits submitted in accordance with Rule .1106 of this Section shall be forwarded to the Division of Waste Management, Solid Waste Section, 1646 Mail Service Center, Raleigh, North Carolina 27699-1646.
(c) A permit is issued to the permit applicant for a particular site and shall not be transferable.
(d) Trailers and covered roll-off containers used as scrap tire collection facilities are exempt from the requirements of Rule .1106(c) of this Section with the exception of Subparagraphs (c)(3) and (c)(5) of this Rule.
(e) Scrap tire collection sites operated by units of local government are exempt from the financial responsibility requirements established in Rule .1111 of this Section.

SCRAP TIRE COLLECTION SITE PERMIT REQUIREMENTS
(a) A scrap tire collection site permit shall be issued for a period of five years. Permit renewal applications shall be submitted to the Division not less than 60 days prior to the expiration date of the permit.
(b) A permit shall specify the storage limit for a scrap tire collection site.
(c) Scrap tire collection sites shall meet the following siting and design requirements for a permit to be issued:
   (1) a site shall not be located within either the 100-year floodplain or 100 feet of any surface water; A site shall not be located within any wetland as defined in the Federal Clean Water Act, section 404(b)(1), which is hereby incorporated by reference, including any subsequent amendments or additions.
   (2) a site shall maintain a 50-foot buffer between all property lines and scrap tire storage areas;
   (3) the site shall be served by an access road that shall be kept passable at all times for any motor vehicle, including fire trucks;
   (4) the site shall be designed to prevent standing water on-site and prevent off-site drainage problems;
   (5) access to the site shall be controlled to prevent unauthorized entry through the use of barriers such as fences, gates, or berms; and
   (6) the site shall be designed to prevent liquid runoff from a potential tire fire from entering any surface water.
(d) The following information shall be submitted to the Division in an application for a scrap tire collection site permit:
   (1) name and location of proposed facility, including street address or state road number, city, county, and zip code;
   (2) name, address, telephone number, and signature of site operator;
   (3) name, address, telephone number, and signature of property owner, and a copy of the deed or other legal description of the site that would be sufficient as a description in an instrument of conveyance, showing property owner's name;
   (4) a map or aerial photograph showing the area within one-fourth mile of the site, and identifying the following:
       (A) the property owned or leased for use as a scrap tire collection site by the applicant; and
       (B) the location of all homes, buildings, public or private utilities, roads, wells, water courses, floodplains, and other details regarding the topography;
   (5) a description of the operation of the facility;
   (6) quantity of tires, expressed in tons, for the following:
(A) the quantity expected to be received per month from each source;
(B) the quantity expected to be shipped off-site per month; and
(C) the quantity expected to be stored on-site.

(7) plans for disposition of all tires collected at the site, including the names, addresses, and permit information, if applicable, of all facilities where the tires will be recycled, processed, or disposed;
(8) the projected date of commencing operation;
(9) a description of how any waste resulting from the operation of the tire site will be disposed;
(10) a description of how the scrap tire collection site will meet the siting and design requirements of Paragraph (c) of this Rule;
(11) a letter stating that this use complies with local zoning from the unit of local government having zoning authority over the site. If no zoning is applicable, the unit of local government shall provide documentation to that effect;
(12) a letter from the local fire protection authority accepting the responsibility for fire protection services and an annual fire safety survey for the site;
(13) a description of how the scrap tire collection site will meet the operational requirements of Rule .1107 of this Section;
(14) documentation of the operator's ability to meet the financial responsibility requirements of Rule .1111 of this Section;
(15) documentation that all processors or recyclers have access to a disposal site that is permitted to receive scrap tires; and
(16) documentation from the Division of Energy, Land, and Mineral Resources within the Department stating that the planned site use and operations comply with the requirements of the Sedimentation Pollution Control Law (15A NCAC 04).

History Note: Authority G.S. 130A-309.57; Eff. October 1, 1990; Readopted Eff. December 1, 2018.

15A NCAC 13B .1107 SCRAP TIRE COLLECTION SITE OPERATIONAL REQUIREMENTS
Scrap tire collection sites shall meet the following operational requirements:

(1) Owners and operators of collection sites that process scrap tires shall submit to the Division an annual report by August 1 of each year, for the previous calendar year. The report shall be submitted on a form prescribed by the Division. The following information shall be included in the report:
   (a) the facility name, address, and permit number;
   (b) the year covered by the report;
   (c) the total quantity and type of scrap tires or processed tires received at the facility during the year covered by the report;
   (d) the total quantity and type of scrap tires or processed tires shipped from the facility during the year covered by the report;
   (e) the quantity of scrap tires or processed tires shipped to each receiving facility identified by name and address; and
   (f) the total quantity and type of scrap tires or processed tires located at the facility on January 1 of the year covered by the report.

(2) All scrap tire collection, processing, or disposal sites that store scrap tires or processed tires outdoors shall comply with the following technical and operational standards:
   (a) Whole scrap tires shall be placed in an outdoor scrap tire pile(s) having dimensions no greater than 200 feet in length, 50 feet in width, and 15 feet in height.
   (b) A 50-foot wide fire lane shall be placed around the perimeter of each scrap tire pile. Access to the fire lane for emergency vehicles shall be unobstructed and passable at all times.
   (c) The owner or operator of any scrap tire collection site shall control mosquitoes and rodents to protect the public health and welfare. Whole and partial scrap tires capable of holding water shall be covered upon receipt with a water shedding material or disposed of, processed, or removed from the site within ten days of receipt. Sliced scrap tires stacked concave-side down shall not be required to be covered. The Division may approve other methods of rodent and mosquito control, if the owner or operator submits a request for the proposed method in
writing to the Division, and demonstrates the effectiveness of this method to be protective of public health and the environment, and to comply with the requirements of this Subchapter.

(d) If the scrap tire collection site receives tires from persons other than the operator of the site, a sign shall be posted at the entrance of the site and the sign shall state the operating hours. An attendant shall be present when the site is open for receipt of tires.

(e) No operations involving the use of open flames, blow torches, or flammable substances shall be conducted within 50 feet of a scrap tire or processed materials pile.

(f) A fire safety survey shall be conducted annually by local fire protection authorities that accepted responsibility for fire protection services in the letter submitted in accordance with Rule.1106(d)(12) of this Section.

(g) Communication equipment shall be maintained at the scrap tire collection site to assure that the site operator is able to contact local fire protection authorities in case of a fire.

(h) Debris, grass, underbrush, and other potentially flammable vegetation shall not be within 10 feet of scrap tires or processed materials.

(i) The operator of the scrap tire collection site shall prepare and keep an emergency preparedness manual at the site. The manual shall be updated at least once a year, or upon changes in operations at the site. The manual shall contain the following elements:
   (i) a list of names and numbers of persons to be contacted in the event of a fire, flood, or other emergency;
   (ii) a list of the emergency response equipment at the scrap tire collection site, its location, and how it should be used in the event of a fire or other emergency;
   (iii) a description of the procedures to be followed in the event of a fire, including procedures to contain and dispose of the oily material generated by the combustion of large numbers of tires; and
   (iv) a listing of all hazardous materials stored on-site, their location, and information regarding precautions.

(j) The operator of the scrap tire collection site shall within 24 hours notify the Division in the event of a fire or other emergency if that emergency has potential off-site effects. Within two weeks of any emergency involving potential off-site impact, the operator of the site shall submit to the Division a written report describing the cause(s) of the emergency, actions taken to deal with the emergency, results of the actions taken, and an analysis of the success or failure of these actions.

(k) The operator of the scrap tire collection site shall maintain the following records and make them available for inspection by the Division at the Division's request:
   (i) a copy of the permit;
   (ii) records of the quantity of scrap tires and processed tires received at the site, stored at the site and shipped from the site, including destination (name and address of facility); and
   (iii) all certification forms applicable to any tires received, stored, or shipped from the site.

(l) Unless otherwise specified by the Division in the facility permit, the number of scrap tires stored at a scrap tire collection site shall not exceed 60,000 tires on site at any time and shall not exceed the stated number of scrap tires shipped off-site per month plus the stated number of scrap tires disposed of on-site per month, except that the storage limit for collection sites associated with scrap tire processing facilities shall be determined by multiplying the daily throughput of the processing equipment used by 30.

(m) A scrap tire processing facility shall not accept any scrap tires for processing above the number that may be processed daily if it has reached its storage limit. At least 75 percent of both the scrap tires and processed tires that are delivered to or maintained on the site of the scrap tire processing facility site shall be processed and removed for recycling or disposal at a solid waste management facility permitted by the Division to receive such waste within one year of their receipt.

(n) The temperature of any above ground piles of compacted, processed tires over 1,000 cubic yards in size shall be monitored and shall not exceed 300 degrees Fahrenheit. Temperature control measures shall be instituted so that pile temperatures do not exceed 300 degrees
Temperature monitoring and controls shall not be required for processed tires disposed of in sanitary landfills permitted by the Division to receive such waste.

(o) The operator of the scrap tire collection site shall prepare and keep a contingency plan stating disposal methods or other means to handle tires during adverse weather, equipment failure, or other conditions that cause the site to be unavailable.

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1108 SCRAP TIRE DISPOSAL SITE PERMIT AND OPERATIONAL REQUIREMENTS

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1109 CLOSURE OF NON-CONFORMING SITES
(a) Any scrap tire collection or disposal site that does not meet the requirements of this Section shall be closed.
(b) In closing any non-conforming scrap tire site, the owner or operator shall:
   (1) prevent public access to the site;
   (2) post a notice indicating the site is closed and the nearest permitted site where scrap tires may be deposited;
   (3) notify the Division of the closing prior to tire removal;
   (4) remove all scrap tires, processed tires and residuals to a scrap tire collection site that is permitted in accordance with this Section, or that is exempt from permitting pursuant to G.S. 130A 309.57(d); or to a solid waste management facility permitted by the Division to accept scrap tires or processed tires, and provide receipts to the Division by a deadline that shall be specified by the Division; and
   (5) remove any solid waste to a solid waste management facility permitted by the Division to receive such waste.
(c) Once all requirements set forth in Paragraph (b) of this Rule are complete, the owner or operator shall notify the Division in writing.

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1110 SCRAP TIRE PROCESSING FACILITIES

History Note: Authority G.S. 130A-309.57;
Eff. October 1, 1990;

15A NCAC 13B .1111 FINANCIAL RESPONSIBILITY REQUIREMENTS
(a) Owners and operators of scrap tire disposal sites shall provide proof of financial responsibility in accordance with the financial responsibility rules for landfills adopted pursuant to G.S. 130A-294(b) and 130A-309.27.
(b) Owners and operators of scrap tire collection sites permitted under these Rules shall provide proof of financial responsibility to ensure closure of the site in accordance with these Rules and to cover property damage or bodily injury to third parties which may result from fire or other public health hazard occurring at the site. Financial responsibility may be demonstrated through surety bonds, insurance, letters of credit, a funded trust, or other documents which show that the owner or operator has sufficient resources to meet the requirements of this Rule, including the guarantee of a corporate parent with sufficient resources to meet the requirements of this Rule. Documentation of financial responsibility shall be kept current, and updated as required by changes in these Rules, changes in operation of the site, and inflation.
(c) Owners and operators of scrap tire collection sites shall demonstrate the following minimum amounts of financial responsibility:
For site closure: one dollar and fifty cents ($1.50) per tire for the maximum number of tires permitted to be stored on the site at any one time.

For property damage and bodily injury to third parties and public property: two thousand five hundred dollars ($2,500) worth of coverage per occurrence for each 1,000 tires permitted to be stored on-site, with an annual aggregate of five thousand dollars ($5,000) worth of coverage for each 1,000 tires permitted to be stored on-site.

Maintenance of financial responsibility in the required amounts in Paragraphs (c)(1) and (2) does not in any way limit the responsibility of owners and operators for the full costs of site closure and clean-up, the expenses of any on-site or off-site environmental restoration necessitated by activities at the site, and liability for all damages to third parties or private or public properties caused by the establishment and operation of the site.

**History Note:**
Authority G.S. 130A-294(b); 130A-309.27;

**15A NCAC 13B .1112 SCRAP TIRE HAULER REQUIREMENTS**

**History Note:**
Authority G.S. 130A-309.59;
Eff. October 1, 1990;
Expired Eff. July 1, 2017 pursuant to G.S. 150B-21.3A.

**SECTION .1200 - MEDICAL WASTE MANAGEMENT**

**15A NCAC 13B .1201 DEFINITIONS**

For the purpose of this Section, the following definitions apply:

1. "Blood and body fluids" means liquid blood, serum, plasma, other blood products, emulsified human tissue, spinal fluids, and pleural and peritoneal fluids. Blood and body fluids do not include dialysates, feces, or urine if not removed during surgeries and autopsies.

2. "Generator" and "Generating facility" mean any business, integrated medical facility, and volunteer or non-profit healthcare services where medical waste is produced, including any medical or dental facility, mortuary, laboratory, veterinary hospital, and blood bank; but does not include households.

3. "Integrated medical facility" means one or more health service facilities as defined in G.S. 131E-176(9b) that are:
   (a) located in a single county or two contiguous counties;
   (b) affiliated with a university medical school or that are under common ownership and control; and
   (c) serve a single service area.

4. "Medical waste" means the term defined in G.S. 130A-290(17a).

5. "Microbiological waste" means the term defined in Rule .0101(26) of this Subchapter.

6. "Non-hazardous pharmaceutical waste" is a medical waste and means a medical drug that is expired, unused, contaminated, damaged, or no longer needed or used for its prescribed purpose and that is not a hazardous waste as defined in G.S. 130A-290(a)(8).

7. "Nuisance" means odorous outside of the property boundary or transport vehicle; or attracting vermin or disease vectors.

8. "Package" means the total contents of a box, drum, or vessel containing medical waste, including labeling and markings.

9. "Pathological waste" means the term defined in Rule .0101(31) of this Subchapter.

10. "Record" means any data required to be kept on file by the operator or responsible party, or submitted to the Division in accordance with the rules of this Section. A record may be a paper copy or electronic format that is legible and in English.

11. "Regulated Medical Waste" means the term defined in Rule .0101(34) of this Subchapter.

12. "Responsible party" means the entity that is in possession of and has accepted the regulated medical waste.


14. "Trace chemotherapy waste" means medical waste containing no more than three percent by weight of a medical drug used for chemotherapy, but is not a radioactive waste. Trace chemotherapy waste
includes gowns, gloves, wipes, and other handling, preparation, administration, cleaning, and decontamination items used in association with chemotherapy.

(15) "Transfer or storage operations" means the act of, and process by which, regulated medical waste is removed from a transport vehicle and placed in another transport vehicle or in storage awaiting transport.

(16) "Transport vehicle" means a vehicle or other conveyance type used to transport regulated medical waste to and from transfer or storage operations or to and from a treatment facility.

(17) "Treatment" means the term as defined in G.S. 130A-309.26(a)(2).

(18) "Treatment facility" means a regulated medical waste treatment facility permitted by the Division in accordance with the rules of this Section.

(19) "Solid waste" means the term defined in G.S. 130A-290(a)(35).

History Note: Authority G.S. 130A-309.26; Eff. October 1, 1990; Amended Eff. April 1, 1993; Readopted Eff. November 1, 2019.

15A NCAC 13B .1202 GENERAL REQUIREMENTS FOR MEDICAL WASTE
(a) Medical waste is subject to the rules in 15A NCAC 13B, “Solid Waste Management.”
(b) Sharps and other sharp objects such as syringes with attached needles, capillary tubes, slides and cover slips, lancets, auto injectors, connection needles and sets, exposed ends of dental wires, and objects that can penetrate the skin shall be placed in a rigid, leak-proof when in an upright position, and puncture-resistant container, and shall not be compacted prior to off-site transportation unless placed in a sealed compactor unit that is hauled off for disposal by the transporter.
(c) Blood and body fluids in individual containers in volumes of 20 milliliters or less shall be stored in an area accessible only to the responsible party or their designated representative, and shall not be compacted prior to off-site transportation.
(d) Regulated medical waste shall not be compacted prior to treatment.
(e) Only the responsible party or their designated representative shall have access to regulated medical waste.
(f) Medical waste shall not become putrescent. Medical waste shall be disposed of or treated within three calendar days of becoming putrescent.
(g) Medical waste shall not become a nuisance.
(h) Medical waste accepted at transfer or storage operations or a treatment facility shall not be subject to the requirements of Rule .1203(a) and (b)(2) of this Section.
(i) Medical waste treatment and disposal methods:
   (1) Blood and body fluids in individual containers in volumes greater than 20 milliliters shall be disposed of by sanitary sewer if the local sewage treatment authority has been notified; or treated by incineration or steam sterilization.
   (2) Microbiological waste shall be treated by incineration, steam sterilization, ozonation, microwave, or chemical treatment.
   (3) Non-hazardous pharmaceutical waste shall be treated by incineration or disposed of at a municipal solid waste landfill. The requirements of this Subparagraph shall not prevent non-hazardous pharmaceuticals from being returned to the vendor.
   (4) Pathological waste shall be treated by incineration or ozonation.
   (5) Trace chemotherapy waste shall be treated by incineration or ozonation.
   (6) Noninfectious medical waste and blood and body fluids in individual containers in volumes of 20 milliliters or less may be disposed of in a municipal solid waste landfill, or treated by the treatment methods as described in this Paragraph. Blood and body fluids in individual containers in volumes of 20 milliliters or less may also be disposed of in a sanitary sewer. The requirements of this Subparagraph shall not prevent noninfectious medical waste such as textiles, plastic, glass, or metal from being recycled.
(j) Medical waste treated at the generating facility is not subject to the requirements of Paragraphs (o), (p), and (q) of this Rule, and Rule .1204(b)(1), (b)(3), and (b)(8) of this Section.
(k) Crematoriums are not subject to the requirements of this Section.
(l) Transport vehicles, transfer or storage operations, and treatment facilities shall:
   (1) be kept free of leaked, spilled, and unpackaged medical waste;
   (2) not contain porous floor coverings;
(3) be ventilated;
(4) not create a nuisance; and
(5) have a method of leak control or spill cleanup, including decontamination.

(m) A responsible party shall be present when regulated medical waste is being transferred by means of transfer or storage operations.

(n) Regulated medical waste shall be transported and stored in a manner that prevents exposure to the environment and inclement weather.

(o) Unrefrigerated regulated medical waste shall be treated within 21 calendar days of shipment from the generator.

(p) Refrigeration at an ambient temperature of a maximum of 45 degrees Fahrenheit (7.22 degrees Celsius) shall be maintained for regulated medical waste not treated within 21 calendar days of shipment from the generator.

(q) All regulated medical waste shall be treated within 60 calendar days of shipment from the generator.


15A NCAC 13B .1203 REQUIREMENTS FOR REGULATED MEDICAL WASTE GENERATORS, TRANSPORTERS, AND TRANSFER AND STORAGE OPERATIONS

(a) Regulated medical waste packaging requirements:

(1) All Sections of the Code of Federal Regulations (CFR) cited in this Paragraph are hereby incorporated by reference, including subsequent amendments and editions and can be accessed at no cost at https://www.gpo.gov/.


(3) A plastic film bag shall be used as inner packaging, unless it is not required per the regulated medical waste type when used in conjunction with one of the package designs pursuant to Subparagraph (2) of this Paragraph.

(4) The plastic film bag used as inner packaging shall be sealed to prevent leaks.

(5) A rigid box, drum, or vessel constructed to prevent leakage shall be used as outer packaging.

(6) Outer package labeling shall be legible and written in English.

(7) Outer packaging shall contain the universal biohazard symbol as described in 29 CFR 1910.1030(g).

(8) Each package shall be handled to prevent leaks, damage, and changes to the package, labeling, and markings.

(9) Labels and markings on the outside of each package shall contain the following information:

(A) state that the content is an “infectious substance” or a “biohazard;”

(B) the generator name, physical address, and phone number;

(C) the transporter name, physical address, and phone number;

(D) the treatment facility name, physical address, and phone number, unless the label contains a tracking number that corresponds to a record that includes the treatment facility name, physical address, and phone number, and the record is provided to the Division at the time of inspection and upon request; and

(E) the date of shipment from the generating facility, unless the label contains a tracking number that corresponds to a record that includes the date of shipment, and the record is provided to the Division at the time of inspection and upon request.

(b) Generator requirements:

(1) The generating facility shall package medical waste by treatment method type in accordance with Rule .1202(i) of this Section.

(2) The generating facility shall maintain a record of each shipment of regulated medical waste transported off-site for a period of three years that includes the following information:

(A) the number of packages;

(B) the transporter name, physical address, and phone number;

(C) the treatment facility name, physical address, and phone number; and

(D) the date of shipment from the generating facility.
The requirements of this Subparagraph do not apply to generating facilities that generate less than 50 pounds of regulated medical waste per month.

(c) Transporter requirements:

(1) The transporter shall not accept regulated medical waste that does not meet the requirements of Paragraph (a) of this Rule.

(2) The universal biohazard symbol shall be displayed on the outside of a transport vehicle on both sides and rear of the vehicle's cargo area, shall be legible, and shall not be obstructed from view.

(3) Transport vehicles shall only transport medical waste for treatment, other solid wastes, and supplies related to the handling of solid wastes. If a medical waste package leaks or spills, all of the solid waste, except for hazardous waste, within the same storage area of the transport vehicle as the leaking or spilled package shall be treated at a medical waste treatment facility. If the solid waste that leaked or spilled is a hazardous waste, all of the solid waste within the same storage area of the transport vehicle as the leaking or spilled package shall be brought to a hazardous waste treatment facility.

(4) Transport vehicles shall be free of medical waste and disinfected with a mycobactericidal disinfectant before being reused if any packages spilled or leaked while in the vehicle, and prior to discontinuing use of the transport vehicles to haul medical waste.

(5) The vehicle operator shall keep a contingency plan as described in Rule .1204(b)(4)(H) of this Section in the transport vehicle and shall be trained to implement the contingency plan prior to transporting medical waste.

(6) The transporter shall be in compliance with Rule .1202(o), (p), and (q) of this Section.

(d) Transfer or storage operations requirements:

(1) The responsible party for transfer or storage operations occurring at a treatment facility shall include a description of the transfer or storage operations in the facility operations plan submitted to the Division in accordance with Rule .1204(b)(4) of this Section.

(2) The responsible party for transfer or storage operations occurring at a location other than a treatment facility shall submit a record to the Division within 14 calendar days of commencing transfer or storage operations, and once every two years thereafter, while the responsible party is managing the transfer or storage operations. The record shall include the following information:

(A) the name, mailing address, physical address, office and mobile phone numbers, and email address for the responsible party(s) and operator(s);

(B) county GIS property data for the location where transfer or storage operations occur;

(C) procedures for how the medical waste will be received, handled, stored, and transferred;

(D) the frequency that transfer or storage operations occur;

(E) the amount of medical waste that is expected to be on site at the transfer or storage operations; and

(F) additional information that the Division may request pertaining to the transfer or storage operations if it is necessary to determine compliance with the rules of this Subchapter.

The responsible party shall submit an updated record to the Division within 14 calendar days if any of the information required to be submitted by this Subparagraph changes.

(3) If the transfer or storage operations cease, the responsible party shall submit to the Division a record within 14 calendar days. The record shall include the following information:

(A) a signed statement by the responsible party(s) that transfer or storage operations have ceased and all medical waste has been removed;

(B) digital pictures of the area that was utilized for transfer or storage operations taken after operations have ceased and all medical waste has been removed; and

(C) additional information that the Division may request pertaining to the transfer or storage operations if it is necessary to determine compliance with the rules of this Subchapter.

(4) Within 90 days of the readopted effective date of this Rule, existing transfer or storage operations shall comply with Subparagraph (2) of this Paragraph.

(5) The transfer or storage operations shall comply with Rule .1202(o), (p), and (q) of this Section.

History Note: Authority G.S. 130A-309.26; Eff. October 1, 1990; Amended Eff. April 1, 1993; Readopted Eff. November 1, 2019.
REQUIREMENTS FOR THE TREATMENT OF REGULATED MEDICAL WASTE

(a) General requirements for treated regulated medical waste:

1. Treated regulated medical waste shall be covered to prevent exposure to the environment and inclement weather.
2. Treated regulated medical waste may be placed uncovered in or under a weather resistant structure while dewatering or while in the process of being covered.
3. Treated regulated medical waste shall be stored no longer than 14 calendar days after treatment unless the facility's operations plan states that the storage unit is a necessary part of the operation of the treatment process and is enclosed, sealed, and watertight.
4. Treated regulated medical waste storage and transport containers, compactors, trailers, and cargo bays shall be maintained in accordance with the manufacturer's specifications.
5. Treated regulated medical waste shall not be transported off site uncovered.
6. The exterior of treated regulated medical waste storage and transport containers, compactors, trailers, and cargo bays shall be free of solid waste and solid waste residue.
7. Treated regulated medical waste shall not become putrescent. Putrescent treated regulated medical waste shall be disposed of within three calendar days.
8. Treated regulated medical waste shall not become a nuisance.
9. Treated regulated medical waste shall be noninfectious.

(b) General requirements for treatment facilities:

1. The treatment facility shall be compliant with Rule .1202(o), (p), and (q) of this Section.
2. The treatment facility shall issue a written record notifying the generating facility if it becomes aware of a package of medical waste received that is not in compliance with Rule .1202(i) of this Section for the treatment method utilized. A copy of the record shall be maintained at the treatment facility.
3. The treatment facility shall maintain a record of each shipment of regulated medical waste received for treatment for a period of three years to include the following information:
   - the number of packages;
   - the generator name, physical address, and phone number;
   - the transporter name, physical address, and phone number;
   - the date each package was picked up from the generator;
   - the date each package was received at the treatment facility;
   - the weight of each package in pounds; and
   - the date each package was treated.
4. The treatment facility shall submit a facility operations plan to the Division with the permit application required in accordance with the rules of this Subchapter that shall include the following information:
   - the name, mailing address, physical address, office and mobile phone numbers, and email address for the responsible party(s), owner(s), and operator(s);
   - the physical address and the county GIS property data for the facility location;
   - types and estimated amounts of medical waste to be accepted at and shipped out from the facility;
   - a description of the treatment process or processes, and treatment unit specifications;
   - procedures for how the medical waste will be received, handled, stored, transferred, or treated at the facility;
   - procedures for sampling or testing required by the rules of this Section;
   - procedures that the facility shall use to prevent medical waste from becoming a nuisance or putrescent, and procedures for abatement if medical waste becomes a nuisance or putrescent;
   - contingency plan identifying risks and describing how the facility or transporter will respond to incidents or emergencies, including a phone number for a facility or transporter representative that is available to respond 24 hours a day and seven days a week, and how regulated medical waste will be handled or redirected when facilities or transport vehicles are unavailable due to maintenance, adverse weather, or other emergencies; and
   - additional information that the Division may request pertaining to the facility operations if it is necessary to determine compliance with the rules of this Section.
A copy of the operations plan shall be kept at the facility and shall be available for review by the
Division during facility inspections or upon request by the Division. If the information required by this
Paragraph changes, the facility shall submit a revised facility operations plan to the Division and
update the copies of the plan kept by the facility.

(5) The treatment facility shall maintain a record of the disposal facility’s contact information including the
facility name, permit number, physical location and mailing address, and contact name and phone
number.

(6) The treatment facility shall maintain a record of the dates and tonnages of treated regulated medical
waste sent for disposal.

(7) The treatment facility shall maintain operating records and monitoring, testing, and maintenance
records required in accordance with the rules of this Section for a period of three years.

(8) The facility shall submit an annual report to the Division in accordance with G.S. 130A-309.09D(b).

(c) Steam sterilization treatment requirements:

(1) Steam under pressure shall be provided to maintain a temperature of not less than 250 degrees
Fahrenheit for 45 minutes at 15 pounds per square inch of gauge pressure during each cycle.

(2) The steam sterilization unit shall have a device that records the start and end time of each cycle.

(3) The steam sterilization unit shall have a device that records the pressure and a device that records the
temperature throughout each cycle.

(4) Testing of treatment under conditions of full loading to confirm compliance with Subparagraph (a)(9)
of this Rule shall be performed no less than once per week using a biological indicator of Geobacillus
stearothermophilus spores having a population of not less than $1.0 \times 10^4$ placed within the waste load.

(5) A record of each test performed shall be maintained and shall include the type of indicator used, the
test date, the start and end times, and the test result.

(d) Incineration treatment requirements:

(1) The Division shall not issue a solid waste management permit in accordance with the rules of this
Subchapter to the treatment facility unless the Division of Air Quality (DAQ) has issued a permit for
operation of the incinerator.

(2) The treatment facility shall maintain the DAQ permit for the operation of the incinerator.

(3) Regulated medical waste shall be subjected to a burn temperature in the primary chamber of not less
than 1200 degrees Fahrenheit.

(4) The incinerator shall have a monitoring device that records the primary chamber temperature. A record
of the continuous monitoring of the primary chamber temperature while in use shall be maintained.

(5) Interlocks or other process control devices shall be provided to prevent the introduction of regulated
medical waste into the primary chamber until the secondary chamber achieves operating temperature
as defined in the permit for incinerator operation issued by DAQ.

(6) Procedures for obtaining uniform representative composite ash samples shall be submitted to the
Division for approval in the facility operations plan in accordance with Rule .1204(b)(4) of this
Section. Ash sampling procedures shall be approved if the procedures are compliant with the
requirements of this Subchapter, are protective of human health and the environment, and if the
samples collected using the procedures are representative of the incinerator ash shipped from the
facility for disposal.

(7) The ash samples shall be collected from the dewatered ash collection container or containers.

(8) For the first three months of incinerator operation, the ash sampling procedures required by
Subparagraph (6) of this Paragraph shall include the collection of a representative ash sample of one
kilogram (2.2 pounds):
   (A) once for every eight hours of operation for an incinerator that is operated on a continuous
       schedule;
   (B) once for every 24 hours of operation for an incinerator that is operated on an intermittent
       schedule; or
   (C) once for every batch for an incinerator that is batch-loaded.

   The ash samples shall be composited in a closed container weekly and shall be mixed and reduced to a
   uniform ash sample. The weekly ash samples shall be composited into a monthly ash sample, and the
   monthly ash sample shall be analyzed.

(9) For the remainder of the first year of incinerator operation, a representative ash sample shall be
collected once per month using the procedures described in the facility operations plan. The monthly
ash samples shall be composited and reduced to a uniform quarterly ash sample, and the quarterly ash samples shall be analyzed.

(10) After the first year of incinerator operation, representative composite ash samples shall be collected using the procedures described in the facility operations plan twice per calendar year, with no less than four months between sample collection, and the samples shall be analyzed.

(11) Ash samples required to be analyzed in accordance with Subparagraphs (8) through (10) of this Paragraph shall be analyzed in accordance with 40 CFR 261.24 for the eight metals listed in Table 1 (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). 40 CFR 261 is incorporated by reference including subsequent amendments and editions; and can be accessed at no cost at https://www.gpo.gov/.

(12) A record of the testing and analysis results shall be submitted to the Division for the first year of incinerator operation, and upon request from the Division thereafter. The record shall be maintained at the facility and available for inspection by the Division. The record shall include: 
(A) the composite ash sample date and time; 
(B) the ash sample date and time; 
(C) the ash sample identification number; 
(D) the ash sample analysis results; and 
(E) the testing laboratory name and contact information and certification number.

(13) The Division may require the treatment facility to collect additional composite ash samples or analyze the samples for the full contaminant list in accordance with 40 CFR 261.24 Table 1 if the results of the analysis required in Subparagraphs (8) through (11) of this Paragraph indicate an exceedance of the regulatory level provided in 40 CFR 261.24 Table 1; or during a permitting action, a facility inspection, or when a complaint is received if it is necessary to determine compliance with the rules of this Subchapter. The requirements of this Paragraph shall not prevent a municipal solid waste landfill that is accepting incinerator ash from a treatment facility from requiring that additional ash samples be taken and analyzed to determine compliance with the rules of this Subchapter before the ash is accepted for disposal.

(e) Chemical treatment requirements:
(1) Microbiological waste shall be treated with 10 percent chlorine solution for no less than one hour.
(2) Testing of treatment under conditions of full loading to confirm compliance with Subparagraph (a)(9) of this Rule shall be performed no less than once per week using a biological indicator of Bacillus atrophaeus spores having a population of not less than $1.0 \times 10^6$.
(3) A record of each test performed shall be maintained and shall include the type of indicator used, the test date, the start and end times, and the test result.

(f) Microwave treatment requirements:
(1) Microwave energy of appropriate output frequency shall be provided at a temperature of not less than 203 degrees Fahrenheit (95 degrees Celsius) for no less than 30 minutes each cycle.
(2) The microwave treatment system shall be provided with a monitoring device that records time and temperature of each cycle. A record of the monitoring of the time and temperature of each cycle shall be maintained.
(3) Testing of treatment under conditions of full loading to confirm compliance with Subparagraph (a)(9) of this Rule shall be performed no less than once per week using a biological indicator of Bacillus atrophaeus spores having a population of not less than $1.0 \times 10^6$ and in accordance with the equipment manufacturer’s instructions.
(4) A record of each test performed shall be maintained and shall include the type of indicator used, the test date, the start and end times, and the test result.

(g) Ozonation treatment requirements:
(1) Testing of treatment under conditions of full loading to confirm compliance with Subparagraph (a)(9) of this Rule shall be performed no less than once per week using a biological indicator of Bacillus atrophaeus spores having a population of not less than $1.0 \times 10^6$ and in accordance with the equipment manufacturer’s instructions.
(2) Once every six months samples collected under conditions of full loading shall be submitted to an independent laboratory to confirm compliance with Subparagraph (a)(9) of this Rule.
(3) A record of each test performed shall be maintained and shall include the type of indicator used, the test date, the start and end times, and the test result.
(h) Alternative treatment methods.

(1) A treatment facility owner or operator may request to use a method of, or procedures for, regulated medical waste treatment not listed or described in this Rule by submitting a request to the Division for approval. The request shall include documentation that describes the alternative treatment method, explains the procedures and provides analysis results to demonstrate that the treatment method will render the regulated medical waste noninfectious, and describes how the treatment method meets the requirements of the rules of this Section.

(2) A request for an alternate method of chemical treatment shall also describe the chemical used to treat the specific microbiological agent(s) of concern for the regulated medical waste type, and shall consider factors such as temperature, contact time, pH, concentration, and the presence and state of dispersion, penetrability, and reactivity of organic material at the site of application.

(3) The Division shall approve the alternative treatment method by issuing the permit or an approval letter if the alternative treatment method renders the regulated medical waste noninfectious, and the alternative treatment method is compliant with the rules of this Section and protective of human health and the environment.

History Note: Authority G.S. 130A-309.26; 
Effective October 1, 1990; 
Amended Effective October 1, 1992; December 1, 1991; March 1, 1991; 
Readopted Effective November 1, 2019.

15A NCAC 13B .1205 REQUIREMENTS FOR TRANSPORTERS OF REGULATED MEDICAL WASTE
15A NCAC 13B .1206 REQUIREMENTS FOR STORAGE OF REGULATED MEDICAL WASTE
15A NCAC 13B .1207 OPERATIONAL REQ/REGULATED MEDICAL WASTE TREATMENT FACILITIES

History Note: Authority G.S. 130A-309.26; 
Effective October 1, 1990; 
Amended Effective April 1, 1993; January 4, 1993; 
Repealed Effective November 1, 2019.

SECTION .1300 - DISPOSITION OF FETAL REMAINS

15A NCAC 13B .1301 MANNER OF DISPOSITION OF FETAL REMAINS
All hospitals, other medical facilities or medical or research laboratories shall dispose of fetal remains by burial, cremation or incineration in accordance with 15A NCAC 13B .1200, except that burial or cremation shall be the only methods of disposal of recognizable fetuses. For purposes of this Rule, a recognizable fetus means a fetus that has developed beyond completion of the second trimester of gestation, consistent with G.S. 90-210.20(c1).

History Note: Authority G.S. 130A-309.26; 
Effective October 1, 1990; 
Temporary Amendment Effective December 22, 1997; 
Amended Effective April 1, 1999.

SECTION .1400 - SOLID WASTE COMPOST FACILITIES

15A NCAC 13B .1401 REQUIREMENT FOR PERMIT
(a) No person shall construct, operate, expand, or modify a facility that produces compost from solid waste or solid waste co-composted with other wastes unless it has a currently valid permit issued by the Division for a solid waste compost facility, except as provided in Rule .1402(f) and (g) of this Section. General provisions, siting, design, application, operational, distribution, reporting, and closure requirements shall be in accordance with Rules .1402 through .1410 of this Section.

(b) Plans for a Large Type 3 or Type 4 Solid Waste Compost Facility, as defined in Rule .1402(e) of this Section, or plans for any facility located over a closed-out disposal area, shall be submitted with the permit application in accordance with Rule .0202(a)(3) of this Subchapter.
(c) Compost permits shall be issued for a period of 10 years. An application for renewal of a permit shall be submitted to the Division in accordance with Rule .1405 of this Section no less than four months prior to expiration of the existing permit.

(d) Permit modifications.

(1) The owner or operator shall submit to the Division a permit application in accordance with Rule .1405 of this Section for a major modification to the existing permit issued by the Division. For the purpose of this Section, a major modification means any of the following: a change in the property or facility operator or ownership, a change in facility type as defined in Rule .1402 of this Section, an expansion or relocation of the operations area in the existing permit, or a change to the operations or design plan such as changes in the compost method, waste receipt and handling, feedstock storage, or processing layout. A permit issued by the Division as a result of a permit modification shall be in compliance with Paragraph (c) of this Rule.

(2) The owner or operator shall not be required to submit a permit application to the Division in accordance with Rule .1405 of this Section for a change to a plan that was submitted in accordance with Rule .1405 of this Section if the Division determines that the change does not meet the definition of a major modification provided in Subparagraph (1) of this Paragraph, the change complies with the requirements of this Section, and the owner or operator submits to the Division written notice of the change, including documentation of the updated information such as revised pages or addendums to the plan. The Division shall acknowledge receipt of the change by sending written notice to the owner or operator.

(e) For purposes of this Section, "operations area" means the total area used for mixing, grinding, processing, composting, curing, and wood waste and feedstock unloading and storage. Operations area shall not include buffer areas.

(f) For purposes of the Section, "material onsite" means wood wastes, feedstocks, mixtures, and active and curing compost, but shall not include finished product.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29; Eff. December 1, 1991; Amended Eff. May 1, 1996; Readopted Eff. November 1, 2019.

15A NCAC 13B .1402 GENERAL PROVISIONS FOR SOLID WASTE COMPOST FACILITIES

(a) The provisions of this Rule shall apply to the following facilities:

(1) facilities that produce compost or mulch from yard waste or from residues from agricultural products and processing;

(2) vermicomposting facilities;

(3) anaerobic digestion facilities; and

(4) compost facilities that compost solid waste or co-compost solid waste with sludges that are not classified as a solid waste functioning as a nutrient source.

(b) Facilities that co-compost with sewage sludge shall comply with all applicable federal regulations regarding sludge management in 40 CFR 503, which is incorporated by reference including subsequent amendments and editions. Copies of the Code of Federal Regulations may be obtained from the U.S. Government Publishing Office website at www.gpo.gov at no cost.

(c) The provisions of this Section shall not apply to compost facilities that compost only wastewater treatment sludge with solid waste functioning only as a bulking agent.

(d) Solid waste compost produced outside the State of North Carolina and imported into the state shall comply with the requirements specified in Rule .1407 of this Section.

(e) Solid waste compost facilities shall be classified based on the types and amounts of materials to be composted as follows:

(1) Type 1 facilities may receive yard and garden waste, silvicultural waste, and untreated and unpainted wood waste.

(2) Type 2 facilities may receive pre-consumer meat-free food processing waste, vegetative agricultural waste, source separated paper, and other source separated specialty wastes that are low in pathogens and physical contaminants. Waste acceptable for a Type 1 facility may be composted at a Type 2 facility.
Type 3 facilities may receive manures and other agricultural waste, meat, post-consumer source-separated food wastes, and other source-separated specialty wastes that are low in physical contaminants but may have high levels of pathogens. Waste acceptable for a Type 1 or 2 facility may be composted at a Type 3 facility.

Type 4 facilities may receive industrial solid waste, non-solid waste sludges functioning as a nutrient source or other similar compostable organic wastes, or any combination thereof. Waste acceptable for a Type 1, 2, or 3 facility may be composted at a Type 4 facility.

In determining whether a specific waste stream listed in Subparagraphs (1) through (4) of this Paragraph is acceptable for composting, the Division shall consider the method of handling the waste prior to delivery to the facility as well as the physical characteristics of the waste. Testing for pathogens and physical contaminants shall be required if a determination cannot be made based upon prior knowledge of the waste. Test methods and constituents tested shall comply with Rule .1407(b)(2), (b)(3), (b)(5), and (b)(6) of this Section.

Small facilities.

(A) Small Type 1 facilities shall have an operations area less than two acres in size and shall be limited to no more than 6,000 cubic yards material onsite at any given time, including finished product.

(B) Small Type 2, 3, and 4 facilities shall have an operations area less than two acres in size and shall be limited to no more than 1,000 cubic yards material onsite at any given time.

Large facilities.

(A) Large Type 1 facilities shall have an operations area of two or more acres in size or have more than 6,000 cubic yards material onsite at any given time.

(B) Large Type 2, 3, and 4 facilities shall have an operations area of two or more acres in size or have more than 1,000 cubic yards material onsite at any given time.

The following operations shall be exempt from the requirements of this Section:

(1) backyard composting;

(2) farming operations and silvicultural operations if the compost is produced from materials grown on the owner's land and re-used on the owner's land or associated farming operations and not offered to the public; and

(3) persons receiving no more than 30 cubic yards of leaves from an offsite source on an annual basis.

The following operations shall be exempt from the permitting requirements in Rule .1401 of this Section:

Small Type 1 Facilities meeting the following conditions:

(A) notification to the Division prior to operation and on an annual basis as to:
   (i) the facility location;
   (ii) the name(s) and contact information of the owner and operator;
   (iii) type and amount of wastes received;
   (iv) the composting process to be used;
   (v) the intended distribution of the finished product; and
   (vi) for new facilities only, a letter from the unit of government having zoning jurisdiction over the site that states that the proposed use is allowed within the existing zoning, if any, and that any necessary zoning approval or permit has been obtained;

(B) the facility operates in accordance with the operational requirements as set forth in Rule .1406(1) through (11) and (16) of this Section and the setbacks in Rule .1404(a)(1) through (a)(10) of this Section;

(C) the facility operates in accordance with all other state or local laws, ordinances, rules, regulations or orders;

(D) the facility shall not be located over a closed-out disposal site; and

(E) safety measures shall be taken to prevent fires and access to fire equipment or fire-fighting services shall be provided.

Compost facilities meeting the following conditions:

(A) the site receives for composting pre- and post-consumer food waste, manure, vegetative agricultural waste, yard and garden waste, land-clearing debris, untreated and unpainted wood waste, or source separated paper;

(B) material onsite, not including finished compost, shall not exceed 100 cubic yards at any time;
the operations area shall be less than 1.0 acres total;
(D) the site operates in accordance with operational requirements as set forth in Rule .1406 of this Section and the setbacks in Rule .1404(a)(1) through (a)(10) of this Section, except that the buffer between property line and operations area shall be at least 50 feet and the buffer between the operations area and residences or dwellings not owned and occupied by the operator shall be at least 200 feet;
(E) the site is operated to prevent the release of particulates and odors outside of the property boundary, and the site does not attract vectors such as insects and rodents;
(F) for facilities producing compost that is distributed to the public or used in public areas, compost produced from the facility shall meet the pathogen testing and record keeping requirements per Rule .1407(b) and Rule .1408(a) of this Section; and
(G) the site operates in accordance with all applicable State or local laws, ordinances, rules, regulations, or orders.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;
Eff. December 1, 1991;
Amended Eff. May 1, 1996;

15A NCAC 13B .1403 GENERAL PROHIBITIONS FOR SOLID WASTE COMPOST FACILITIES
(a) Neither hazardous waste nor asbestos-containing waste shall be accepted at a facility or processed into compost.
(b) Household hazardous waste shall not be accepted by a facility, except in an area designated by facility site plans for storage, and shall not be processed into compost.
(c) Compost made from solid waste that cannot be used pursuant to the requirements of this Rule shall be reprocessed or disposed of pursuant to the requirements of this Subchapter.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;
Eff. December 1, 1991;
Amended Eff. May 1, 1996;

15A NCAC 13B .1404 SITING/DESIGN REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES
(a) A site shall meet the requirements of this Rule at the time of initial permitting and shall continue to meet these requirements throughout the life of the permit only on the site property owned or controlled by the applicant or by the landowner(s) at the time of permitting.

1. A site located in a floodplain shall not restrict the flow of the 100-year flood, reduce the temporary storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, land, or water resources.
2. A 100-foot buffer shall be maintained between all property lines and compost areas for Type 3 and 4 facilities, 50-foot for Type 1 or 2 facilities.
3. A 500-foot buffer shall be maintained between compost areas and residences or dwellings not owned and occupied by the permittee, except that Type 1 and Small Type 2 and 3 facilities shall maintain a 200-foot buffer.
4. A 100-foot buffer shall be maintained between all wells and compost areas, except monitoring wells.
5. A 50-foot buffer shall be maintained between perennial streams and rivers and compost areas.
6. A compost facility shall be located in accordance with 15A NCAC 02B .0200, Classification and Water Quality Standards Applicable to Surface Waters in North Carolina.
7. All portions of a compost facility located over a closed-out disposal area shall be designed with a pad adequate to protect the disposal area cap from being disturbed, as defined in Part (a)(10)(C) of this Rule, and there shall be no runoff from the pad onto the cap or side slopes of the closed out area.
8. A 25-foot minimum distance shall be maintained between compost areas and swales or berms;
9. A site shall meet the following surface water requirements:
   (A) a site shall not cause a discharge of materials or fill materials into waters or wetlands of the State that is in violation of Section 404 of the Clean Water Act;
a site shall not cause a discharge of pollutants into waters of the State that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), pursuant to Section 402 of the Clean Water Act; and

a site shall not cause non-point source pollution of waters of the State that violates the water quality standards as set forth in 15A NCAC 02B.

A site shall meet the following groundwater and operations area pad requirements:

(a) a site shall not contravene groundwater standards as set forth in 15A NCAC 02L;

(b) the operations area of Type 1, 2, and 3 facilities shall have one of the following:
   (i) a soil pad with a soil texture finer than loamy sand. For a Type 1 or 2 facility, the depth to the seasonal high water table shall be maintained at least 12 inches. For a Type 3 facility, the depth to the seasonal high water table shall be maintained at least 24 inches; or
   (ii) a pad in accordance with Part (C) of this Subparagraph;

(c) the operations area of a Type 4 facility shall have a pad with a linear coefficient of permeability no greater than 1 x 10^{-7} cm/sec. The pad shall consist of one of the following:
   (i) a non-soil pad, such as concrete and asphalt, designed and constructed to meet the weight requirements of the compost operation and to prevent infiltration of liquids to groundwater; or
   (ii) a soil pad of at least 18 inches constructed in accordance with Rule .1624(b)(8) and Rule .1621 of this Subchapter. A 12-inch soil layer shall be maintained over the pad to protect it from damage and desiccation; and

(d) finished product shall be stored where the depth to the seasonal high water table is at least 12 inches below ground surface.

(b) For Subparagraphs (a)(2) through (a)(4) and Part (a)(10)(B) of this Rule, alternative minimum buffers or requirements may be modified by the Division, based on the waste type, facility design, and regional topography, if necessary to protect public health and the environment or to prevent the creation of a nuisance.

(c) A site shall meet the following design requirements:

(1) a site shall not allow unauthorized public access;

(2) a site shall meet the requirements of Sedimentation Control (15A NCAC 04);

(3) a site shall meet the requirements of the Air Pollution Control Requirements (15A NCAC 02D) to minimize fugitive emissions and odors; and

(4) a site shall be designed to minimize odors at the property boundary by means such as expanded buffers, consideration of topography and wind patterns, or process layout design.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29; Eff. December 1, 1991; Amended Eff. May 1, 1996; Readopted Eff. November 1, 2019.

15A NCAC 13B .1405 APPLICATION REQUIREMENTS FOR SOLID WASTE COMPOST FACILITIES

One paper copy and one electronic copy of a solid waste compost facility permit application shall be submitted to the Division. The following information shall be required for an application for a permit to construct and operate a Large Type 1, Small or Large Type 2 or 3 or all Type 4 solid waste compost facilities:

(a) the name and contact information of the facility owner and operator;

(b) documentation of property ownership, including:
   (a) the property owners;
   (b) a current property deed; and
   (c) a notarized acknowledgement letter from the landowner of use of the property as a solid waste facility if the landowner is not the facility owner or operator.

(c) an aerial photograph or scaled drawing, at a scale of one inch to less than or equal to 400 feet, showing the area within one-fourth mile of the proposed site's boundaries with the following identified:
   (a) the entire property owned or leased by the person proposing the facility;
   (b) the location of all homes, wells, industrial buildings, public or private utilities, roads, watercourses, and the topography within 500 feet of the proposed facility; and
(c) the land use zoning of the proposed site.

(4) a letter from the unit of government having zoning jurisdiction over the site that states that the proposed use is allowed within the existing zoning, if any, and that necessary zoning approvals or permits have been obtained;

(5) an explanation of how the site complies with siting and design standards required by Rule .1404 of this Section;

(6) a report indicating the following:
   (a) the waste types, the source and estimated quantity of the solid waste to be composted including the source and expected quantity of any bulking agent or amendment (if applicable), expected recycling of bulking agent or compost, and seasonal variations in the solid waste type or quantity; and
   (b) for facilities that use natural soils as a pad, a soil evaluation of the site conducted by a licensed soil scientist down to a depth of four feet or to bedrock or evidence of a seasonal high water table, evaluating all physical soil properties and depth of the seasonal high water table;

(7) a site plan at a scale of one inch to less than or equal to 100 feet that delineates the following:
   (a) the existing and proposed contours, at intervals appropriate to the topography;
   (b) the location and elevations of dikes, trenches, and other water control devices and structures for the diversion and controlled removal of surface water;
   (c) the designated setbacks and property lines;
   (d) the proposed utilities and structures;
   (e) the areas for unloading, processing, active composting, curing, and storing of material;
   (f) the access roads and details on traffic patterns;
   (g) the wetlands, streams, and 100-year floodplains; and
   (h) the proposed surface and groundwater monitoring locations, if required.

(8) an operations plan that includes the following:
   (a) the name and contact information for the person responsible for the operation of the facility;
   (b) a list of personnel and the responsibilities of each position;
   (c) a schedule for operations, including days and hours that the facility will be open, preparations before opening, and procedures to be followed after closing for the day;
   (d) special precautions or procedures for operating during wind, heavy rain, snow, freezing or other adverse conditions;
   (e) a description of actions to be taken to minimize noise, vectors, and air borne particulates;
   (f) a description of the use for the finished compost, the method for removal from the site, and a contingency plan for disposal or alternative use of residues or finished compost that cannot be used in the expected manner due to poor quality or change in market conditions;
   (g) contingency plan describing actions to be taken for equipment breakdown, unauthorized waste arriving at the facility, spills, and fires;
   (h) a discussion of compliance with the operational requirements listed in Rule .1406 of this Section; and
   (i) for Large Type 1, Large Type 2, Large Type 3, and all Type 4 facilities, include the following:
      (i) a description of procedures for incoming material inspections;
      (ii) a description of procedures to meet the final product sampling and analyses requirements specified in in Rule .1407 of this Section;
      (iii) a description of procedures to meet the record keeping requirements specified in Rule .1408 of this Section; and
      (iv) a copy of all applicable local, state, and federal permits and approvals necessary for the operation of the facility.

(9) a report on the design of the facility, including:
   (a) the design capacity of the facility;
   (b) a process flow diagram of the entire facility, including the type, size, and location of all equipment used in the compost process, and feedstock flow streams. The flow streams shall indicate the quantity of materials by weight and volume;
(c) a description and sizing of the storage facilities for feedstocks, amendments, and finished compost;
(d) the means for measuring, shredding, mixing, and proportioning input materials;
(e) the anticipated process duration, including receiving, preparation, composting, curing, and distribution;
(f) a description of the location of all temperature and any other type of monitoring points within the compost windrow, and the frequency of monitoring;
(g) a description of how the temperature control and monitoring equipment will demonstrate that the facility meets the requirements in Rule .1406(11), (12), or (13) of this Section, as appropriate for the feedstock;
(h) the method of aeration provided and the capacity of aeration equipment;
(i) a description of the method to control surface water run-on and run-off and the method to control, collect, treat, and dispose of leachate generated;
(j) the separation, processing, storage, and ultimate disposal of non-compostable materials, if applicable;
(k) a description of dust control and other air emission control measures; and
(l) a description of recycling or other material handling processes used at the facility.

(10) Odor Control Plan. Operators of Large Type 2, Large Type 3, and all Type 4 facilities shall prepare, submit to the Division, and implement an odor control plan that details site specific conditions to meet the design requirement in Rule .1404(c)(4) of this Section. Existing facilities permitted prior to the readopted effective date of this Rule shall meet these requirements at the time of permit renewal. The plan shall contain the following:
(a) an identification of all onsite potential odor sources;
(b) a description of onsite weather conditions that may affect odor migration, such as prevailing wind direction, topography, and seasonal variations;
(c) a plan to monitor onsite odor and record odor data for the odor sources with the potential to migrate offsite. Data shall include date, time, site specific conditions, weather conditions, wind direction, and characteristics and intensity of odor;
(d) a description of the facility's odor complaint protocol, including forms used, odor verification by operator both onsite and offsite, what the response will be, and who will be contacted;
(e) a description of complaint record keeping; and
(f) a description of odor control design and operating best management practices to be used onsite, including:
   (i) personnel training;
   (ii) feedstock characteristics;
   (iii) the initial mixing of feedstocks to reach targeted carbon to nitrogen (C:N) ratios and moisture levels;
   (iv) maintenance of compost piles for moisture;
   (v) aeration methods, frequency, and protocol;
   (vi) leachate and liquids management;
   (vii) weather monitoring and protocol;
   (viii) management of airborne emissions; and
   (ix) windrow covering;

(11) engineering plans and specifications for the facility, including manufacturer's performance data for all equipment selected; and
(12) documentation that the local fire protection authority has been notified of the site use.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;
Eff. December 1, 1991;
Amended Eff. May 1, 1996;
A person who maintains or operates a solid waste compost facility shall maintain and operate the site to conform with the practices and operational requirements of this Rule.

1. Plan and Permit Requirements.
   (a) Approved plans and conditions of the permit shall be followed.
   (b) A copy of the permit, plans, and operational reports shall be maintained on site at all times.

2. Erosion control measures shall be practiced to prevent on-site erosion and to control the movement of silt or contaminants from the site.

3. Stormwater shall be diverted from the operations area.

4. Leachate shall be contained on site or treated prior to discharge. A National Pollutant Discharge Elimination System (NPDES) permit may be required in accordance with 15A NCAC 02B prior to the discharge of leachate to surface waters.

5. Access and Security Requirements.
   (a) Large facilities as defined in Rule .1402(e)(7) of this Section shall be secured to prevent unauthorized entry by means such as gates, chains, berms, or fences.
   (b) An operator shall be on duty at the site at all times while the facility is open for public use, and shall prevent unauthorized access to the facility operations area.
   (c) The access road to the site shall be of all-weather construction and maintained.

6. A site shall only accept those solid wastes that it is permitted to receive.

7. Safety Requirements.
   (a) Open burning of solid waste shall be prohibited.
   (b) Equipment shall be provided to control accidental fires and arrangements made with the local fire protection agency to provide fire-fighting services when needed.
   (c) Personnel training shall be provided to ensure that all employees are trained in site specific safety, remedial, and corrective action procedures.

8. Reporting Fires. Fires shall be reported to the Division orally within 24 hours of the incident and in writing within 15 days of the incident.

   (a) Signs providing information on waste that may be received, dumping procedures, the hours during which the site is open for public use, and the permit number shall be posted at the site entrance.
   (b) Traffic signs and markers shall be provided to direct traffic to and from the discharge area.
   (c) Signs shall be posted stating that no hazardous waste, asbestos containing waste, or medical waste may be received at the site.

10. Monitoring Requirements.
    (a) Temperature monitoring shall meet the record-keeping requirements in Rule .1408 of this Section.
    (b) The temperature of all compost produced shall be monitored sufficiently to ensure that the pathogen reduction criteria are met. Onsite thermometers shall be calibrated annually and records of calibration shall be maintained.

11. Compost process at Type 1 and Type 2 facilities shall be maintained at or above 55 degrees Celsius (131 degrees F) for three days and aerated to maintain elevated temperatures.

12. Vector Attraction Reduction (VAR). Types 2, 3 and 4 facilities shall maintain the compost process at a temperature above 40 degrees Celsius (104 degrees F) for 14 days or longer and the average temperature for that time shall be higher than 45 degrees Celsius (113 degrees F).

13. Process to Further Reduce Pathogens (PFRP). The composting process shall qualify as a process to further reduce pathogens for all Type 3 and Type 4 facilities. The following shall be acceptable methods:
   (a) the windrow composting method, in which the following requirements apply:
      (i) aerobic conditions shall be maintained during the composting process;
      (ii) a temperature of 131 degrees F (55 degrees Celsius) or greater shall be maintained in the windrow for at least 15 days; and
      (iii) during the high temperature period, the windrow shall be turned at least five times.
   (b) the static aerated pile composting method, in which the following requirements apply:
      (i) aerobic conditions shall be maintained during the composting process; and
(ii) the temperature of the compost pile shall be maintained at 131 degrees F (55 degrees Celsius) or greater for at least three days.

(c) the within-vessel composting method, in which the temperature in the compost piles shall be maintained at a minimal temperature of 131 degrees F (55 degrees Celsius) for three days.

(14) Putrescible feedstocks added to the compost process shall be incorporated using methods to minimize odor such as reducing mixing time or the addition of organic material.

(15) The finished compost shall meet the classification, testing, and distribution requirements in Rule .1407 of this Section.

(16) The amount of compost stored at the facility shall not exceed the designed storage capacity.

(17) The site shall be operated to minimize odors at the property boundary by means such as windrow covers, maintaining design process indicator parameters, and maintaining carbon to nitrogen design ratios.

(18) Odor Corrective Action.

(a) If the Odor Control Plan prepared in accordance with Rule .1405(10) of this Section has been followed and the Division determines during a site visit that offsite odors are not being minimized, the owner or operator shall submit to the Division an Odor Corrective Action Report. The report shall contain the following:

(i) a summary of the actions taken in the Odor Control Plan;

(ii) an identification of onsite odor sources, in order of severity;

(iii) an evaluation and identification of odorous feedstocks as they relate to odor complaints;

(iv) an evaluation of current operation process indicators including carbon to nitrogen (C:N) ratio, pH, moisture content, oxygen levels, temperature, porosity, and particle size;

(v) an evaluation of the compost recipe calculation with C:N ratio testing that is performed by an independent laboratory for each feedstock;

(vi) an identification of potential offsite odor receptors based on their proximity to the odor sources and on weather patterns;

(vii) a description of new odor reduction methods, if proposed, and an evaluation of their feasibility, in terms of effectiveness, cost, and equipment needs;

(ix) an evaluation of the elimination of specific odorous feedstocks; and

(x) recommendations for implementing new corrective action measures for odor minimization, including a schedule.

(b) The owner or operator shall implement the new corrective action measures for odor minimization recommended in the Odor Corrective Action Report if the Division determines that the new corrective measures will reduce odors outside of the property boundary and will comply with the requirements of this Section. The Division may require the elimination of specific odorous feedstocks if a facility fails to meet the odor minimization required by Item (17) of this Rule. The Division shall provide written notice to the owner or operator of the determination.

(c) The owner or operator shall develop and implement additional corrective action measures if necessary to meet the requirements of Item (17) of this Rule to minimize odors at the property boundary.

(19) Compost Facility Training Requirements.

(a) Facilities permitted as Large Type 1, Large Type 2, all Type 3, and all Type 4 shall have an operator, supervisor, or manager trained in accordance with the requirements in G.S. 130A-309.25. No less than one trained operator, supervisor, or manager meeting the requirements of this Sub-item shall be onsite during the facility's operating hours or available at a phone number provided in the facility permit.

(i) Training in accordance with G.S. 130A-309.25(c) shall be required every five years.

(ii) Persons who have achieved and maintain compost operator certification by the US Composting Council Certification Commission or equivalent shall be considered as having met the training requirements in G.S. 130A-309.25 for the permitted facility.

(b) Owners or operators shall provide annual training for facility staff, including a review of the operations plan and permit documents.
(c) Documentation of training required in Sub-items (a) and (b) of this Item shall be maintained at the facility and made available to the Division upon request.

(d) Facilities permitted before the readopted effective date of this Rule shall meet the requirements of Sub-item (a) of this Item within three years of the readopted effective date of this Rule. Facilities permitted after the readopted effective date of this Rule shall meet the requirements of Sub-item (a) of this Item within 18 months of permit issuance.

History Note:  
Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;  
Eff. December 1, 1991;  
RRC objection Eff. April 18, 1996 due to lack of statutory authority;  
Amended Eff. June 1, 1996;  

15A NCAC 13B .1407 CLASSIFICATION, TESTING, AND DISTRIBUTION OF SOLID WASTE COMPOST PRODUCTS

(a) Compost or mulch that is produced at a Type 1 facility, is free from offensive odor, contains no sharp particles, and, for compost, has met the temperature requirements in Rule .1406(11) of this Section shall be classified Grade A and have unrestricted application and distribution. Compost analytical testing shall not be required for Type 1 compost if temperature requirements in Rule .1406(11) of this Section have been met and documented.

(b) Compost produced from Type 2, 3, and 4 facilities shall be sampled and analyzed as follows:

(1) a composite sample of the compost produced at each compost facility shall be analyzed at intervals of every 20,000 tons of compost produced or every six months, whichever comes first, for metals and pathogens;

(2) compost samples shall be analyzed for the metals listed in 40 CFR 503.13(b)(3), except that analysis for mercury shall not be required for Type 2 and 3 facilities, and analysis for arsenic and selenium shall not be required for Type 2 facilities. The concentration of metals in compost offered for sale or distribution to the public shall not exceed the pollutant concentration limits listed in 40 CFR 503.13(b)(3). 40 CFR 503.13 and 40 CFR 503.32 are incorporated by reference including subsequent amendments and editions. Copies of the Code of Federal Regulations may be obtained from the U.S. Government Publishing Office website at www.gpo.gov at no cost;

(3) compost samples shall be analyzed for pathogens, either for fecal coliform or salmonella bacteria. The concentration of pathogens in compost offered for sale or distribution to the public shall not exceed the concentration limits listed in 40 CFR 503.32(a)(3);

(4) sample collection, preservation, and analysis shall assure valid and representative results. At least three individual samples of equal volume shall be taken from each batch produced in separate areas along the side of the batch. Each sampling point shall be sampled from a depth of two to six feet into the pile from the outside surface of the pile as follows:

(A) metals samples shall be composited and accumulated over a six-month period or at intervals of every 20,000 tons of product produced, whichever comes first; and

(B) pathogens samples shall be a representative composite sample of the compost and shall be processed within a period of time required by the testing procedure;

(5) analytical testing methods shall be in accordance with the procedures of one of the following:

(A) EPA publication SW-846, "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods." This document is incorporated by reference, including subsequent amendments and editions, and may be obtained free of charge at https://www.epa.gov/hw-sw846;

(B) the U.S. Department of Agriculture/U.S. Compost Council publication "Test Methods for the Examination of Composting and Compost" (TMECC). This document is incorporated by reference including subsequent amendments and editions, and may be obtained for a fee of three hundred fifty dollars ($350.00) at https://compostingcouncil.org/tmec/ or a copy may be reviewed free of charge at the Division of Waste Management, Solid Waste Section office at 217 West Jones Street, Raleigh, N.C. 27603; or

(C) other methods that are approved by the Division as providing equivalent standards of analysis; and
(6) The Division may decrease or increase the parameters to be analyzed or the frequency of analysis based upon monitoring data, changes in the waste stream or processing, or information regarding the potential for the presence of contaminants that are not required to be analyzed in this Paragraph.

(c) Compost produced from Types 2, 3, and 4 facilities that meet the requirements of Subparagraphs (b)(2) and (b)(3) of this Rule shall be classified Grade A compost and shall have unlimited, unrestricted distribution, except as otherwise determined by the Division based on analyses of parameters pursuant to Subparagraph (b)(6) of this Rule.

(d) The facility operator shall be responsible for meeting the requirements of the North Carolina Department of Agriculture and Consumer Services Plant Industry Division Seed and Fertilizer Section concerning the distribution of this product.

History Note:  Authority G.S. 130A-309.11;
Eff. December 1, 1991;
RRC objection Eff. April 18, 1996 due to lack of statutory authority;
Amended Eff. June 1, 1996;

15A NCAC 13B .1408 RECORDKEEPING AND REPORTING REQUIREMENTS

(a) Record Keeping: Facility owners or operators shall maintain records for no less than five years. The following records shall be available for inspection by Division personnel during the facility's normal business hours and shall be sent to the Division upon request:

1. daily operational records that include temperature data (length of the composting period) and quantity of material processed;
2. analytical results of compost testing;
3. the quantity, type, and source of waste received;
4. the quantity of waste processed into compost;
5. the odor management records required by Rule .1405(10) of this Section; and
6. the quantity of compost removed for use or disposal and the market or permitted disposal facility.

(b) Annual Reporting: An annual report for the period July 1 to June 30 shall be submitted by all facility owners or operators to the Division by August 1 of each year and shall contain:

1. the facility name, address, and permit number;
2. the total quantity in tons, with sludge values expressed in dry weight, and the type of waste received at the facility during the year covered by the report, including tons of waste received from local governments of origin;
3. the total quantity in tons of compost produced at the facility during the year covered by the report;
4. the total quantity in tons of compost removed for use or disposal from the facility during the year covered by the report;
5. monthly temperature monitoring to support Rule .1406 of this Section; and
6. the results of analytical testing required by Rule .1407 of this Section.

(c) Yearly totals of solid waste received and composted shall be reported back to the local government of origin for annual recycling reporting.

History Note:  Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;
Eff. December 1, 1991;
RRC objection Eff. April 18, 1996 due to lack of statutory authority;
Amended Eff. June 1, 1996;

15A NCAC 13B .1409 ALTERNATIVE PROCEDURES, VERMICOMPOSTING, AND ANAEROBIC DIGESTION REQUIREMENTS

(a) An owner or operator of a composting facility subject to the provisions of this Section may request in writing the approval of an alternative procedure for the facility or the compost that is produced. The following information shall be submitted to the Solid Waste Section:

1. the specific facility for which the exception is requested;
2. the specific provisions of this Section for which the exception is requested;
3. the basis for the exception;
(4) the alternate procedure or requirement for which the approval is sought and a demonstration that the alternate procedure or requirement provides equivalent protection of the public health and the environment; and

(5) a demonstration of the effectiveness of the proposed alternate procedure.

The Division shall approve the request if the alternative procedure is equivalent to procedures provided in the rules of this Section and is protective of the public health and the environment.

(b) Vermicompost Facilities. This Paragraph shall be applicable to vermicompost facilities that receive solid waste as defined in G.S. 130A-290. Facilities that receive only animal manure or only municipal wastewater treatment sludge, or both, shall not be subject to this Paragraph.

(1) The following operations shall be exempt from the requirements of this Section:
   (A) backyard vermicomposting; and
   (B) farming operations where the vermicompost is produced from materials grown on the owner's land and re-used on the owner's land.

(2) Vermicompost facilities meeting the following conditions shall be exempt from the permitting requirements in Rule .1405 of this Section;
   (A) the site receives pre- and post-consumer food waste, manure, vegetative agricultural waste, yard and garden waste, untreated, unpainted, and uncontaminated wood material, source separated paper, or any combination thereof;
   (B) no more than 100 cubic yards of material shall be onsite at any time. This volume shall include feedstock storage, processing, pre-composting, and active vermicomposting, but shall not include finished vermicompost.
   (C) outdoor areas of the site used for feedstock storage, processing, pre-composting, or vermicomposting in open areas or open containers or bins shall meet the siting criteria and setback requirements of Rule .1404(a)(1) through (a)(10) of this Section, except that the minimum setback to the property line shall be at least 50 feet and the minimum setback to residences or dwellings not owned and occupied by the owner or operator shall be at least 200 feet;
   (D) outdoor feedstock storage, processing, pre-composting, and vermicomposting operations areas, that are enclosed on all sides in containers or bins shall maintain a minimum setback to the property line of at least 25 feet;
   (E) the site is operated to prevent the release of particulates and odors outside of the property boundary, and the site does not attract vectors such as insects and rodents;
   (F) surface water shall be diverted from the operational and storage areas. Leachate shall be contained onsite and treated to meet the standards of the applicable off-site disposal method;
   (G) for facilities producing vermicompost that is distributed to the public or used in public areas, the owner meets the pathogen testing and record keeping requirements of Rule .1407(b) and .1408(a) of this Section for a Type 3 facility; and
   (H) the site operates in accordance with all applicable State or local laws, ordinances, rules, regulations, or orders.

(3) A permit shall be required for vermicompost facilities that do not meet the conditions of Subparagraphs (1) or (2) of this Paragraph. A permit application for a vermicomposting facility shall include the information required by Rules .1404 and .1405 of this Section, except that Rules .1405(9)(f) through (9)(h) of this Section do not apply. Operations or parts of operations that are indoors shall be exempt from the siting requirements of Rule .1404 of this Section. Permitted vermicomposting facilities shall be subject to:
   (A) Rule .1406(1) through (9), (14), and (16) of this Section;
   (B) Rule .1407 of this Section;
   (C) Rule .1408 of this Section; and
   (D) Rule .1410 of this Section.

(c) Anaerobic Digestion Facilities. This Paragraph shall be applicable to anaerobic digestion facilities that receive solid waste as defined in G.S. 130A-290. Facilities that receive only animal manure or only municipal wastewater treatment sludge, or both, shall not be subject to this Paragraph.

(1) A solid waste management permit shall be required for the areas of the facility that manage solid waste. These areas shall include the incoming waste receiving area, the digestate handling area, and the
digestate final disposition and any other areas of the operation where solid waste is exposed to the environment.

(2) A permit application shall contain:
   (A) the information required by Rules .1404 and .1405 of this Section, with the exception of Rule .1405(9)(f) through (9)(h). Operations or parts of operations that are in buildings enclosed on all sides shall be exempt from the siting requirements of Rule .1404 of this Section; and
   (B) drawings of the following within the waste management areas:
       (i) hoppers, bays, or vessels, and all other site-specific features related to solid waste management activities; and
       (ii) for indoor operations, plan and profile drawings of the buildings with areas and features labeled.

(3) Permitted anaerobic digestion facilities shall be subject to:
   (A) Rule .1406(1) through (9), (14), and (16) of this Section;
   (B) Rule .1407 of this Section for the digestate;
   (C) Rule .1408 of this Section; and
   (D) Rule .1410 of this Section.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;
Eff. December 1, 1991;
RRC objection due to lack of statutory authority Eff. April 18, 1996;
Amended Eff. June 1, 1996;

15A NCAC 13B .1410 CLOSURE REQUIREMENTS
(a) When the permitted compost facility ceases operations, the owner or operator shall meet the following conditions:
   (1) all feedstock and unfinished compost materials shall be removed from the site and taken to a permitted solid waste facility within 180 days;
   (2) finished compost materials left onsite shall comply with G.S. 130A-309.05; and
   (3) the owner or operator shall notify the Division in writing upon completion of the requirements of Subparagraph (1) of this Paragraph.
(b) When a permitted compost facility has been closed in accordance with the requirements of Subparagraph (a) of this Rule, the permit shall be terminated. Future compost operations at the site shall require submittal of a new permit application in accordance with Rule .1405 of this Section.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29;

SECTION .1500 - STANDARDS FOR SPECIAL TAX TREATMENT OF RECYCLING AND RESOURCE RECOVERY EQUIPMENT AND FACILITIES

Rules .1501 - .1514 of Title 15A Subchapter 13B of the North Carolina Administrative Code (T15A.13B .1501 - .1514); have been transferred and recodified from Rules .0501 - .0514 of Title 10 Subchapter 10C of the North Carolina Administrative Code (T10.10C .0501 - .0514), effective June 27, 1991.

15A NCAC 13B .1501 RESOURCE RECOVERING FACILITIES
(a) A resource recovering facility is a building, or buildings, or parts thereof, and includes any equipment exclusively and integrally used therein for obtaining material or energy resources from solid waste. The facility also includes land occupied by the buildings and equipment.
(b) Facilities used to collect, sort, or otherwise prepare solid waste for reuse or recycling are resource recovering facilities.
(c) Incidental or supportive facilities and equipment as defined in .1506(a) of this Section do not qualify for special tax treatment as resource recovering facilities.


15A NCAC 13B .1502 RESOURCE RECOVERING EQUIPMENT
Resource recovering equipment is equipment exclusively and integrally used in the actual process of recovering material or energy resources from solid waste. To qualify, the equipment need not be specially designed for the resource recovery process.


15A NCAC 13B .1503 RECYCLING FACILITIES
(a) A recycling facility is a building, or buildings, or parts thereof, and includes any equipment exclusively and integrally used in a process by which recovered resources are transformed into new products in such a manner that the original materials lose their identity. Recovered resources are materials that have been recovered from solid waste. The facility also includes the land occupied by the buildings and equipment.
(b) Incidental or supportive facilities and equipment as defined in .1506(a) of this Section do not qualify for special tax treatment as recycling facilities.


15A NCAC 13B .1504 RECYCLING PROCESS
(a) To constitute recycling, the recovered materials must be so altered in form that the original materials lose their identity and a new product is formed. A physical rather than a chemical change may be all that occurs but a substantial change in the form of the materials must occur.
(b) The recycling process ends when a new product has been created from the recovered materials, even though the complete manufacturing process involving the recycled products has not concluded.


15A NCAC 13B .1505 RECYCLING EQUIPMENT
Recycling equipment is equipment exclusively and integrally used in the actual process by which recovered resources are transformed into new products in such a manner that the original materials lose their identity. The equipment need not be specially designed for the recycling process.


15A NCAC 13B .1506 INCIDENTAL OR SUPPORTIVE FACILITIES AND EQUIPMENT
(a) Incidental or supportive facilities and equipment consist of a building, buildings, or parts thereof, land or equipment, which provide administrative or maintenance services to the resource recovery or recycling process or which provides a comfort or convenience for the employees.
(b) Buildings, land and equipment are used in the actual resource recovering or recycling process if they are an integral part of the process by which:

1. material or energy resources are obtained from solid waste, or
2. recovered resources are transformed into new products in such a manner that the original products lose their identity.

(c) Qualifying equipment and facilities must be used in a mechanical or chemical process, in transportation, or in storage.

History Note: Authority G.S. 130A-294(a)(3);
Eff. June 2, 1976;

15A NCAC 13B .1507 OPERATIONAL REQUIREMENTS FOR FACILITIES AND EQUIPMENT
All resource recovering and recycling facilities and equipment shall be in full compliance with the rules on solid waste management in 15A NCAC 13B adopted by the Commission for Public Health.

History Note: Authority G.S. 130A-294(a)(3);
Eff. June 2, 1976;
Readopted Eff. December 5, 1977;

15A NCAC 13B .1508 APPLICATION FOR TAX CERTIFICATION
(a) For the purposes of this Rule, the following definitions shall apply:

1. "Person" means any individual, partnership, firm, organization, corporation, association, business trust, company, or other legal entity.
2. "Department" means the Secretary of the Department of Environment, Health and Natural Resources or his authorized representative.

(b) No application for tax certification shall be received from any person unless submitted in triplicate to the Department containing the following information:

1. general layout of resource recovery or recycling facilities and equipment;
2. specify and describe facilities and parts thereof to be considered (including therewith acreage involved);
3. specify and describe equipment exclusively used in resource recovering or recycling processes;
4. construction schedule if not yet completed, including anticipated date of final completion; and
5. the individual primarily responsible for management operation and maintenance of the facilities and equipment.

(c) The Department reserves the right to request additional information in the event the above does not provide sufficient specificity.

(d) Upon proper receipt of the above information, a representative of the Division of Solid Waste Management shall inspect said facilities and equipment.

(e) Evaluation of such facilities and equipment shall be made in accordance with these rules. Based thereon, the Division of Solid Waste Management shall issue a written decision denying or granting tax certification. Where a request is denied, such decision shall enumerate the reasons therefor.

History Note: Authority G.S. 130A-294(a)(3);
Eff. June 2, 1976;
Readopted Eff. December 5, 1977;

15A NCAC 13B .1509 APPEALS

History Note: Authority G.S. 130A-294(a)(3);
Eff. June 2, 1976;
15A NCAC 13B .1510 SEVERABILITY
If any provision of these standards or its application to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the standards that can be given effect without the invalid provisions or applications, and to this end the provisions of these standards are declared to be severable.

History Note: Authority G.S. 130A-294(a)(3);
Eff. June 2, 1976;
Readopted Eff. December 5, 1977;

15A NCAC 13B .1511 PAMPHLET

History Note: Authority G.S. 130A-294(a)(3);
Eff. June 2, 1976;
Readopted Eff. December 5, 1977;
Amended Eff. September 1, 1990; June 30, 1980;
Expired Eff. February 1, 2018 pursuant to G.S. 150B-21.3A.

15A NCAC 13B .1512 FACILITIES FOR REDUCING HAZARDOUS WASTE GENERATED
(a) A facility for the purpose of reducing the volume of hazardous waste generated is a building or buildings, or parts thereof, constructed for the purpose of reducing the amount of hazardous waste generated by an existing industrial facility and includes any equipment exclusively and integrally used therein for reducing the volume of hazardous waste generated by the existing industrial facility. The facility also includes any land necessarily acquired for occupation by the buildings or equipment.
(b) An existing industrial facility is a building or buildings, or parts thereof, which house an industrial process that has been or is capable of commercially feasible operation in the manner for which it was designed before the addition of the facility or equipment for reducing the volume of hazardous waste generated.
(c) Incidental or supportive facilities and equipment as defined in Rule .1506(a) of this Section do not qualify for special tax treatment as equipment or facilities for the purpose of reducing the volume of waste generated.

History Note: Authority G.S. 130A-294(a)(3);
Eff. October 1, 1983;

15A NCAC 13B .1513 EQUIPMENT FOR REDUCING HAZARDOUS WASTE GENERATED
(a) Equipment for the purpose of reducing the volume of hazardous waste generated is equipment exclusively and integrally used in the actual process by which the volume of hazardous waste generated by an existing industrial process is reduced. The equipment need not be specially designed for the particular volume reduction process for which it is used.
(b) An existing industrial process is an industrial process that has been or is capable of commercially feasible operation in the manner for which it was designed before the addition of the equipment for reducing the volume of hazardous waste generated.

History Note: Authority G.S. 130A-294(a)(3);
Eff. October 1, 1983.

15A NCAC 13B .1514 APPEALS PROCEDURE
Appeals concerning the interpretation and enforcement of the rules in this Section shall be made in accordance with G.S. 150B.
SECTION .1600 - REQUIREMENTS FOR MUNICIPAL SOLID WASTE LANDFILL FACILITIES (MSWLFs)

15A NCAC 13B .1601 PURPOSE, SCOPE, AND APPLICABILITY

(a) Purpose. The purpose of this Section is to regulate the siting, design, construction, operation, closure and post-closure of all municipal solid waste landfill facilities, MSWLFs.

(b) Scope. This Section describes the performance standards, application requirements, and permitting procedures for all municipal solid waste landfill facilities. The requirements of this Section are intended to:

1. Establish the State standards for MSWLFs to provide for effective disposal practices and protect the public health and environment.
2. Coordinate other State Rules applicable to landfills.
3. Facilitate the transition for existing landfill facilities which continue to operate MSWLF units.

(c) Applicability. Owners and operators of new and existing landfill facilities including a MSWLF unit(s) shall conform to the requirements of this Section as follows:

1. Municipal solid waste landfill units which did not receive solid waste after October 9, 1991 shall comply with the Solid Waste Permit, the Conditions of Permit, and Rule .0510.
2. MSWLF units that received solid waste after October 9, 1991 but stopped receiving waste before October 9, 1993 shall comply with the Solid Waste Permit, the Conditions of Permit, and Rule .0510. The cap system shall be installed by October 9, 1994 and shall meet the criteria set forth in Subparagraph (c)(1) of Rule .1627 of this Section. Owners or operators of MSWLF units that fail to complete cover installation by this date will be subject to all of the requirements applicable to existing MSWLFs.
3. Effective dates.
   (A) All MSWLF units that receive waste on or after October 9, 1993, except those units that qualify for an exemption as specified in Part (c)(3)(B) of this Rule shall comply with the requirements of this Section.
   (B) A MSWLF unit that meets the conditions in Subparts (i) through (vi) of this Subparagraph is exempt from the requirements of Section .1600 other than Rule .1627. This exemption shall not be effective unless the amendment to the federal rule 40 CFR Part 258.1 (e)(1) and (2) extending the effective dates is published in the Federal Register as a final rule.
   (i) The MSWLF unit disposed of 100 tons per day or less of solid waste between October 9, 1991 and October 9, 1992.
   (ii) The MSWLF unit does not dispose of more than an average of 100 TPD of solid waste each month between October 9, 1993 and April 9, 1994.
   (iii) The MSWLF unit is not on the National Priorities List (NPL) as found in Appendix B to 40 CFR Part 300, which is hereby incorporated by reference including any subsequent amendments and editions. Copies of this material are available for inspection and may be obtained at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, N.C. at no cost.
   (iv) The MSWLF unit owner and operator shall notify the Division by November 1, 1993, that they shall stop receiving waste at their MSWLF unit before April 9, 1994. Notification to the Division shall include a statement of compliance with all conditions specified in Part (c)(3)(B) of this Rule.
   (I) If the MSWLF unit is owned or operated by a unit of local government, notification shall be in the form of a Resolution adopted by the Governing Board.
   (II) If the MSWLF unit is privately owned or operated, the notification shall be executed by the owner and operator or in the case of a corporation, by a corporate officer with legal authority to bind the corporation. All signatures shall be properly attested and notarized.
Waste received at the MSWLF unit shall cease prior to April 9, 1994.

MSWLF units which meet all conditions of exemption required within Subparagraph (c)(3) of this Rule shall complete installation of the cap system in accordance with Subparagraph (c)(1) of Rule .1627 of this Section by October 9, 1994.

MSWLF units failing to satisfy the requirements of this Section constitute open dumps, which are prohibited under Section 4005 of RCRA. Closure of open dumps that receive household waste shall meet the requirements of this Section.

The owner or operator of a MSWLF facility shall comply with any other applicable Federal and State laws, rules, regulations, or other requirements.

History Note: Filed as a Temporary Amendment Eff. October 9, 1993, for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;
Authority G.S. 130A-294;
Eff. October 9, 1993;

15A NCAC 13B .1602 DEFINITIONS
This Rule contains definitions for terms that appear throughout this Section; additional definitions appear in the specific Rules to which they apply.

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 Rule .1627 of this Section.
2. "Active portion" means that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with Rule .1627 of this Section.
3. "Aquifer" means a geological formation, group of formations, or portion of a formation capable of yielding significant quantities of ground water to wells or springs.
4. "Base liner system" means the liner system installed on the MSWLF unit's foundation to control the flow of leachate.
5. "Cap system" means a liner system installed over the MSWLF unit to minimize infiltration of precipitation and contain the wastes.
6. "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.
7. "Existing MSWLF unit" means any municipal solid waste landfill unit that is receiving solid waste as of October 9, 1993 and is not a new MSWLF unit. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.
8. "Ground water" means water below the land surface in a zone of saturation.
10. "Household waste" means any solid waste derived from households including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.
11. "Industrial solid waste" means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.
12. "Landfill facility" means all contiguous land and structures, other appurtenances, and improvements on the land within the legal description of the site included in or proposed for the Solid Waste Permit.
Existing facilities are those facilities which were permitted by the Division prior to October 9, 1993. Facilities permitted on or after October 9, 1993 are new facilities.

13. "Landfill unit" means a discrete area of land or an excavation that receives solid waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill may be publicly or privately owned.

14. "Lateral expansion" means a horizontal expansion of the waste boundaries of an existing MSWLF unit.

15. "Leachate" means a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

16. "Liner system" means an engineered environmental control system which can incorporate filters, drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures.

17. "Municipal solid waste landfill unit" means a discrete area of land or an excavation that receives household waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill may be publicly or privately owned. A MSWLF unit may also be permitted to receive other types of non-hazardous solid waste. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion.

18. "New MSWLF unit" means any municipal solid waste landfill unit that has not received waste prior to October 9, 1993.

19. "Open burning" means the combustion of solid waste without:
   (a) Control of combustion air to maintain adequate temperature for efficient combustion;
   (b) Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and
   (c) Control of the emission of the combustion products.

20. "Project engineer" means the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management facility conforms to the Division approved plan, the permit to construct and the Rules specified in this Section. All certifications must bear the seal and signature of the professional engineer and the date of certification.

21. "Run-off" means any rainwater that drains over land from any part of a facility.

22. "Run-on" means any rainwater that drains over land onto any part of a facility.

23. "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.

24. "Waste management unit boundary" means a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1603 GENERAL APPLICATION REQUIREMENTS AND PROCESSING
(a) Applicability. An owner and operator of a proposed or existing facility shall submit an application document as detailed in Rule .1617 of this Section according to the criteria and scheduling requirements set forth in this Paragraph.

(1) New facility. An owner and operator proposing to establish a MSWLF facility according to the following criteria shall submit a Site Study and subsequently, an application for a permit to construct as set forth in Paragraph (a) of Rule .1617.
   (A) The owner and operator proposes to establish a new facility not previously permitted by the Division.
   (B) The owner or operator proposes expanding the landfill facility in order to expand the MSWLF unit boundary approved in accordance with Subparagraph (a)(1) of Rule .1618.
   (C) The owner or operator of an existing facility is scheduled to close an existing MSWLF unit not constructed with a base liner system and proposes to establish a new MSWLF unit.
   (D) A transfer of facility ownership is proposed.
   (E) A substantial change to the waste stream defined in the effective permit.

(2) Amendment to the permit. A permit to construct issued in accordance with Paragraph (c) of this Rule approves a facility plan for the life of the MSWLF facility and a set of plans for the initial phase of
landfill development. The owner and operator shall prepare an application to amend the permit to construct for any subsequent phase of landfill development in accordance with Paragraph (b) of Rule .1617 and submit the application:

(A) At least 180 days prior to the date scheduled for commencing construction; or
(B) Five years from the issuance date of the initial permit to construct or the most recent amendment, whichever occurs first.

(3) Modifications to the permit. An owner or operator proposing changes to the plans approved in the permit shall request prior approval from the Division in accordance with Paragraph (c) of Rule .1617.

(4) Transition for existing facilities.
(A) Existing MSWLF units. The owner and operator of an existing MSWLF unit shall submit an application for continuing operation and closing the MSWLF unit. The application shall be prepared in accordance with Paragraph (d) of Rule .1617 and shall be submitted on or before April 9, 1994. The operation plan required in the transition application shall be prepared and submitted according to Rule .1625 of this Section.

(B) Lateral expansion and new MSWLF units. Construction of a lateral expansion of an existing MSWLF unit or a new MSWLF unit is subject to the application requirements for permit renewal set forth in Subparagraph (5) of this Paragraph, unless the criteria set forth in Part (1)(C) of this Paragraph is applicable.

(5) Permit renewal. The owner and operator shall prepare and submit an application for permit renewal in accordance with Paragraph (e) of Rule .1617 and the following:
(A) The following criteria is established for the scheduling permit renewal:
(i) Location of the MSWLF unit conforms to the requirements set forth in Items (1), (2), (3), (4), (5), and (6) of Rule .1622;
(ii) Construction of the MSWLF unit is approved by the effective permit and conforms to the requirements of Subparagraph (b)(1) of Rule .1624; and
(iii) Updated operation, closure and post-closure, and monitoring plans meet the requirements set forth in this Section.

(B) An owner or operator that demonstrates compliance with the criteria set forth in Part (A) of this Subparagraph shall submit an application five years from the issuance date of the original permit to construct or at least 180 days prior to the date scheduled for constructing a phase of landfill development not approved in the effective permit to construct, whichever occurs first.

(C) An owner or operator that cannot demonstrate compliance with the criteria set forth in Part (A) of this Subparagraph shall submit an application at least 180 days prior to the date scheduled for commencing construction of the base liner system.

(b) Application format guidelines. All applications and plans required by this Section shall be prepared in accordance with the following guidelines:

(1) The initial application shall:
(A) Contain a cover sheet, stating the project title and location, the applicant's name, and the engineer's name, address, signature, date of signature and seal; and
(B) Contain a statement defining the purpose of the submittal signed and dated by the applicant.

(2) The text of the application shall:
(A) Be submitted in a three ring binder;
(B) Contain a table of contents or index outlining the body of the application and the appendices;
(C) Be paginated consecutively; and
(D) Identify revised text by noting the date of revision on the page.

(3) Drawings. The engineering drawings for all landfill facilities shall be submitted using the following format:
(A) The sheet size with title blocks shall be at least 22 inches by 34 inches.
(B) The cover sheet shall include the project title, applicant's name, sheet index, legend of symbols, and the engineer's name, address, signature, date of signature, and seal.
(C) Where the requirements do not explicitly specify a minimum scale, maps and drawings shall be prepared at a scale which adequately illustrates the subject requirement(s).

(4) Number of copies. An applicant shall submit a minimum of five copies of each original application document and any revisions to the Division. The Division may request additional copies as necessary.

(c) Permitting and public information procedures.
(1) Purpose, Scope and Applicability.

(A) Purpose. The permitting process shall provide for public review of and input to permit documents containing the applicable design and operating conditions and shall provide for consideration of comments received and notification to the public of the final permit design.

(B) Scope. Public participation in the permitting process shall ensure that the public is informed regarding decisions affecting the management of MSWLFs located in their community. Public comment regarding permit renewals for existing facilities shall be limited to new information pertinent to the permit to construct a lateral expansion or a new MSWLF unit.

(C) Applicability. Applications for Permit to Construct a new facility or permit renewals for an existing facility or a modification to the permit involving corrective remedy selection required by Rule .1636 of this Section shall be subject to the requirements of this Paragraph. Applications submitted in accordance with Subparagraphs (a)(2), (a)(3), and (a)(4)(A) of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.

(A) Once an application is complete, the Division shall tentatively decide whether the permit should be issued or denied.

(B) If the Division decides the permit should be denied, a notice to deny shall be sent to the applicant. Reasons for permit denial shall be in accordance with Rule .0203(e) of this Subchapter.

(C) If the Division tentatively decides the permit should be issued, a draft permit shall be prepared.

(D) A draft permit shall contain (either expressly or by reference) all applicable terms and conditions for the permit.

(E) All draft permits shall be subject to the procedures of Subparagraphs (3), (4), (5), (6), (7) and (8) of this Paragraph, unless otherwise specified in those Subparagraphs.

(3) Fact Sheets.

(A) A fact sheet shall be prepared for every draft permit or notice to deny the permit.

(B) The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit to include, when applicable:

(i) A brief description of the type of facility or activity which is the subject of the draft permit;

(ii) The type and quantity of wastes which are proposed to be or are being disposed of;

(iii) A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the permit application;

(iv) A description of the procedures for reaching a final decision on the draft permit, including:

(I) The beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph and the address where comments will be received;

(II) Procedures for requesting a public hearing; and

(III) Any other procedures by which the public may participate in the final decision; and

(v) Name and telephone number of a person to contact for additional information.

(C) The Division shall send this fact sheet to the applicant and, upon request to any other person.

(4) Public Notice of Permit Actions and Public Comment Period.

(A) Scope.

(i) The Division shall give public notice that the following actions have occurred:

(I) A draft permit has been prepared; or

(II) A public hearing has been scheduled under Subparagraph (6) of this Paragraph; or

(III) A notice of intent to deny a permit has been prepared under Part (2)(B) of this Paragraph.

(ii) No public notice is required when a request for a permit modification is denied.
(iii) Written notice of denial shall be given to the permittee.
(iv) Public notices may describe more than one permit or permit action.

(B) Timing.
(i) Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall allow at least 45 days for public comment.
(ii) Public notice of a public hearing shall be given at least 15 days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)

(C) Methods. Public notice of activities described in Subpart (A)(i) of this Subparagraph shall be given by the following:
(i) By posting in the post office and public places of the municipalities nearest the site under consideration; or
(ii) By publication of a notice in a daily or weekly local newspaper of general circulation; and
(iii) By any other method deemed necessary or appropriate by the Division to give actual notice of the activities to persons potentially affected.

(D) Contents.
(i) General Public Notices. All public notices issued under this Part shall contain the following minimum information:
(I) Name, address and phone number of the office processing the permit action for which notice is being given;
(II) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;
(III) A brief description of the business conducted at the facility or activity described in the permit application including the size and location of the facility and type of waste accepted;
(IV) A brief description of the comment procedures required by Subparagraphs (5) and (6) of this Paragraph, including a statement of procedures to request a public hearing (unless a hearing has already been scheduled), and other procedures by which the public may participate in the final permit decision;
(V) Name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of draft permits and fact sheets;
(VI) A description of the time frame and procedure for making a final determination on this facility application approval or disapproval;
(VII) Any additional information considered necessary or proper as required by the Division.

(ii) Public Notices for Public Hearing. In addition to the general public notice described in Subpart (i) of this Part, the public notice of a public hearing shall contain the following information:
(I) Reference to the dates of previous public notices relating to the permit action;
(II) Date, time, and place of the public hearing; and
(III) A brief description of the nature and purpose of the public hearing, including the applicable rules and procedures; and
(IV) A concise statement of the issues raised by the persons requesting the hearing.

(5) Public Comments and Requests for Public Hearings. During the public comment period provided, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments shall be considered in making the final decision and shall be answered as provided in Subparagraph (9) of this Paragraph.

(6) Public Hearings.
(A) Public Hearing Criteria.
The Division shall hold a public hearing whenever on the basis of requests, a significant degree of public interest in a draft permit(s) is determined.

(ii) The Division may also hold a public hearing at its discretion whenever such a hearing might clarify one or more issues involved in the permit decision.

(iii) Public hearings held pursuant to this Rule shall be at a location convenient to the nearest population center to the subject facility.

(iv) Public notice of the hearing shall be given as specified in Subparagraph (4) of this Paragraph.

(B) Any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements, and the submission of statements in writing may be required. The public comment period under Subparagraph (4) of this Paragraph shall automatically be extended to the close of any public hearing under this Subparagraph. The hearing officer may also extend the comment period by so stating at the hearing.

(C) A tape recording or written transcript of the hearing shall be made available to the public.

(7) Reopening of the Public Comment Period.

(A) If any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a permit action, the Division may take one or more of the following actions:

(i) Prepare a new draft permit, appropriately modified, under Subparagraph (2) of this Paragraph;

(ii) Prepare a fact sheet or revised fact sheet under Subparagraph (3) of this Paragraph and reopen the comment period under Subparagraph (4) of this Paragraph; or

(iii) Reopen or extend the comment period under Subparagraph (4) of this Paragraph to give interested persons an opportunity to comment on the information or arguments submitted.

(B) Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening. The public notice under Subparagraph (4) of this Paragraph shall define the scope of the reopening.

(C) Public notice of any of the actions of this Subparagraph shall be issued under Subparagraph (4) of this Paragraph.

(8) Final Permit Decision.

(A) After the close of the public comment period under Subparagraph (4) of this Paragraph on a draft permit or a notice of intent to deny a permit, the Division shall issue a final permit decision. The Division shall notify the applicant and each person who has submitted a written request for notice of the final permit decision. For the purposes of this Subparagraph, a final permit decision means a final decision to issue, deny or modify a permit.

(B) A final permit decision shall become effective upon the date of the service of notice of the decision unless a later date is specified in the decision.

(9) Response to Comments.

(A) At the time that a final permit decision is issued under Subparagraph (8) of this Paragraph, the Division shall issue a response to comments. This response shall:

(i) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(ii) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any public hearing.

(B) The response to comments shall be made available to the public.

(d) Permit approval or denial.

(1) The Division shall review all permit applications in accordance with Rule .0203 of Section .0200.

(2) Transition for existing facilities. The Division shall review applications submitted in accordance with Paragraph (d) of Rule .1617 according to the following schedule and criteria.

(A) The Division shall establish a review schedule for the plans which determines the adequacy of 50 percent of the plans by October 9, 1994 and 100 percent of the plans by October 9, 1996.
(B) The Division may issue partial approval for specific parts of an application.
(C) The Division shall determine the schedule for closing an existing MSWLF unit based on its review of the complete transition application and the following factors:
   (i) Proximity of human and environmental receptors;
   (ii) Design of the MSWLF unit;
   (iii) Age of the MSWLF unit;
   (iv) The size of the MSWLF unit;
   (v) Type and quantities of waste disposed including sewage sludge;
   (vi) Compliance record of the owner and operator;
   (vii) A schedule for fulfilling the intent of the landfill design standards set forth in Rule .1624 of this Section; and
   (viii) Resource value of the underlying aquifer, including; current and future uses; proximity and withdrawal rate of users; and ground-water quality and quantity.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .1604 GENERAL REQUIREMENTS FOR MSWLF FACILITIES
(a) Applicability. Permits issued by the Division for new and existing MSWLF facilities are subject to the requirements set forth in this Rule.
(b) Terms of the Permit. The Solid Waste Management Permit shall incorporate requirements necessary to comply with this Subchapter and the North Carolina Solid Waste Management Act including the provisions of this Paragraph.
   (1) Division Approved Plan. Permits issued subsequent to March 9, 1993 shall incorporate a Division approved plan.
      (A) The scope of the Division approved plan shall be limited to the information necessary to comply with the requirements set forth in Rule .1617 of this Section.
      (B) The Division approved plans are subject to and may be limited by the conditions of the permit.
      (C) The Division approved plans for a new facility or permit renewal of an existing facility shall be described in the permit and shall include the following:
         (i) Facility plan;
         (ii) Engineering plan and Construction Quality Assurance Plan;
         (iii) Operation plan;
         (iv) Monitoring plan; and
         (v) Closure and post-closure plan.
   (2) Permit provisions. All disposal facilities shall conform to the conditions set forth in the permit and the following provisions. Nothing in this Subparagraph shall be construed to limit the conditions the Division may otherwise impose on a permit:
      (A) Duty to Comply. The permittee shall comply with all conditions of the permit.
      (B) Duty to Mitigate. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent adverse impacts on human health or the environment.
      (C) Duty to Provide Information. The permittee shall furnish to the Division, any relevant information which the Division may request to determine whether cause exists for modifying or revoking this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.
      (D) Recordation Procedures. The permittee shall comply with the requirements of Rule .0204 in order for a new permit to be effective.
      (E) Need to Halt or Reduce Activity Not a Defense. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
      (F) Permit Actions. A permit may be modified, revoked and reissued, or terminated for cause in accordance with G.S. 130A-23. The filing of a request by the permittee for a permit modification or termination, or a notification of planned changes or anticipated noncompliance, does not stay any existing permit condition.
No Property Rights. The Commission does not intend for a permit to convey any property rights of any sort or any exclusive privilege. A permit is not transferable.

Construction. If construction does not commence within 18 months from the issuance date of the permit to construct, or an amendment to the permit, then the permittee shall obtain written approval from the Division prior to construction and comply with any conditions of the approval. In determining whether to approve construction, the division shall consider length of time elapsed since issuance of permit, any changes in applicable state and federal statutes and rules since issuance of the permit, and any changes in financial qualifications or environmental compliance status of the holder of the permit in accordance with G.S. 130A-295.2 and G.S. 130A-295.3.

Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

Inspection and Entry. The permittee shall allow the Division, or an authorized representative, to:
(i) Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;
(ii) Have access to a copy of any records required to be kept under the conditions of this permit;
(iii) Inspect any facilities, equipment (including monitoring and control equipment), practices or operations regulated by the Division;
(iv) Sample or monitor for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location; and
(v) Make photographs for the purpose of documenting items of compliance or noncompliance at waste management units, or where appropriate to protect legitimate proprietary interests, require the permittee to make such photos for the Division.

Monitoring and Records.
(i) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall split any required samples with the Division upon request.
(ii) The permittee shall retain records of all monitoring information required by the permit for the active life of the facility and for the post-closure care period.
(iii) Records of monitoring information shall include:
   (I) The date, place, and time of sampling or measurements;
   (II) The individual(s) who performed the sampling or measurements;
   (III) The date(s) analyses were performed;
   (IV) The individual(s) who performed the analyses;
   (V) The analytical techniques or methods used (including equipment used); and
   (VI) The results of such analyses.

Reporting Requirements.
(i) The permittee shall give notice to the Division as soon as possible of any planned physical alterations or additions to the permitted facility.
(ii) Monitoring results shall be reported at the intervals specified in the permit.
(iii) The permittee shall report orally within 24 hours from the time the permittee becomes aware of the circumstances of any release or discharge outside the liner, collection system or other containment component, any fire, or explosion from the permitted landfill facility. Such reports shall be made to the Division representative.
at the appropriate regional office of the Department of Environment and Natural Resources.

(iv) Where the permittee becomes aware that it failed to submit all relevant facts and corrected information in a permit application, or submitted incorrect information in a permit application or in any report to the Division, it shall submit such facts or information.

(M) Survey for Compliance.

(i) Within 60 days of the permittee’s receipt of the Division’s written request, the permittee shall cause to be conducted a survey of active or closed portions of their facility in order to determine if operations (e.g., cut and fill boundaries, grades) are being conducted in accordance with the approved design and operational plans. The permittee shall report the results of such survey to the Division within 90 days of receipt of the Division’s request.

(ii) A survey may be required by the Division:

(I) If there is reason to believe that operations are being conducted in a manner that deviates from the Division approved plans; or

(II) As a periodic verification (but no more than annual) that operations are being conducted in accordance with the approved plans.

(iii) If required by G.S. 89C, any survey performed pursuant to this Part shall be performed by a registered land surveyor duly authorized under North Carolina law to conduct such activities. [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, by resolution dated March 31, 2011 that preparation of survey pursuant to this Paragraph constitutes practicing surveying under G.S. 89C.]

(N) Additional Solid Waste Management Facilities. Construction and operation of additional solid waste management facilities at the landfill facility shall not impede operation of the MSWLF unit and shall be approved by the Division.

(O) Existing Facilities. Permits issued by the Division prior to October 9, 1993 for the construction of a lateral expansion or a new MSWLF unit are subject to the requirements for permit renewal set forth in Subparagraph (a)(5) of Rule .1603. The owner or operator shall establish a schedule for permit renewal that demonstrates compliance with Rule .1603 of this Section. The owner or operator shall place the demonstration in the operating record and submit a copy to the Division for approval.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993; Amended Eff. May 1, 2011.
15A NCAC 13B .1617 APPLICATION REQUIREMENTS FOR MSWLF FACILITIES
(a) Permit for a new facility. The owner and operator of a new facility shall meet the requirements of Rule .1618 of this Section prior to submitting an application for a permit to construct.

(1) Permit to Construct. A complete application for a permit to construct shall meet the General Site Conditions and Design Requirements set forth by the Division and shall contain the following:
   (A) A facility plan that describes comprehensive development of the MSWLF facility prepared in accordance with Rule .1619 of this Section;
   (B) An engineering plan that is prepared for the initial phase of landfill development prepared in accordance with Rule .1620 of this Section;
   (C) A construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
   (D) An operation plan prepared in accordance with Rule .1625 of this Section;
   (E) A closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and
   (F) A water quality monitoring plan prepared as set forth in Paragraph (b) of Rule .1623.

(2) Permit to Operate. The owner or operator shall meet the pre-operative requirements of the permit to construct in order to qualify the constructed MSWLF unit for a permit to operate. Construction documentation shall be submitted in a timely and organized manner in order to facilitate the Division's review.

(b) Amendment to the permit. A complete application for an amendment to the permit shall contain:

(1) An updated engineering plan prepared in accordance with Rule .1620 of this Section;
(2) An updated construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
(3) An updated operation plan prepared in accordance with Rule .1625 of this Section;
(4) An updated closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and
(5) A updated water quality monitoring plan prepared as set forth in Paragraph (b) of Rule .1623.

(c) Modifications to the permit. The owner or operator may propose to modify plans prepared and approved in accordance with the requirements set forth in this Section. A complete application shall identify the requirement(s) proposed for modification and provide complete information in order to demonstrate compliance with the applicable requirements of this Section.

(d) Transition plan for existing MSWLF units. Owners or operators of existing MSWLF units shall submit a transition plan on or before April 9, 1994 that contains:

(1) An operation plan prepared in accordance with Rule .1625 of this Section;
(2) A closure and post-closure plan prepared in accordance with Rule .1629 of this Section;
(3) A water quality monitoring plan prepared as set forth in Subparagraph (b)(3) of Rule .1623; and
(4) A report that defines the owner's or operator's plans for continued operation of the existing facility or a new facility for a minimum five year period and incorporates:
   (A) A closure date for the existing MSWLF unit; and
   (B) A schedule for submitting the required permit applications for a new facility, permit renewal or planned use of any MSWLF facility which meets the requirements of Subparagraph (b)(1) of Rule .1624.

(e) Permit renewal. A complete application for a permit to construct a lateral expansion or a new MSWLF unit shall contain the following:

(1) A facility plan that describes comprehensive development of the MSWLF facility prepared in accordance with Rule .1619 of this Section;
(2) An engineering plan that is prepared for the initial phase of landfill development prepared in accordance with Rule .1620 of this Section;
(3) A construction quality assurance plan prepared in accordance with Rule .1621 of this Section;
An operation plan prepared in accordance with Rule .1625 of this Section;
A closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and
A water quality monitoring plan prepared as set forth in Paragraph (b) of Rule .1623.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1618 SITE STUDY FOR MSWLF FACILITIES
(a) Purpose. As required under Rule .1617 of this Section, the owner and operator shall prepare a site study which meets the requirements of this Rule. The Division shall review the site study for a proposed new facility prior to consideration of an application for a permit to construct. Following review of the site study, the Division shall notify the applicant that either:

(1) The site is suitable and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .1617 and the General Site Conditions and Design Requirements prescribed by the Division; or

(2) The site is deemed unsuitable for establishing a MSWLF unit and shall specify the reasons which would prevent the MSWLF facility from being operated in accordance with G.S. 130A, Article 9, this Subchapter, and the Federal Act.

(b) Scope. The site is the land which is proposed for the landfill facility. The site study presents a characterization of the land, incorporating various investigations and requirements pertinent to suitability of a MSWLF facility. The scope of the site study includes criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site is not within the scope of this study and instead, should be evaluated by the owner or operator prior to submitting a permit application to the Division. The information in the site study shall accurately represent site characteristics and must be prepared by qualified environmental professionals. A qualified environmental professional is a person who has received a baccalaureate or post-graduate degree from a university and has sufficient training and experience in or related to the field of study requiring investigation that enables that person to make sound professional judgements.

(c) The site study prepared for a MSWLF facility shall include the information required by this Paragraph unless as noted in Paragraphs (d) and (e) of this Rule.

(1) Regional characterization study. The regional study area includes the landfill facility and a two mile perimeter measured from the proposed boundary of the landfill facility. The study shall include a report and a regional map identifying the following:

(A) General topography and features as illustrated on the most recent U.S.G.S. Topographic map, 7.5 Minute Series, horizontal scale of at least one inch equals 2000 feet;
(B) Proposed landfill facility location;
(C) Public water supply wells, surface water intakes, and service areas;
(D) Residential subdivisions;
(E) Waste transportation routes; and
(F) Public use airports and runways.

(2) Local characterization study. The local study area includes the landfill facility and a 2000 foot perimeter measured from the proposed boundary of the landfill facility. The study shall include an aerial photograph taken within one year of the original submittal date, a report, and a local map. The map and photograph shall be at a scale of at least one inch equals 400 feet. The study must identify the following:

(A) The entire property proposed for the disposal site and any on-site easements;
(B) Existing land use and zoning;
(C) The location of private residences and schools;
(D) The location of commercial and industrial buildings, and other potential sources of contamination;
(E) The location of potable wells and available documentation regarding well completion and production rate;
(F) Historic sites; and
(G) The existing topography and features of the disposal site including: general surface water drainage patterns and watersheds, 100-year floodplains, perennial and intermittent streams, rivers, and lakes.
Site Hydrogeologic Report. The study shall be prepared in accordance with the requirements set forth in Rule .1623 (a) of this Section.

Location Restrictions. A report shall be prepared demonstrating compliance with the criteria in Rule .1622; the report shall incorporate the proposed facility plan and if applicable, discuss planned compliance with design and construction standards referenced in Rule .1622 (2)(a), (3)(a)(iii), (4)(a), (5)(a), and (6)(a) of this Section.

Local government approvals for municipal solid waste landfills.

(A) If the proposed municipal solid waste landfill site is located within an incorporated city or town, or within the extraterritorial jurisdiction of an incorporated city or town, the approval of the governing board of the city or town shall be required. Otherwise, the approval of the Board of Commissioners having authority in the county which the site is located shall be required. Approval may be in the form of either a resolution or a vote on a motion. A copy of the resolution, or the minutes of the meeting where the vote was taken shall be submitted to the Division as part of the site study.

(i) Prior to approval, the jurisdictional local government where the landfill is to be located shall hold at least one public meeting to inform the community of the proposed waste management activities as described in the proposed facility plan prepared in accordance with Subparagraph (6) of this Paragraph.

(ii) For purposes of this Subpart, public notice shall include: a legal advertisement placed in a newspaper or newspapers serving the county; and provision of a news release to at least one newspaper, one radio station, and one TV station serving the county. Public notice shall include time, place, and purpose of the meetings required by this Subpart.

(iii) The local government where the landfill is to be located shall provide a public notice of the meeting at least 30 days prior to the meeting. Public notice shall be documented in the site study. A tape recording or a written transcript of the meeting, all written material submitted representing community concerns, and all other relevant written material distributed or used at the meeting shall be submitted as part of the site study.

(iv) The complete permit application, written transcripts of all public meetings and any additional material submitted or used at the meetings, and any additions or corrections to the applications, including any responses to notices of deficiencies shall be submitted to the closest local library in the county of the proposed site, with the request that the information be made available to the public until the permit decision is concluded.

(B) A letter from the unit of local government having zoning jurisdiction over the site which states that the proposal meets all the requirements of the local zoning ordinance, or that the site is not zoned shall be submitted to the Division as part of the site study.

(C) A letter from the unit of local government responsible for the implementation of a comprehensive solid waste management plan approved by the Division [in accordance with G.S. 130A-309.04(e)] setting forth a determination that the operation of the proposed municipal solid waste landfill is consistent with the approved solid waste management plan shall be submitted with the site study.

Proposed Facility Plan. A conceptual plan for the development of the facility including drawings and a report must be prepared which incorporates the summary findings of the geologic and hydrogeologic report as set forth in Subparagraph (a)(13) of Rule .1623 and includes the drawings and reports described in Rule .1619 (d)(1), (d)(2), (e)(1), (e)(2), (e)(3), and (e)(5).

(d) An existing facility proposed for designation as a new facility is exempt from the requirements of Subparagraph (c)(5) of this Rule if the site study meets the following criteria:

(1) The facility boundary delineated in accordance with Subparagraph (c)(6) of this Rule is the same boundary described in the current permit; and

(2) The areal limits of the proposed MSWLF unit(s) is within the approved disposal area approved by the current permit.
(e) New facility applications in transition. Site plan applications for a new facility submitted in accordance with Rule .0504 (1) of this Section after January 15, 1992 and prior to April 9, 1993 and approved by the Division consistent with Subparagraph (a)(1) of this Rule are not subject to the requirements of this Rule.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1619 FACILITY PLAN
(a) Purpose. As required under Rule .1617 of this Section, a permit applicant shall prepare a facility plan which meets the requirements of this Rule.

(b) Scope.

(1) The facility plan defines comprehensive development of the property proposed for permit or described in the permit of an existing facility. The plan includes a set of drawings and a report which present the long-term, general design concepts related to construction, operation, and closure of the MSWLF unit(s), including leachate management. The scope of the plan spans the active life of the MSWLF unit(s). Additional solid waste management facilities located at the MSWLF facility shall be identified in the plan and shall meet the requirements of this Subchapter. The facility plan defines the waste stream proposed for management at the MSWLF facility. If different types of landfill units or non-disposal facilities are included in the facility design, the plan must describe general waste acceptance procedures.

(2) The areal limits of the MSWLF unit(s), total capacity of the MSWLF unit(s), and the proposed waste stream shall be consistent with the Division's approval set forth:

(A) In accordance with Rule .1618 (a)(1) of this Section for a new facility; or
(B) In accordance with the current permit for an existing facility applying for permit renewal.

(c) Use of Terms. The terminology used in describing areas of the landfill unit shall be defined in the facility plan and shall be used consistently throughout a permit application. The Division recommends the use of the following terms:

(1) A "phase" is an area constructed with a base liner system that provides no more than approximately five years of operating capacity.

(2) A "cell" is a subdivision of a phase which describes modular or partial construction.

(3) A "subcell" is a subdivision of a cell which describes leachate and stormwater management for active or inactive areas of the constructed MSWLF.

(d) Facility Drawings. The facility plan shall include the following drawings:

(1) Site Development. The two drawings which plot site development shall be prepared on a topographic map representative of existing site conditions; the map shall locate the physical features referenced in Rule .1622 of this Section and shall incorporate a survey locating all property boundaries for the proposed landfill facility certified by an individual licensed to practice land surveying in the State of North Carolina.

(A) Landfill units and leachate facilities. This drawing shall delineate the areal limits of all landfill units and leachate facilities and incorporate the buffer requirements set forth in Subparagraph (b)(3) of Rule .1624.

(B) All facilities. This drawing shall locate all solid waste management facilities and facility infrastructure, including landfill units and leachate facilities.

(2) Landfill Construction. All on-site grading activities related to the construction and operation of the MSWLF unit(s) shall be illustrated in facility drawings which:

(A) Delineate the limits of grading, including borrow and stockpile areas;
(B) Define phases of development which do not exceed approximately five years of operating capacity;
(C) Propose base grades for the MSWLF unit(s);
(D) Delineate the location of access roads, sedimentation basins, leachate pipeline and storage or treatment facilities and other structures related to the operation of the MSWLF unit; and
(E) Propose final contours for the MSWLF unit(s) and facility features for closure.

(3) Landfill Operation. The following information related to the long-term operation of the MSWLF units shall be included in facility drawings:

(A) General grade and flow direction for the drainage layer component of the leachate collection system;
(B) Size, location, and general grade for the leachate piping system, including on-site pipelines to leachate management facilities;
(C) Proposed transitional contours for each phase of development, including operational grades for existing phase(s) and construction grading for the new phase; and
(D) If included in the design, stormwater segregation features and details for inactive landfill subcells.

(e) Facility Report. The facility plan shall include the following information:

(1) Waste stream. A discussion of the characteristics of the wastes received at the facility and facility specific management plans shall incorporate:
(A) The types of waste specified for disposal;
(B) Average monthly disposal rates and estimated variance;
(C) The area served by the facility;
(D) Procedures for segregated management at different on-site facilities; and
(E) Equipment requirements for operation of the MSWLF unit.

(2) Landfill Capacity. An analysis of landfill capacity and soil resources shall be performed.
(A) The data and assumptions used in the analysis shall be:
   (i) Consistent with the facility drawings and disposal rates specified in the facility plan; and
   (ii) Representative of operational requirements and conditions.

(B) The conclusions shall provide accurate volumetric estimates of:
   (i) Total operating capacity;
   (ii) Operating capacity for each phase of development;
   (iii) In-place ratio of waste to soil;
   (iv) Available soil resources from on-site or specific off-site sources;
   (v) Required quantities of soil for landfill construction, operation, and closure; and
   (vi) The estimated operating life of all MSWLF units in years.

(3) Containment and environmental control systems. A general description of the systems designed for proper landfill operation, system components, and corresponding functions shall be provided.

(4) Leachate Management. An analysis of the leachate management requirements and plans for the MSWLF facility shall incorporate the information required under this Subparagraph.
(A) The performance of and design concepts for the leachate collection system within active areas of the MSWLF unit and any storm water segregation included in the engineering design shall be described.

(B) Normal operating conditions. Normal operating conditions shall be defined and must consider:
   (i) Average monthly values for leachate generation representative of the landfill's environment and operation using:
      (I) Empirically derived estimates; or
      (II) For landfill expansions, actual leachate generation data from the existing landfill.
   (ii) Surge volumes generated by storm events.

(C) Leachate management system. A description of the leachate management system components and their engineered function shall be provided, including:
   (i) Leachate pipeline operating capacity;
   (ii) Capacity of the storage and if applicable, the treatment facilities; and
   (iii) Final disposal plans and applicable discharge limits, including documented prior approval of the waste water treatment plant which may be designated in the plan.

(D) A contingency plan shall be prepared for storm surges or other considerations exceeding design parameters for the storage or treatment facilities.

(5) Special engineering features.

History Note:  Authority G.S. 130A-294;

15A NCAC 13B .1620  ENGINEERING PLAN
(a) **Purpose.** The engineering plan incorporates the detailed plans and specifications relative to the design and performance of the landfill's containment and environmental control systems. This plan sets forth the design parameters and construction requirements for the components of the landfill's systems and establishes the responsibilities of the design engineer. The engineered components are described in Rule .1624 of this Section. As required under Rule .1617 of this Section, the owner or operator shall submit an engineering plan which meets the requirements of this Rule.

(b) **Responsibilities of the design engineer.** The engineering plan shall be prepared by a Professional Engineer licensed to practice engineering in accordance with G.S. 89C and the Administrative Rules developed thereunder. The plan shall meet the requirements of this Rule; the design engineer shall incorporate a statement certifying this fact and bearing his or her seal of registration.

(c) **Scope.** An engineering plan shall be prepared for a phase of development not to exceed approximately five years of operating capacity, consistent with the development phases and design criteria defined in the facility plan. The original and subsequent plans must incorporate the design of leachate management and other environmental control facilities. The engineering plan shall contain a report and a set of drawings which consistently represent the engineering design.

(d) **An engineering report must contain:**

1. An analysis of the facility design that conforms to:
   
   (A) The standards for the foundation and the base liner system set forth in Rule .1624 of this Section;
   
   (B) The standards for the cap system set forth in Paragraph (c) of Rule .1627 of this Section; and
   
   (C) The standards for the leachate storage facilities set forth in Rule .1680 of this Section.

2. A summary of the facility design that includes:
   
   (A) A discussion of the analytical methods used to evaluate the design;
   
   (B) Definition of the critical conditions evaluated and assumptions made;
   
   (C) A list of technical references used in the evaluation; and
   
   (D) Completion of any applicable location restriction demonstrations in accordance with Rule .1622 of this Section.

3. A description of the materials and construction practices that conforms to the requirements set forth in Rule .1624 of this Section, and is consistent with the analysis of the facility design prepared in accordance with this Part.

4. A copy of the Design Hydrogeologic Report prepared in accordance with Paragraph (b) of Rule .1623.

(e) **Engineering drawings must clearly illustrate:**

1. Existing conditions: site topography, features, existing disposal areas, roads, buildings;

2. Grading plans: proposed limits of excavation, subgrade elevations, boring locations, intermediate grading for partial construction;

3. Base liner system: grades for top of composite liner, slopes, anchor configuration, liner penetration locations and details;

4. Leachate collection system: base elevations, piping system grade and inverts, cleanouts, valves, sumps, top of protective cover elevations, and details;

5. Stormwater segregation system: location and detail of features;

6. Cap system: base and top elevations, landfill gas collection, infiltration barrier, surface water removal, protective and vegetative cover, and details;

7. Temporary and permanent sedimentation and erosion control plans;

8. Vertical separation requirements incorporating boring locations, cross sections, the maps prepared in accordance with Rule .1623 (b)(2)(E) and (F) of this Section, and the grading plans; and

9. Additional engineering features and details.

**History Note:** Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1621 CONSTRUCTION QUALITY ASSURANCE PLAN

(a) **Purpose.** The construction quality control and quality assurance (CQA) plan must describe the observations and tests that will be used before, during, and upon completion of construction to ensure that the construction materials meet the design specifications and the construction and certification requirements set forth in Rule .1624 of this Section. The CQA plan must also describe the procedures to ensure that the integrity of the landfill systems will be maintained prior to waste placement.

(b) **For construction of each cell, the CQA plan shall include,** but not be limited to:
Responsibilities and authorities. The plan shall establish responsibilities and authorities for the construction management organization. A pre-construction meeting shall be conducted prior to beginning construction of the base liner system for a new cell. The meeting shall include a discussion of the construction management organization, respective duties during construction, and periodic reporting requirements for test results and construction activities.

Inspection activities. A description of all field observations, tests, equipment, calibration procedures for field testing equipment that will be used to ensure that the construction and installation meets or exceeds all design criteria established in accordance with Rules .1620 and .1624 of this Section must be presented in the CQA plan.

Sampling strategies. A description of all sampling protocols, sample size, methods for determining sample locations and frequency of sampling must be presented in the CQA plan.

Documentation. Reporting requirements for CQA activities must be described in detail in the CQA plan. Progress and troubleshooting meetings, daily and monthly, must be addressed in the plan and the contents of the meetings must be documented.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1622 LOCATION RESTRICTIONS FOR MSWLF FACILITY SITING
MSWLF units shall comply with the siting criteria set forth in this Rule. In order to demonstrate compliance with specific criteria, documentation or approval by agencies other than the Division of Solid Waste Management may be required. The scope of demonstrations including design and construction performance shall be discussed in a site study and completed in the permit application.

(1) Airport Safety.
   (a) A new MSWLF unit shall be located no closer than 5,000 feet from any airport runway used only by piston-powered aircraft and no closer than 10,000 feet from any runway used by turbine-powered aircraft.
   (b) Owners or operators proposing to site a new MSWLF unit or lateral expansion within a five-mile radius of any airport runway used by turbine-powered or piston-powered aircraft shall notify the affected airport and the Federal Aviation Administration prior to submitting a permit application to the Division.
   (c) The permittee of any existing MSWLF unit or a lateral expansion located within 5,000 feet from any airport runway used by only piston-powered aircraft or within 10,000 feet from any runway used by turbine-powered aircraft shall demonstrate that the existing MSWLF unit does not pose a bird hazard to aircraft. The owner or operator shall place the demonstration in the operating record and notify the Division that it has been placed in the operating record.
   (d) For purposes of this Paragraph:
      (i) Airport means a public-use airport open to the public without prior permission and without restrictions within the physical capacities of the available facilities.
      (ii) Bird hazard means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

(2) Floodplains.
   (a) New MSWLF units, existing MSWLF units, and lateral expansions shall not be located in 100-year floodplains unless the owners or operators demonstrate that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.
   (b) For purposes of this Paragraph:
      (i) "Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, that are inundated by the 100-year flood.
      (ii) "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 equalled or exceeded once in 100 years on the average over a significantly long period.
      (iii) "Washout" means the carrying away of solid waste by waters of the base flood.
(3) Wetlands.

(a) New MSWLF units and lateral expansions shall not be located in wetlands, unless the owner or operator can make the following demonstrations to the Division:

(i) Where applicable under Section 404 of the Clean Water Act or applicable State wetlands laws, the presumption that a practicable alternative to the proposed landfill facility is available which does not involve wetlands is clearly rebutted.

(ii) The construction and operation of the MSWLF unit will not:

(A) Cause or contribute to violations of any applicable State water quality standard;

(B) Violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act;

(C) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973; and

(D) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

(iii) The MSWLF unit will not cause or contribute to significant degradation of wetlands. The owner or operator shall demonstrate the integrity of the MSWLF unit and its ability to protect ecological resources by addressing the following factors:

(A) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the MSWLF unit;

(B) Erosion, stability, and migration potential of dredged and fill materials used to support the MSWLF unit;

(C) The volume and chemical nature of the waste managed in the MSWLF unit;

(D) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;

(E) The potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and

(F) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

(iv) To the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by Subitem (3)(a)(i) of this Rule, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

(v) Sufficient information is available to make a reasonable determination with respect to these demonstrations.

(b) For purposes of this Item, wetlands means those areas that are defined in 40 CFR 232.2(r).

(4) Fault Areas.

(a) New MSWLF units and lateral expansions shall not be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the Division that an alternative setback distance of less than 200 feet (60 meters) will prevent damage to the structural integrity of the MSWLF unit and will be protective of human health and the environment.

(b) For the purposes of this Item:

(i) "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.

(ii) "Displacement" means the relative movement of any two sides of a fault measured in any direction.
(iii) "Holocene" means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

(5) Seismic Impact Zones.

(a) New MSWLF units and lateral expansions shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Division 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) For the purposes of this Item:

(i) "Seismic impact zone" means an area with a ten percent 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.

(ii) "Maximum horizontal acceleration in lithified earth material" means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent 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.

(iii) "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 surface.

(6) Unstable Areas.

(a) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in an unstable area shall demonstrate that engineering measures have been incorporated into the MSWLF unit's design to ensure that the integrity of the structural components of the MSWLF unit will not be disrupted. The owner or operator shall consider the following factors, at a minimum, when determining whether an area is unstable:

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

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

(iii) On-site or local human-made features or events (both surface and subsurface).

(b) For purposes of this Item:

(i) "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.

(ii) "Structural components" means liners, leachate collection systems, final covers, run-on or run-off systems, and any other component used in the construction and operation of the MSWLF that is necessary for protection of human health and the environment.

(iii) "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 an MSWLF unit.

(iv) "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 MSWLF unit, 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 fluctuation, block sliding, and rock fall.

(v) "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.
Cultural Resources. A new MSWLF unit or lateral expansion shall not damage or destroy an archaeological or historical property. The Department of Cultural Resources shall determine archeological or historical significance. To aid in making a determination as to whether the property is of archeological or historical significance, the Department of Cultural Resources may request the owner or operator to perform a site-specific survey which shall be included in the Site Study.

State Nature and Historic Preserve. A new MSWLF unit or lateral expansion shall not have an adverse impact on any lands included in the State Nature and Historic Preserve.

Water Supply Watersheds.
(a) A new MSWLF unit or lateral expansion shall not be located in the critical area of a water supply watershed or in the watershed for a stream segment classified as WS-I, in accordance with the rules codified at 15A NCAC 2B .0200 - "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."
(b) Any new MSWLF unit or lateral expansion, which shall discharge leachate to surface waters at the landfill facility and must obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Division of Environmental Management pursuant to Section 402 of the United States Clean Water Act, shall not be located within watersheds classified as WS-II or WS-III, in accordance with the rules codified at 15A NCAC 2B .0200 - "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."

Endangered and Threatened Species. A new MSWLF unit or lateral expansion shall not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1623 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATIONS FOR MSWLF FACILITIES
(a) Site Hydrogeologic Report. An investigation is required to assess the geologic and hydrogeologic characteristics of the proposed site to determine: the suitability of the site for solid waste management activities; which areas of the site are most suitable for MSWLF units; and the general ground-water flow paths and rates for the uppermost aquifer. The report shall provide an understanding of the relationship of the site ground-water flow regime to local and regional hydrogeologic features, with special emphasis on the relationship of MSWLF units to ground-water receptors (especially drinking water wells) and to ground-water discharge features. Additionally, the scope of the investigation shall include the general geologic information necessary to address compliance with the pertinent location restrictions described in Rule .1622 of this Section. The Site Hydrogeologic Report shall provide, at a minimum, the following information:
(1) A report on local and regional geology and hydrogeology based on research of available literature for the area. This information is to be used in planning the field investigation. For sites located in piedmont or mountain regions, this report shall include a fracture trace analysis and Rose Diagram, based at a minimum on an evaluation of structurally controlled features identified on a topographic map of the area.
(2) A report on field observations of the site that includes information on the following:
   (A) Topographic setting, springs, streams, drainage features, existing or abandoned wells, rock outcrops, (including trends in strike and dip), and other features that may affect site suitability or the ability to effectively monitor the site; and
   (B) Ground-water discharge features. A more extensive hydrogeologic investigation may be required for a proposed site where the owner or operator does not control the property from any landfill unit boundary to the controlling, downgradient, ground-water discharge feature(s).
(3) Borings for which the numbers, locations, and depths are sufficient to provide an adequate understanding of the subsurface conditions and ground-water flow regime of the uppermost aquifer at the site. The number and depths of borings required will depend on the hydrogeologic characteristics of the site. At a minimum, there shall be an average of one boring for each ten acres of the proposed landfill facility, unless otherwise authorized by the Division. All borings intersecting the water table shall be converted to piezometers or monitoring wells.
A testing program for the borings which describes the frequency, distribution, and type of samples taken and the methods of analysis (standard ASTM test methods or methods approved by the Division) used to obtain, at a minimum, the following information:

(A) Standard penetration - resistance;
(B) Particle size analysis;
(C) Soil classification: Unified Soil Classification System;
(D) Formation descriptions; and
(E) Saturated hydraulic conductivity, porosity, and effective porosity for each lithologic unit of the uppermost aquifer.

In addition to borings, other techniques may be used to investigate the subsurface conditions at the site, including but not limited to: geophysical well logs, surface geophysical surveys, and tracer studies.

Stratigraphic cross-sections identifying hydrogeologic and lithologic units, and stabilized water table elevations.

Water table information, including:

(A) Tabulations of water table elevations measured at the time of boring, 24 hours, and stabilized readings for all borings (measured within a period of time short enough to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow direction and rate);
(B) Tabulations of stabilized water table elevations over time in order to develop an understanding of seasonal fluctuations in the water table;
(C) An estimation of the long-term seasonal high water table based on stabilized water table readings, hydrographs of wells in the area, meteorological and climatological data, and any other information available; and
(D) A discussion of any natural or man-made activities that have the potential for causing water table fluctuations, including tidal variations, river stage changes, flood pool changes of reservoirs, high volume production wells, injection wells, etc.

The horizontal and vertical dimensions of ground-water flow, including flow directions, rates, and gradients.

Ground-water contour map(s) to show the occurrence and direction of ground-water flow in the uppermost aquifer, and any other aquifers identified in the hydrogeologic investigation. The ground-water contours shall be superimposed on a topographic map. The location of all borings and rock cores, and the water table elevations or potentiometric data at each location used to generate the ground-water contours shall be shown on the ground-water contour map(s).

A topographic map of the site locating soil borings with accurate horizontal and vertical control which are tied to a permanent onsite bench mark.

Boring logs, field logs and notes, well construction records, and piezometer construction records.

Identification of other geologic and hydrologic considerations, including but not limited to: slopes, streams, springs, gullies, trenches, solution features, karst terranes, sinkholes, dikes, sills, faults, mines, ground-water discharge features, and ground-water recharge/discharge areas.

A report summarizing the geological and hydrogeological evaluation of the site that includes the following:

(A) A description of the relationship between the uppermost aquifer of the site to local and regional geologic and hydrogeologic features.
(B) A discussion of the ground-water flow regime of the site focusing on the relationship of MSWLF units to ground-water receptors and to ground-water discharge features.
(C) A discussion of the overall suitability of the proposed site for solid waste management activities and which areas of the site are most suitable for MSWLF units.
(D) A discussion of the ground-water flow regime of the uppermost aquifer at the site and the ability to effectively monitor the MSWLF units in order to ensure early detection of any release of hazardous constituents to the uppermost aquifer.

(b) Design Hydrogeologic Report.

A geological and hydrogeological report shall be submitted in the application for the Permit to Construct. This report shall contain the information required by Subparagraphs (2) and (3) of this Paragraph. The number and depths of borings required shall be based on the geologic and
hydrogeologic characteristics of the landfill facility. At a minimum, there shall be an average of one boring for each acre of the area of investigation, unless otherwise authorized by the Division, where the area of investigation shall be defined by the Division’s review of the Site Study and by the scope and purpose of the investigation as follows:

(A) The investigation shall provide adequate information to demonstrate compliance with the vertical separation and foundation standards set forth in Subparagraphs (b)(4) and (b)(7) of Rule .1624 of this Section, and Paragraph (e) of Rule .1680 of this Section.

(B) The report shall include an investigation of the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of landfill development and any leachate surface impoundment or leachate disposal facility. The purpose of this investigation is to provide more detailed and localized data on the hydrogeologic regime for this area in order to design an effective water quality monitoring system.

(2) The Design Hydrogeologic Report shall provide, at a minimum, the following information:

(A) The information required in Subparagraphs (a)(4) through (a)(12) of this Rule.

(B) All technical information necessary to determine the design of the monitoring system as required by Rule .1631(c) of this Section.

(C) All technical information necessary to determine the relevant point of compliance as required by Rule .1631(a)(2)(B) of this Section.

(D) Rock corings (for sites located in the piedmont or mountain regions) for which the numbers, locations, and depths are adequate to provide an understanding of the fractured bedrock conditions and ground-water flow characteristics of at least the upper 10 feet of the bedrock. Testing for the corings shall provide, at a minimum, the following information:
   (i) Rock types;
   (ii) Recovery values;
   (iii) Rock Quality Designation (RQD) values;
   (iv) Saturated hydraulic conductivity and secondary porosity values; and
   (v) Rock descriptions, including fracturing and jointing patterns, etc.

(E) A ground-water contour map based on the estimated long-term seasonal high water table that is superimposed on a topographic map and includes the location of all borings and rock cores and the water table elevations or potentiometric data at each location used to generate the ground-water contours.

(F) A bedrock contour map (for sites located in piedmont or mountain regions) illustrating the contours of the upper surface of the bedrock that is superimposed on a topographic map and includes the location of all borings and rock cores and the top of rock elevations used to generate the upper surface of bedrock contours.

(G) A three dimensional ground-water flow net or several hydrogeologic cross-sections that characterize the vertical ground-water flow regime for this area.

(H) A report on the ground-water flow regime for the area including ground-water flow paths for both horizontal and vertical components of ground-water flow, horizontal and vertical gradients, flow rates, ground-water recharge areas and discharge areas, etc.

(I) A certification by a Licensed Geologist that all borings at the site that have not been converted to permanent monitoring wells will be properly abandoned in accordance with the procedures for permanent abandonment of wells, as delineated in 15A NCAC 2C Rule .0113(a)(2).

(3) A Water Quality Monitoring Plan shall be submitted that contains the following information.

(A) A ground-water monitoring plan including information on the proposed ground-water monitoring system(s), sampling and analysis requirements, and detection monitoring requirements that fulfills the requirements of Rules .1630 through .1637 of this Section.
   (i) The Division may require the use of alternative monitoring systems in addition to ground-water monitoring wells at sites:
      (I) Where the owner or operator does not control the property from any landfill unit to the ground-water discharge feature(s); or
      (II) Sites with hydrogeologic conditions favorable to detection monitoring by alternative methods.
(ii) The ground-water monitoring plan shall provide a detailed discussion of the geologic and hydrogeologic criteria used to determine the number, spacing, location, and screen depths of proposed monitoring wells.

(B) A surface water monitoring plan in accordance with Rule .0602 of Section .0600.

(C) The final water quality monitoring plan shall be certified by a Licensed Geologist to be effective in providing early detection of any release of hazardous constituents (from any point in a MSWLF unit or leachate surface impoundment) to the uppermost aquifer, so as to be protective of public health and the environment.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1624 CONSTRUCTION REQUIREMENTS FOR MSWLF FACILITIES

(a) This Rule establishes the performance standards and minimum criteria for designing and constructing a new MSWLF unit or lateral expansion of existing MSWLF units. Additional standards for the cap system are described in Rule .1627 of this Section.

(b) New MSWLF units and lateral expansions shall comply with the following design and construction criteria:

   (1) Base liner system description. The base liner system is constructed on the landfill subgrade and shall be designed to efficiently contain, collect and remove leachate generated by the MSWLF unit. At a minimum, the components of the liner system shall consist of the following.

   (A) A Base Liner. The base liner shall consist of one of the following designs. The design described in Subpart (b)(1)(A)(i) of this Rule is the standard composite liner. If a landfill owner or operator proposes to utilize one of the alternative composite liner designs described in Subparts (b)(1)(A)(ii) and (iii) of this Rule, the owner or operator shall demonstrate through a model that the proposed design will ensure that maximum concentration levels (MCLs) listed in Table 1 will not be exceeded in the uppermost aquifer at the relevant point of compliance as established in Rule .1631(a)(2) of this Section. For these two designs, the Division may waive the site-specific modeling requirement if it can be demonstrated that a previous site for which a model was approved had similar hydrogeologic characteristics, climatic factors and volume and physical and chemical leachate characteristics. If an alternative liner design other than Subparts (b)(1)(A)(ii) and (iii) of this Rule is proposed, the Division shall require site-specific, two-phase modeling as described in Subpart (b)(1)(A)(iv) of this Rule.

   (i) A composite liner utilizing a compacted clay liner (CCL). The composite liner is one liner that consists of two components; a geomembrane liner installed above and in direct and uniform contact with a compacted clay liner with a minimum thickness of 24 inches (0.61 m) and a permeability of no more than 1.0 X 10^{-7} cm/sec. The composite liner shall be designed and constructed in accordance with Subparagraphs (b)(8) and (10) of this Rule.

   (ii) A composite liner utilizing a geosynthetic clay liner (GCL). The composite liner is one liner that consists of three components; a geomembrane liner installed above and in uniform contact with a GCL overlying a compacted clay liner with a minimum thickness of 18 inches (0.46 m) and a permeability of no more than 1.0 X 10^{-5} cm/sec. The composite liner shall be designed and constructed in accordance with Subparagraphs (b)(8), (9), and (10) of this Rule.

   (iii) A composite liner utilizing two geomembrane liners. The composite liner consists of three components; two geomembrane liners each with an overlying leachate drainage system designed to reduce the maximum predicted head acting on the lower membrane liner to less than one inch. The lower membrane liner shall overlie a compacted clay liner with a minimum thickness of 12 inches (0.31m) and a permeability of no more than 1.0 X 10^{-5} cm/sec. The composite liner system shall be designed and constructed in accordance with Subparagraphs (b)(8) and (10) of this Rule.
(iv) An alternative base liner. An alternative base liner system may be approved by the Division if the owner or operator demonstrates through a two-phase modeling approach that the alternative liner design meets the following criteria:

(I) the rate of leakage through the alternative liner system will be less than or equal to the composite liner system defined in Subparts (b)(1)(A)(i) of this Rule; and

(II) the design will ensure that concentration values listed in Table 1 will not be exceeded in the uppermost aquifer at the relevant point of compliance as established in Rule .1631(a)(2) of this Section.

(B) A leachate collection system (LCS). The LCS is constructed directly above the base liner and shall be designed to effectively collect and remove leachate from the MSWLF unit. The secondary function of the LCS is to establish a zone of protection between the base liner and the waste. The LCS shall be designed and constructed in accordance with Subparagraphs (b)(2), (11), (12) and (13) of this Rule.

(2) Leachate collection system design and operation.

(A) The leachate collection system shall be hydraulically designed to remove leachate from the landfill and ensure that the leachate head on the composite liner does not exceed one foot. A means of quantitatively assessing the performance of the leachate collection system must be provided in the engineering plan. The performance analysis must evaluate the flow capacities of the drainage network necessary to convey leachate to the storage facility or off-site transport location. The engineering evaluation shall incorporate the following criteria:

(i) At a minimum, the geometry of the landfill and the leachate collection system shall be designed to control and contain the volume of leachate generated by the 24-hour, 25-year storm.

(ii) The performance analysis shall evaluate the leachate collection system for the flow capacities during conditions when the maximum impingement rate occurs on the LCS. The LCS flow capacity shall be designed to reduce the head on the liner system generated by the 24-hour, 25-year storm to less than one foot within 72 hours after the storm event.

(B) The leachate collection system shall be designed to provide a zone of protection at least 24 inches separating the composite liner from landfilling activities, or shall be subject to approval from the division upon a demonstration of equivalent protection for the liner system.

(C) The leachate collection system shall be designed to resist clogging and promote leachate collection and removal from the landfill.

(D) The leachate collection system shall be operated to remove leachate from the landfill in such a way as to ensure that the leachate head on the composite liner does not exceed one foot under normal operating conditions.

(3) Horizontal separation requirements.

(A) Property line buffer. New MSWLF units at a new facility shall establish a minimum 300-foot buffer between the MSWLF unit and all property lines.

(B) Private residences and wells. All MSWLF units at a new facility shall establish a minimum 500-foot buffer between the MSWLF unit and existing private residences and wells.

(C) Surface waters. All MSWLF units at new facilities shall establish a minimum 50-foot buffer between the MSWLF unit and any stream, river, or lake, unless the owner or operator can demonstrate:

(i) To the Division that the alternative management of the water and any discharge will adequately protect the public health and environment; and

(ii) That the construction activities will conform to the requirements of Sections 404 and 401 of the Clean Water Act.

(D) Existing landfill units. An adequate buffer distance shall be established between a new MSWLF unit and any existing landfill units to establish a ground-water monitoring system as set forth in Rule .1631 of this Section.

(E) Existing facility buffers. At a minimum, a lateral expansion or new MSWLF unit at an existing facility shall conform to the requirements of the effective permit.
Vertical separation requirements. A MSWLF unit shall be constructed so that the post settlement bottom elevation of the base liner system is a minimum of four feet above the seasonal high groundwater table and bedrock datum plane contours established in the Design Hydrogeological Report prepared in accordance with Rule .1623(b) of this Section.

Survey control. One permanent benchmark of known elevation measured from a U.S. Geological Survey benchmark shall be established and maintained for each 50 acres of developed landfill, or part thereof, at the landfill facility. This benchmark shall be the reference point for establishing vertical elevation control.

Location coordinates. The North Carolina State Plane (NCSP) coordinates shall be established and one of its points shall be the benchmark of known NCSP coordinates.

Landfill subgrade. The landfill subgrade is the in-situ soil layer(s), constructed embankments, and select fill providing the foundation for construction of the unit. A foundation analysis shall be performed to determine the structural integrity of the subgrade to support the loads and stresses imposed by the weight of the landfill and to support overlying facility components and maintain their integrity of the components. Minimum post-settlement slope for the subgrade shall be two percent. Safety factors shall be specified for facilities located in a Seismic Impact Zones.

Materials required. The landfill subgrade shall be adequately free of organic material and consist of in-situ soils or a select fill approved by the Division in accordance with the performance standards contained in Subparagraph (b)(7) of this Rule.

Construction requirements. The landfill subgrade shall be graded in accordance with the approved plans and specifications, which are incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

The owner or operator of the MSWLF units may be required by the permit to notify the Division's hydrogeologist and inspect the subgrade when excavation is completed or if bedrock or other unpredicted subsurface conditions are encountered during excavation.

Certification requirements. At a minimum, the subgrade surface shall be inspected in accordance with the following requirements:

Before beginning construction of the base liner system, the project engineer shall visually inspect the exposed surface to evaluate the suitability of the subgrade and document that the surface is properly prepared and that the elevations are consistent with the approved engineering plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section;

The subgrade shall be proof-rolled using procedures and equipment specified by the design or project engineer; and

The subgrade shall be tested for density and moisture content at a minimum frequency as specified in the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

Compacted clay liners. Compacted clay liners are low permeability barriers designed to control fluid migration in a cap liner system or base liner system.

Materials required. The soil materials used in constructing a compacted clay liner may consist of on-site or off-site sources, or a combination of sources; sources may possess adequate native properties or may require bentonite conditioning to meet the permeability requirement. The soil material shall be free of particles greater than three inches in any dimension.

Construction requirements. Construction methods for the compacted clay liner shall be based upon the type and quality of the borrow source and shall be verified in the field by constructing test pad(s). The project engineer shall ensure that the compacted clay liner installation conforms with the Division approved plans including the following minimum requirements:

A test pad shall be constructed prior to beginning installation of the compacted clay liner and whenever there is a significant change in soil material properties. The area and equipment, liner thickness, and subgrade slope and conditions shall be representative of full scale construction. Acceptance and rejection criteria shall be
verified for the tests specified in accordance with Part (C) of this Subparagraph. For each lift, a minimum of three test locations shall be established for testing moisture content, density, and a composite sample for recompacted lab permeability. At least one Shelby tube sample for lab permeability testing, or another in-situ test that is approved by the Division as equivalent for permeability determination shall be obtained per lift.

(ii) Soil conditioning, placement, and compaction shall be maintained within the range identified in the moisture-density-permeability relation developed in accordance with Subparagraph (C) of this Paragraph.

(iii) The final compacted thickness of each lift shall be a maximum of six inches.

(iv) Prior to placement of successive lifts, the surface of the lift in place shall be scarified or otherwise conditioned to eliminate lift interfaces.

(v) The final lift shall be protected from environmental degradation.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of all quality assurance and quality control testing required in this Subparagraph. The testing procedures and protocols shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the Division approved plans including the following requirements:

(i) At a minimum, the quality control testing for accepting materials prior to and during construction of a compacted clay liner shall include: particle size distribution analysis, Atterberg limits, triaxial cell laboratory permeability, moisture content, percent bentonite admixed with soil, and the moisture-density-permeability relation. The project engineer shall certify that the materials used in construction were tested according to the Division approved plans.

(ii) At a minimum, the quality assurance testing for evaluating each lift of the compacted clay liner shall include: moisture content and density, and permeability testing. For each location the moisture content and density shall be compared to the appropriate moisture-density-permeability relation. The project engineer shall certify that the liner was constructed using the methods and acceptance criteria consistent with test pad construction and tested in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(iii) Any tests resulting in the penetration of the compacted clay liner shall be repaired using bentonite or as approved by the Division.

(9) Geosynthetic Clay liners. Geosynthetic clay liners are geosynthetic hydraulic barriers manufactured in sheets and installed by field seaming techniques.

(A) Materials required. Geosynthetic clay liners shall consist of natural sodium bentonite clay or equivalent, encapsulated between two geotextiles or adhered to a geomembrane. The liner material and any seaming materials shall have chemical and physical resistance not adversely affected by environmental exposure, waste placement, leachate generation and subgrade moisture composition. Accessory bentonite, used for seaming, repairs and penetration seaming shall be made from the same sodium bentonite as used in the geosynthetic clay liner or as recommended by the manufacturer. The type of geosynthetic clay liner shall be approved by the Division according to the criteria set forth in this Part.

(i) Reinforced geosynthetic clay liners shall be used on all slopes greater than 10H:IV.

(ii) The geosynthetic clay liner material shall have a demonstrated hydraulic conductivity of not more than 5 X 10^-9 cm/sec under the anticipated confining pressure.

(B) Design and Construction requirements. The design engineer shall ensure that the design of the geosynthetic clay liner installation conforms to the requirements of the manufacturer's recommendations and the Division approved plans. The Division approved plans shall provide for and include the following provisions:
(i) The surface of the supporting soil upon which the geosynthetic clay liner will be installed shall be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could damage the geosynthetic clay liner;

(ii) Materials placed on top of the GCL shall be placed in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section. Equipment used to install additional geosynthetics shall be specified by the design engineer and as recommended by the manufacturer. A minimum of 12 inches of separation between the application equipment and the geosynthetic clay liner shall be provided when applying soil materials;

(iii) Materials that become prematurely hydrated shall be removed, repaired, or replaced, as specified by the project engineer and in accordance with the plans incorporated into the permit to construct prepared in accordance with Rule .1604(b) of this Section;

(iv) Field seaming preparation and methods, general orientation criteria, and restrictive weather conditions;

(v) Anchor trench design;

(vi) Critical tensile forces and slope stability, including seismic design;

(vii) Protection from environmental damage; and

(viii) Physical protection from the materials installed directly above the geosynthetic clay liner.

(C) Certification requirements.

(i) Before beginning installation of the geosynthetic clay liner, the project engineer shall visually inspect the exposed surface to evaluate the suitability of the subgrade and document that the surface is properly prepared and that the elevations are consistent with the approved engineering plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(ii) The project engineer shall ensure that the geosynthetic clay installation conforms to the requirements of the manufacturer’s recommendations and the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(iii) The project engineer shall include in the construction quality assurance report a discussion of quality assurance and quality control testing to document that material is placed in accordance with plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(iv) The project engineer shall include in the construction quality assurance report a discussion of the approved data resulting from the quality assurance and quality control testing required in this Subparagraph.

(v) The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division.

(vi) The results of all testing shall be included in the construction quality assurance report, including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and performance documentation of all retesting, in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section, including the following:

(I) Quality control testing of the raw materials and manufactured product;

(II) Field and independent laboratory destructive testing of geosynthetic clay liner samples;

(III) Documentation prepared by the project engineer in accordance with Subpart (b)(9)(C)(i) of this Rule.

(10) Geomembrane liners. Geomembrane liners are geosynthetic hydraulic barriers manufactured in sheets and installed by field seaming techniques.

(A) Materials required. The liner material and any seaming materials shall have chemical and physical resistance not adversely affected by environmental exposure, waste placement and leachate generation. The type of geomembrane shall be approved by the Division according to the criteria set forth in this Part.
(i) High density polyethylene geomembrane liners shall have a minimum thickness of 60 mils.
(ii) The minimum thickness of any geomembrane approved by the Division shall be greater than 30 mils.

(B) Construction requirements. The project engineer shall ensure that the geomembrane installation conforms to the requirements of the manufacturer's recommendations and the Division approved plans including the following:

(i) The surface of the supporting soil upon which the geomembrane will be installed shall be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt changes in grade that could damage the geomembrane;
(ii) Field seaming preparation and methods, general orientation criteria, and restrictive weather conditions;
(iii) Anchor trench design;
(iv) Critical tensile forces and slope stability;
(v) Protection from environmental damage; and
(vi) Physical protection from the materials installed directly above the geomembrane.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the approved data resulting from the quality assurance and quality control testing required in this Subparagraph. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section, including the following:

(i) Quality control testing of the raw materials and manufactured product;
(ii) At a minimum, test seams shall be made upon each start of work for each seaming crew, upon every four hours of continuous seaming, every time seaming equipment is changed or if significant changes in geomembrane temperature and weather conditions are observed;
(iii) Nondestructive testing of all seams; and
(iv) Field and independent laboratory destructive testing of seam samples.

(11) Leachate collection pipes. A leachate collection pipe network shall be a component of the leachate collection system and shall be hydraulically designed to convey leachate from the MSWLF unit to an appropriately sized leachate storage or treatment facility or a point of off-site transport. Leachate collection piping shall comply with the following:

(A) Materials required.

(i) The leachate collection piping shall have a minimum nominal diameter of six inches.
(ii) The chemical properties of the pipe and any materials used in installation shall not be adversely affected by waste placement or leachate generated by the landfill.
(iii) The physical properties of the pipe shall provide adequate structural strength to support the maximum static and dynamic loads and stresses imposed by the overlying materials and any equipment used in construction and operation of the landfill. Specifications for the pipe shall be submitted in the engineering report.

(B) Construction requirements.

(i) Leachate collection piping shall be installed according to the plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.
(ii) The location and grade of the piping network shall provide access for periodic cleaning.
(iii) The bedding material for the leachate collection pipe shall consist of a coarse aggregate installed in direct contact with the pipe. The aggregate shall be chemically compatible with the leachate generated and shall be placed to provide adequate support to the pipe. The bedding material for main collector lines shall be
extended to and in direct contact with the waste layer or a graded soil or granular filter.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with plans incorporated into the permit to construct in accordance with Rule .1604(b) of this Section, including the following:

(i) All leachate piping installed from the MSWLF unit to the leachate storage or treatment facility shall be watertight.

(ii) The seal where the piping system penetrates the geomembrane shall be inspected and non-destructively tested for leakage.

(12) Drainage layers. Any soil, granular, or geosynthetic drainage nets used in the leachate collection system shall conform to the following requirements:

(A) Materials required.

(i) The chemical properties of the drainage layer materials shall not be adversely affected by waste placement or leachate generated by the landfill.

(ii) The physical and hydraulic properties of the drainage layer materials shall promote lateral drainage of leachate through a zone of relatively high permeability or transmissivity under the predicted loads imposed by overlying materials.

(B) Construction requirements.

(i) The drainage layer materials shall be placed in accordance with the approved plans prepared in accordance with Rule .1604(b) of this Section and in a manner that prevents equipment from working directly on the geomembrane.

(ii) The drainage layer materials shall be stable on the slopes specified on the engineering drawings.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure that the drainage layer material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the approved plans prepared in accordance with Rule .1604(b) of this Section.

(13) Filter layer criteria. All filter collection layers used in the leachate collection system shall be designed to prevent the migration of fine soil particles into a courser grained material, and permit water or gases to freely enter a drainage medium (pipe or drainage layer) without clogging.

(A) Materials required.

(i) Graded cohesionless soil filters. The granular soil material used as a filter shall have no more than five percent by weight passing the No. 200 sieve and no soil particles larger than three inches in any dimension.

(ii) Geosynthetic filters. Geosynthetic filter materials shall demonstrate adequate permeability and soil particle retention, and chemical and physical resistance which is not adversely affected by waste placement, any overlying material or leachate generated by the landfill.

(B) Construction requirements. All filter layers shall be installed in accordance with the engineering plan and specifications incorporated into the permit to construct prepared in accordance with Rule .1604(b) of this Section. Geosynthetic filter materials shall not be wrapped directly around leachate collection piping.

(C) Certification requirements. The project engineer shall include in the construction quality assurance report a discussion of the quality assurance and quality control testing to ensure
that the filter layer material is placed according to the approved plans. The testing procedures and protocols for field installation shall be submitted in accordance with Rule .1621 of this Section and approved by the Division. The results of all testing shall be included in the construction quality assurance report including documentation of any failed test results, descriptions of the procedures used to correct the improperly installed material, and statements of all retesting performed in accordance with the approved plans prepared in accordance with Rule .1604(b) of this Section.

(14) Special engineering structures. Engineering structures incorporated in the design and necessary to comply with the requirements of this Section shall be specified in the engineering plan. Material, construction, and certification requirements necessary to ensure that the structure is constructed according to the design and acceptable engineering practices shall be included in the Division approved plan.

(15) Sedimentation and erosion control. Adequate structures and measures shall be designed and maintained to manage the run-off generated by the 24-hour, 25-year storm event, and conform to the requirements of the Sedimentation Pollution Control Law (15A NCAC 4).

(16) Construction quality assurance (CQA) report. 
(A) A CQA report shall be submitted:
   (i) After completing landfill construction in order to qualify the constructed MSWLF unit for a permit to operate;
   (ii) After completing construction of the cap system in accordance with the requirements of Rule .1629; and
   (iii) According to the reporting schedule developed in accordance with Rule .1621 of this Section.
(B) The CQA report shall include, at a minimum, the information prepared in accordance with the requirements of Rule .1621 of this Section containing results of all construction quality assurance and construction quality control testing required in this Rule including documentation of any failed test results, descriptions of procedures used to correct the improperly installed material and results of all retesting performed. The CQA report shall contain as-built drawings noting any deviation from the approved engineering plans and shall also contain a comprehensive narrative including but not limited to daily reports from the project engineer and a series of color photographs of major project features.
(C) The CQA report shall bear the seal of the project engineer and a certification that construction was completed in accordance with:
   (i) The CQA plan;
   (ii) The conditions of the permit to construct;
   (iii) The requirements of this Rule; and
   (iv) Acceptable engineering practices.
(D) The Division shall review the CQA report within 30 days of a complete submittal to ensure that the report meets the requirements of this Subparagraph.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>MCL(mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>0.05</td>
</tr>
<tr>
<td>Barium</td>
<td>1.0</td>
</tr>
<tr>
<td>Benzene</td>
<td>0.005</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.01</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>0.005</td>
</tr>
<tr>
<td>Chromium (hexavalent)</td>
<td>0.05</td>
</tr>
<tr>
<td>2,4-Dichlorophenoxy acetic acid</td>
<td>0.1</td>
</tr>
<tr>
<td>1,4-Dichlorobenzene</td>
<td>0.075</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
<td>0.005</td>
</tr>
<tr>
<td>1,1-Dichloroethylene</td>
<td>0.007</td>
</tr>
</tbody>
</table>
### 15A NCAC 13B .1625  OPERATION PLAN FOR MSWLF FACILITIES

(a) The operator of a MSWLF unit shall maintain and operate the facility according to the operation plan prepared in accordance with this Rule.

1. **Existing MSWLF units.** The operator of an existing MSWLF unit shall meet the following requirements.
   
   (A) The operation plan shall be prepared as the information becomes available.
   
   (B) The operation plan shall be completed and submitted on or before April 9, 1994.
   
   (C) The operation plan shall describe the existing phase of landfill development through the final receipt of wastes established in accordance with Subparagraph (c)(10) of the Rule .1627.
   
   (D) The operator of an existing MSWLF unit which will reach permitted capacity prior to October 9, 1996 as set forth in the effective permit shall:
      
      (i) Complete the operation plan and submit five copies to the Division at least 60 days prior to reaching permitted capacity; and
      
      (ii) Receive at least partial approval from the Division as set forth in Part (d)(2)(B) of Rule .1603 in order to continue operation of the existing MSWLF unit.

2. **New MSWLF units and lateral expansions.** The operation plan shall be submitted in accordance with Rules .1617 and .1604(b)(2)(P) of this Section. Each phase of operation shall be defined by an area which will contain approximately five years of disposal capacity.

(b) **Operation Plan.** The owner or operator of a MSWLF unit shall prepare an operation plan for each phase of landfill development. The plan shall include drawings and a report clearly defining the information proposed for the Division approved plan.

1. **Operation drawings.** Drawings shall be prepared for each phase of landfill development. The drawings shall be consistent with the engineering plan and prepared in a format which is useable for the landfill operator. The operation drawings shall illustrate the following:
   
   (A) Existing conditions, including the known limits of existing disposal areas;
   
   (B) Progression of construction cells for incremental or modular construction;
   
   (C) Progression of operation, including initial waste placement, daily operations, transition contours, and final contours;
   
   (D) Leachate and stormwater controls for active and inactive subcells;
   
   (E) Special waste areas within the MSWLF unit;
   
   (F) Buffer zones, noting restricted use; and
   
   (G) Stockpile and borrow operations.
(2) Operation report. The report shall provide a narrative discussion of the operation drawings and contain a description of the facility operation that conforms to the requirements of Rule .1626 of this Section.

(3) The operation plan for an existing MSWLF unit shall include:

(A) The facility's programs set forth in Parts (1)(f), (2)(b), and (4)(b) of Rule .1626;

(B) A Sedimentation and Erosion Control plan which incorporates adequate measures to control surface water run-off and run-on generated from the 24-hour, 25-year storm event;

(C) Operation drawings that illustrate annual phases of development which are consistent with the minimum and maximum slope requirements set forth in Subparagraph (c)(3) of Rule .1627;

(D) The remaining permitted capacity approved by the Division prior to October 9, 1993, and calculated from October 9, 1993 using reasonable methods, data, and assumptions; and

(E) Documented closure of the landfill unit(s) which stopped receiving waste before October 9, 1991.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1626 OPERATIONAL REQUIREMENTS FOR MSWLF FACILITIES

The owner or operator of any MSWLF unit must maintain and operate the facility in accordance with the requirements set forth in this Rule and the operation plan as described in Rule .1625 of this Section.

(1) Waste Acceptance and Disposal Requirements.

(a) A MSWLF shall only accept those solid wastes which it is permitted to receive. The landfill owner or operator shall notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve.

(b) The following wastes are prohibited from disposal at a MSWLF unit:

(i) Hazardous waste as defined within 15A NCAC 13A, including hazardous waste from conditionally exempt small quantity generators.

(ii) Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761.

(iii) Liquid wastes unless they are managed in accordance with Item (9) of this Rule.

(c) Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site shall be covered upon receipt.

(d) Asbestos waste shall be managed in accordance with 40 CFR 61, which is hereby incorporated by reference including any subsequent amendments and additions. Copies of 40 CFR 61 are available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste, 401 Oberlin Road, Raleigh, N.C. at no cost. The waste shall be covered upon receipt, with soil or waste, in a manner that will not cause airborne conditions and must be disposed of separate and apart from other solid wastes:

(i) At the bottom of the working face; or

(ii) In an area not contiguous with other disposal areas. Separate areas shall be designated, with signage, so that asbestos is not exposed by future land-disturbing activities.

(e) Wastewater treatment sludges may only be accepted for disposal in accordance with the following conditions:

(i) Utilized as a soil conditioner and incorporated into or applied onto the vegetative growth layer but, in no case greater than six inches in depth; or

(ii) Co-disposed if the facility meets all design requirements contained within Rule .1624, and approved within the permit, or has been previously approved as a permit condition.

(f) Owners or operators of all MSWLF units must implement a program at the facility for detecting and preventing the disposal of hazardous and liquid wastes. This program must include, in accordance with 40 CFR 258.20:

(i) Random inspections of incoming loads or other comparable procedures;

(ii) Records of any inspections;
Training of facility personnel to recognize hazardous and liquid wastes; and

Development of a contingency plan to properly manage any identified hazardous and liquid wastes. The plan must address identification, removal, storage and final disposition of the waste.

Waste placement at existing MSWLF units shall meet the following criteria:

(i) Waste placement at existing MSWLF units not designed and constructed with a base liner system approved by the Division shall be within the areal limits of the actual waste boundary established prior to October 9, 1993 and in a manner consistent with the effective permit.

(ii) Waste placement at existing MSWLF units designed and constructed with a base liner system permitted by the Division prior to October 9, 1993 and approved for operation by the Division shall be within the areal limits of the base liner system and in manner consistent with the effective permit.

Cover material requirements.

(a) Except as provided in Sub-Item (b) of this Item, the owners or operators of all MSWLF units must cover disposed solid waste with six inches of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.

(b) Alternative materials of an alternative thickness (other than at least six inches of earthen material) may be approved by the Division if the owner or operator demonstrates that the alternative material and thickness control disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, in accordance with 40 CFR Part 258.21. A MSWLF owner or operator may apply for a generic approval of an alternative cover material, which would extend to all MSWLF units.

(c) Areas which will not have additional wastes placed on them for 12 months or more, but where final termination of disposal operations has not occurred, shall be covered with a minimum of one foot of intermediate cover.

Disease vector control.

(a) Owners or operators of all MSWLF units must prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.

(b) For purposes of this Item, "disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

Explosive gases control.

(a) Owners or operators of all MSWLF units must ensure that:

(i) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and

(ii) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.

(b) Owners or operators of all MSWLF units must implement a routine methane monitoring program to ensure that the standards of Sub-item (4)(a) of this Rule are met. The type and frequency of monitoring must be determined based on the following factors:

(i) Soil conditions;

(ii) The hydrogeologic conditions surrounding the facility;

(iii) The hydraulic conditions surrounding the facility; and

(iv) The location of facility structures and property boundaries.

The minimum frequency of monitoring shall be quarterly.

(c) If methane gas levels exceeding the limits specified in Sub-item (4)(a) of this Rule are detected, the owner or operator must:

(i) Immediately take all necessary steps to ensure protection of human health and notify the Division, as provided in 40 CFR Part 258.23;

(ii) Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.

Based on the need for an extension demonstrated by the operator, the Division may establish alternative schedules for demonstrating compliance with Sub-item (4)(c)(ii) and (iii) of this Rule.

(d) For purposes of this Item, "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.

(5) Air Criteria.
(a) Owners or operators of all MSWLFs must ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.
(b) Open burning of solid waste, except for the infrequent burning of land clearing debris generated on site or debris from emergency clean-up operations, as provided for in 40 CFR Part 258.24, is prohibited at all MSWLF units. Any such infrequent burning must be approved by the Division.
(c) Equipment shall be provided to control accidental fires or arrangements shall be made with the local fire protection agency to provide fire-fighting services as soon as needed.
(d) Fires that occur at a MSWLF require verbal notice to the Division within 24 hours and written notification shall be submitted within 15 days.

(6) Access and safety requirements.
(a) The MSWLF shall be secured by means of gates, chains, berms, fences and other security measures approved by the Division to prevent unauthorized entry.
(b) An attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
(c) The access road to the site shall be of all-weather construction and maintained in good condition.
(d) Dust control measures shall be implemented.
(e) Signs providing information on dumping procedures, the hours during which the site is open for public use, the permit number and the information specified in the permit conditions shall be posted at the site entrance.
(f) Signs shall be posted stating that no hazardous or liquid waste can be received.
(g) Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
(h) The removal of solid waste from a MSWLF is prohibited unless the owner or operator approves and the removal is not performed on the working face.
(i) Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein, except fiber drums containing asbestos.

(7) Erosion and sedimentation control requirements.
(a) Adequate sediment control measures (structures or devices), shall be utilized to prevent silt from leaving the MSWLF facility.
(b) Adequate sediment control measures (structures or devices), shall be utilized to prevent on-site erosion.
(c) Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of MSWLF development.

(8) Drainage control and water protection requirements.
(a) Surface water shall be diverted from the operational area.
(b) Surface water shall not be impounded over or in waste.
(c) Solid waste shall not be disposed of in water.
(d) Leachate shall be contained within a lined disposal cell or leachate collection and storage system. All leachate shall be treated, as required by the receiving facility, prior to discharge.
An NPDES permit may be required prior to the discharge of leachate to surface waters, as provided by 40 CFR Parts 258.26 and 258.27.

(e) MSWLF units shall not:

(i) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES) requirements, pursuant to Section 402.

(ii) 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 under Section 208 or 319 of the Clean Water Act, as amended.

(9) Liquids restrictions.

(a) Bulk or non-containerized liquid waste may not be placed in MSWLF units unless:

(i) The waste is household waste other than septic waste and waste oil; or

(ii) The waste is leachate or gas condensate derived from the MSWLF unit, whether it is a new or existing MSWLF unit or lateral expansion of the unit, is designed with a composite liner and leachate collection system as described within Rule .1624 of this Section.

(b) Containers holding liquid wastes may not be placed in the MSWLF unit unless:

(i) The container is a small container similar in size to that normally found in household waste;

(ii) The container is designed to hold liquids for use other than storage; or

(iii) The waste is household waste.

(c) For the purpose of this Paragraph:

(i) Liquid waste means any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), S.W. 846.

(ii) Gas Condensate means the liquid generated as a result of gas recovery processes at the MSWLF unit.

(10) Recordkeeping requirements.

(a) The owner or operator of a MSWLF unit must record and retain at the facility in an operating record the following information as it becomes available:

(i) Inspection records, waste determination records, and training procedures required in Item (1) of this Rule;

(ii) Amounts by weight of solid waste received at the facility including source of generation;

(iii) Gas monitoring results and any remediation plans required by Item (4) of this Rule;

(iv) Any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .1630 thru .1637 of this Section;

(v) Any monitoring, testing, or analytical data as required by Rule .1627 of this Section; and

(vi) Any cost estimates and financial assurance documentation required by Rule .1628 of this Section.

(b) All information contained in the operating record must be furnished upon request to the Division or be made available at all reasonable times for inspection by the Division.

(c) The owner or operator must maintain a copy of the operation plan required by Rule .1625 of this Section at the facility.

(11) Spreading and Compacting requirements.

(a) MSWLF units shall restrict solid waste into the smallest area feasible.

(b) Solid waste shall be compacted as densely as practical into cells.

(c) Methods such as fencing and diking shall be provided within the area to confine solid waste subject to be blown by the wind. At the conclusion of each day of operation, all windblown material resulting from the operation shall be collected and returned to the area by the owner or operator.
(12) Leachate management plan. The owner or operator of a MSWLF unit designed with a leachate collection system must establish and maintain a leachate management plan which includes the following:
(a) Periodic maintenance of the leachate collection system;
(b) Maintaining records for the amounts of leachate generated;
(c) Semi-annual leachate quality sampling;
(d) Approval for final leachate disposal; and
(e) A contingency plan for extreme operational conditions.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993; Amended Eff. May 1, 2011.

15A NCAC 13B .1627 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR MSWLF FACILITIES
(a) Purpose. This Rule establishes criteria for the closure of all MSWLF units and subsequent requirements for post-closure compliance. The owner or operator is required to develop specific plans for the MSWLF facility under Rule .1629.
(b) Scope.
(1) Closure. Standards are established for the scheduling and documenting closure of all MSWLF units, and designing the cap system. Construction requirements for the cap system incorporate specific requirements from Rule .1624 of this Section.
(2) Post-closure. Standards are established for the monitoring and maintenance of the MSWLF unit(s) following closure.
(c) Closure criteria.
(1) New and existing MSWLF units and lateral expansions shall install a cap system that is designed to minimize infiltration and erosion. The cap system shall be designed and constructed to:
(A) Have a permeability less than or equal to the permeability of any base liner system or the in-situ subsoils underlaying the landfill, or the permeability specified for the final cover in the effective permit, or a permeability no greater than 1 x 10^-5 cm/sec, whichever is less;
(B) Minimize infiltration through the closed MSWLF by the use of a low-permeability barrier that contains a minimum 18 inches of earthen material; and
(C) Minimize erosion of the cap system and protect the low-permeability barrier from root penetration by use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.
(2) The Division may approve an alternative cap system if the owner or operator can adequately demonstrate the following:
(A) The alternative cap system will achieve an equivalent or greater reduction in infiltration as the low-permeability barrier specified in Subparagraph (1) of this Paragraph; and
(B) The erosion layer will provide equivalent or improved protection as the erosion layer specified in Subparagraph (3) of this Paragraph.
(3) Construction of the cap system for all MSWLF units shall conform to the requirements set forth in Subparagraphs (b)(8), (b)(9) and (b)(15) of Rule .1624 and the following requirements:
(A) Post-settlement surface slopes shall be a minimum of five percent and a maximum of 25 percent; and
(B) A gas venting or collection system shall be installed below the low-permeability barrier to minimize pressures exerted on the barrier.
(4) Prior to beginning closure of each MSWLF unit as specified in Subparagraph (5) of this Paragraph, an owner or operator shall notify the Division that a notice of the intent to close the unit has been placed in the operating record.
(5) The owner or operator shall begin closure activities of each MSWLF unit no later than 30 days after the date on which the MSWLF unit receives the known final receipt of wastes or, if the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit 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 Division if the owner or operator...
demonstrates that the MSWLF unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed MSWLF unit.

(6) The owner or operator of all MSWLF units shall complete closure activities of each MSWLF unit in accordance with the closure plan within 180 days following the beginning of closure as specified in Subparagraph (5) of this Paragraph. Extensions of the closure period may be granted by the Division if the owner or operator demonstrates that closure will, of necessity, 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 MSWLF unit.

(7) Following closure of each MSWLF unit, the owner or operator shall notify the Division that a certification, signed by the project engineer verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record.

(8) Recordation.  
(A) Following closure of all MSWLF units, the owner or operator shall record a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title search, and notify the Division that the notation has been recorded and a copy has been placed in the operating record.  
(B) The notation on the deed shall in perpetuity notify any potential purchaser of the property that:  
(i) The land has been used as a landfill facility; and  
(ii) Its use is restricted under the closure plan approved by the Division.

(9) The owner or operator may request permission from the Division to remove the notation from the deed if all wastes are removed from the facility.

(10) Existing MSWLF units. The following criteria shall apply to existing MSWLF units not designed and constructed with a base liner system permitted by the Division.  
(A) The existing MSWLF unit shall cease receiving solid waste on or before January 1, 1998.  
(B) The Division shall schedule closure of the existing MSWLF unit based on its review of the application submitted in accordance with Paragraph (d) of Rule .1617 and reviewed in accordance with Subparagraph (d) of Rule .1603.  
(C) Final contours for the existing MSWLF unit shall be consistent with the capacity requirements necessary to close the unit in accordance with the requirements of this Subparagraph.

(d) Post-closure criteria.  
(1) Following closure of each MSWLF unit, the owner or operator shall conduct post-closure care. Post-closure care shall be conducted for 30 years, except as provided under Subparagraph (2) of this Paragraph, and consist of at least the following:  
(A) Maintaining the integrity and effectiveness of any cap system, 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 cap system;  
(B) Maintaining and operating the leachate collection system in accordance with the requirements in Rules .1624 and .1626. The Division may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;  
(C) Monitoring the ground water and surface water in accordance with the requirements of Rules .1631 through .1637 and maintaining the ground-water monitoring system, if applicable; and monitoring the surface water in accordance with the requirements of Rule .0602; and  
(D) Maintaining and operating the gas monitoring system in accordance with the requirements of Rule .1626 of this Section.

(2) The length of the post-closure care period may be:  
(A) Decreased by the Division if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Division; or  
(B) Increased by the Division if the Division determines that the lengthened period is necessary to protect human health and the environment.
Following completion of the post-closure care period for each MSWLF unit, the owner or operator shall notify the Division that a certification, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the operating record.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1628  FINANCIAL ASSURANCE RULE
(a) Applicability and Effective Date.

(1) The requirements of this Rule apply to owners and operators of all MSWLF units that receive waste on or after October 9, 1993, except owners or operators who are State or Federal government entities whose debts and liabilities are the debts and liabilities of a State or the United States.

(2) The requirements of this Rule are effective April 9, 1994.

(3) MSWLF units owned and operated by units of local government or public authorities may elect to use a Capital Reserve Fund as described in Paragraph (e)(1)(I) of this Rule.

(4) Owners and operators of all MSWLF units shall submit detailed cost estimates for closure and post-closure in accordance with Rule .1629 of this Section and this Rule; and, if necessary, for corrective action programs in accordance with Rule .1637 of this Section and this Rule.

(5) Under this Rule, when documents are required to be placed in the operating record of a MSWLF unit, three copies shall be forwarded to the Division.

(6) When allowable mechanisms as specified in Paragraph (e) of this Rule are used in combination to provide financial assurance for closure, post-closure or corrective action, no more than one allowable mechanism shall be provided by the same financial institution or its corporate entities.

(b) Financial Assurance for Closure.

(1) The owner or operator shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all MSWLF units at any time during the active life in accordance with the closure plan required under Rule .1629 of this Section. A copy of the closure cost estimate shall be placed in the MSWLF’s closure plan and the operating record.

(A) The cost estimate shall equal the cost of closing the largest area of all MSWLF units 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 as set forth in Rule .1629 of this Section.

(B) During the active life of the MSWLF unit, the owner or operator shall annually adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s). For owners and operators using the local government financial test, the closure cost estimate shall be updated for inflation within 30 days after the close of the local government's fiscal year and before submission of updated information to the Division.

(C) The owner or operator shall increase the closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes to the closure plan or MSWLF unit conditions increase the maximum cost of closure at any time during the remaining active life.

(D) The owner or operator may reduce the closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the MSWLF unit. Prior to any reduction of the closure cost estimate by the owner or operator, a written justification for the reduction shall be submitted to the Division. No reduction of the closure cost estimate shall be allowed without Division approval. The reduction justification and the Division approval shall be placed in the MSWLF's operating record.

(2) The owner or operator of each MSWLF unit shall establish financial assurance for closure of the MSWLF unit in compliance with Paragraph (e) of this Rule. The owner or operator shall provide continuous coverage for closure until released from financial assurance requirements by demonstrating compliance with Rule .1627(c) of this Section for final closure certification.

(c) Financial Assurance for Post-Closure Care.
The owner or operator shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the MSWLF unit in compliance with the post-closure plan developed under Rule .1629 of this Section. The post-closure cost estimate used to demonstrate financial assurance in Subparagraph (2) of this Paragraph 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 and be placed in the operating record.

(A) 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.

(B) During the active life of the MSWLF unit and during the post-closure care period, the owner or operator shall annually adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s). For owners and operators using the local government financial test, the post-closure cost estimate shall be updated for inflation within 30 days after the close of the local government’s fiscal year and before submission of updated information to the Division.

(C) The owner or operator shall increase the post-closure care cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the post-closure plan or MSWLF unit conditions increase the maximum costs of post-closure care.

(D) The owner or operator may reduce the post-closure cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. Prior to any reduction of the post-closure cost estimate by the owner or operator, a written justification for the reduction shall be submitted to the Division. No reduction of the post-closure cost estimate shall be allowed without Division approval. The reduction justification and the Division approval shall be placed in the MSWLF’s operating record.

(2) The owner or operator of each MSWLF unit shall establish, in a manner in accordance with Paragraph (e) of this Rule, financial assurance for the costs of post-closure care as required under Rule .1629 (c) of this Section. The owner or operator shall provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care by demonstrating compliance with Rule .1627(d) of this Section.

(d) Financial Assurance for Corrective Action.

(1) An owner or operator of a MSWLF unit required to undertake a corrective action program under Rule .1637 of this Section shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action. The corrective action cost estimate shall account for the total costs of corrective action activities as described in the corrective action program for the entire corrective action period. The owner or operator shall notify the Division that the estimate has been placed in the operating record.

(A) The owner or operator shall annually adjust the estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) until the corrective action program is completed in accordance with Rule .1637(f) of this Section. For owners and operators using the local government financial test, the corrective action cost estimate shall be updated for inflation within 30 days after the close of the local government’s fiscal year and before submission of updated information to the Division.

(B) The owner or operator shall increase the corrective action cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the corrective action program or MSWLF unit conditions increase the maximum costs of corrective action.

(C) The owner or operator may reduce the corrective action cost estimate and the amount of financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds the maximum remaining costs of corrective action. Prior to any reduction of the corrective action cost estimate by the owner or operator, a written justification for the reduction shall be submitted to the Division. No reduction of the corrective action cost estimate shall be allowed without Division approval. The reduction justification and the Division approval shall be placed in the MSWLF’s operating record.

(2) The owner or operator of each MSWLF unit required to undertake a corrective action program under Rule .1637 of this Section shall establish, in a manner in accordance with Paragraph (e) of this Rule,
financial assurance for the most recent corrective action program. The owner or operator shall provide
continuous coverage for corrective action until released from financial assurance requirements for
corrective action by demonstrating compliance with Rule .1637(f) and (g) of this Section.

(e) Allowable Mechanisms.

(1) The mechanisms used to demonstrate financial assurance under this Rule shall ensure that the funds
necessary to meet the costs of closure, post-closure care, and corrective action for known releases shall
be available whenever they are needed. Owners and operators shall choose from the options specified
in Parts (A) through (I) of this Paragraph.

(A) Trust Fund.

(i) An owner or operator may satisfy the requirements of this Paragraph by establishing
a trust fund which conforms to the requirements of this Part. The trustee shall be an
entity which has the authority to act as a trustee and whose trust operations are
regulated and examined by a Federal or State agency. A copy of the trust agreement
shall be placed in the facility's operating record.

(ii) Payments into the trust fund shall be made annually by the owner or operator over
the term of the initial permit or over the remaining life of the MSWLF unit, in the
case of a trust fund for closure or post-closure care, or over one-half of the
estimated length of the corrective action program in the case of corrective action for
known releases. This period is referred to as the pay-in period.

(iii) 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, except as provided in Part (J) of this
Paragraph, divided by the number of years in the pay-in period as defined in Part
(A)(ii) of this Paragraph. The amount of subsequent payments shall be determined
by the following formula:

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.

(iv) 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 Part (J) of this Paragraph. The
amount of subsequent payments shall be determined by the following formula:

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

where CE is the current cost estimate for corrective action (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.

(v) The initial payment into the trust fund shall be made before the initial receipt of
waste or before the effective date of this Rule (April 9, 1994), whichever is later, 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
Rule .1636 of this Section. Subsequent payments shall be made no later than 30
days after each anniversary date of the first payment.

(vi) If the owner or operator establishes a trust fund after having used one or more
alternate mechanisms specified in this Paragraph, 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 specifications of
this Part.
(vii) The owner or operator, or other person authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee and Division for these expenditures. Requests for reimbursement shall be granted only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating record. The owner or operator shall document in the operating record that reimbursement has been received.

(viii) The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance as specified in this Rule or if no longer required to demonstrate financial responsibility in accordance with the requirements of Paragraph (b)(2), (c)(2) or (d)(2) of this Rule.

(ix) The trust agreement shall be accompanied by a formal certification of acknowledgement. Schedule A of the trust agreement shall be updated within 60 days after any change in the amount of the current cost estimate covered by the agreement.

(B) Surety Bond Guaranteeing Payment or Performance.

(i) An owner or operator 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 Part. An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of this Part. The bond shall be effective before the initial receipt of waste or before the effective date of this Rule, (April 9, 1994), whichever is later, 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 Rule .1636 of this Section. The owner or operator shall place a copy of the bond in the operating record. 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 which is incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina at no cost.

(ii) 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 Paragraph (e)(1)(J) of this Rule.

(iii) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(iv) The owner or operator shall establish a standby trust fund. The standby trust fund shall meet the requirements of Paragraph (e)(1)(A) of this Rule except the requirements for initial payment and subsequent annual payments specified in Paragraph (e)(1)(A)(ii), (iii), (iv) and (v) of this Rule.

(v) 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 and Division.

(vi) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner and operator and to the Division 120 days in advance of cancellation. If the surety cancels the bond, the owner or operator shall obtain alternate financial assurance as specified in this Rule.

(vii) The owner or operator may cancel the bond only if alternate financial assurance is substituted as specified in this Rule or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with Paragraph (b)(2), (c)(2) or (d)(2) of this Rule.

(C) Letter of Credit.

(i) An owner or operator may satisfy the requirements of this Paragraph by obtaining an irrevocable standby letter of credit which conforms to the requirements of this
Part. The letter of credit shall be effective before the initial receipt of waste or before the effective date of this Rule (April 9, 1994), whichever is later, 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 Rule .1636 of this Section. The owner or operator shall place a copy of the letter of credit in the operating record. 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.

(ii) A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: name and address of the facility, and the amount of funds assured, shall be included with the letter of credit in the operating record.

(iii) The letter of credit shall be irrevocable and issued for a period of at least one 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 Paragraph (e)(1)(J) of this Rule. The letter of credit shall provide that the expiration date shall 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 owner and operator and to the Division 120 days in advance of cancellation. If the letter of credit is canceled by the issuing institution, the owner or operator shall obtain alternate financial assurance.

(iv) The owner or operator may cancel the letter of credit only if alternate financial assurance is substituted as specified in this Rule or if the owner or operator is released from the requirements of Paragraph (b)(2), (c)(2) or (d)(2) of this Rule.

(v) The owner or operator shall establish a standby trust fund. The standby trust fund shall meet the requirements of Paragraph (e)(1)(A) of this Rule except the requirements for initial payment and subsequent annual payments specified in Paragraph (e)(1)(A)(ii), (iii), (iv) and (v) of this Rule.

(vi) Payments made under the terms of the letter of credit shall be deposited by the issuing institution directly into the standby trust fund. Payments from the trust fund shall be approved by the trustee and the Division.

(D) Insurance.

(i) An owner or operator may demonstrate financial assurance for closure and post-closure care by obtaining insurance which conforms to the requirements of this Part. The insurance shall be effective before the initial receipt of waste or before the effective date of this Rule, (April 9, 1994), whichever is later. 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 North Carolina. The owner or operator shall place a copy of the insurance policy in the operating record.

(ii) The closure or post-closure care insurance policy shall guarantee that funds shall be available to close the MSWLF unit whenever final closure occurs or to provide post-closure care for the MSWLF unit 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 owner or operator or other person authorized to conduct closure or post-closure care, up to an amount equal to the face amount of the policy.

(iii) 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 (e)(1)(J) of this Rule. 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 shall be lowered by the amount of the payments.

(iv) An owner or operator, 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 placed in the operating record. The owner or operator
shall document in the operating record that reimbursement and Division approval
has been received.

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

(vi) 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 owner and operator and to the Division 120 days in advance of cancellation. If
the insurer cancels the policy, the owner or operator shall obtain alternate financial
assurance as specified in this Rule.

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

(viii) The owner or operator may cancel the insurance policy only if alternate financial
assurance is substituted as specified in this Rule or if the owner or operator is no
longer required to demonstrate financial responsibility in accordance with the
requirements of Paragraph (b)(2), (c)(2) or (d)(2) of this Rule.

(E) Corporate Financial Test.
[Reserved]

(F) Local Government Financial Test. An owner or operator of a MSWLF which is a unit of
local government may satisfy the requirements of this Paragraph by demonstrating that it
meets the requirements of the local government financial test as specified in this Part.
Financial terms used in this Part are to be interpreted consistent with generally accepted
accounting principles. The test consists of a financial component, a public notice component,
and a record-keeping and reporting component. A unit of local government shall satisfy each
of the three components annually to pass the test.

(i) Financial Component. In order to satisfy the financial component of the test, a unit
of local government shall meet the criteria of either (I) or (II) of this Subpart and in
addition shall meet the conditions outlined in (III) of this Subpart.

(I) A ratio of the current cost estimates for closure, post-closure, corrective
action, or the sum of the combination of such costs to be covered, and any
other environmental obligations assured by a financial test, to total
revenue [as stated on the Local Government Commission's Annual
Financial Information Report (AFIR) Part 2] less than or equal to 0.43; a
ratio of operating cash plus investments (as stated on the AFIR Part 7) to
total operating expenditures (as stated on the AFIR Part 4 Columns a and
b and Part 5 for municipalities or Part 5 excluding educational capital
outlays for counties) greater than or equal to 0.05; and a ratio of annual
debt service (as stated on the AFIR Part 4 Section I) to total operating
expenditures less than or equal to 0.20.

(II) A current bond rating of Baa or above as issued by Moody's, BBB or
above as issued by Standard & Poor's, BBB or above as issued by Fitch's,
or 75 or above as issued by the Municipal Council; a ratio of the current
cost estimates for closure, post-closure, corrective action, or the sum of the
combination of such costs to be covered, and any other environmental
obligations assured by a financial test to total revenue less than or equal to 0.43.

(III) A unit of local government shall not have operated at a total operating fund deficit equal to five percent or more of total annual revenue in either of the past two fiscal years; it shall not currently be in default on any outstanding general obligation bonds or any other long-term obligations; and it shall not have any outstanding general obligation bonds rated lower than Baa as issued by Moody's, BBB as issued by Standard & Poor's, BBB as issued by Fitch's or lower than 75 as issued by the Municipal Council.

(ii) Public Notice Component. In order to satisfy the Public Notice Component of the test, a unit of local government shall disclose its closure, post-closure, and corrective action cost estimates and relevant information in accordance with generally accepted accounting principles.

(iii) Record-keeping and Reporting Component. To demonstrate that the unit of local government meets the requirements of this test, a letter signed by the unit of local government's chief financial officer (CFO) and worded as specified in Part (e)(2)(G) of this Rule shall be placed in the operating record in accordance with the deadlines of Subpart (iv) of this Part. The letter shall:
(I) List all the current cost estimates covered by a financial test, as described in Subpart (v) of this Part;
(II) Provide evidence and certify that the unit of local government meets the conditions of either Subpart (i)(I) or (i)(II) of this Part; and
(III) Certify that the unit of local government meets the conditions of Subpart (i)(III) of this Part.

(iv) In the case of closure and post-closure care, the Chief Financial Officer's letter shall be placed in the operating record before the initial receipt of waste or by April 9, 1994, whichever is later. In the case of corrective action, the CFO's letter shall be placed in the operating record no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of Rule .1636.

(v) When calculating the "current cost estimates for closure, post-closure, corrective action, or the sum of the combination of such costs to be covered, and any other environmental obligations assured by a financial test" referred to in Part (F)(i) of this Paragraph, the unit of local government shall include cost estimates required for municipal solid waste management facilities under 15A NCAC 13B .1600, as well as cost estimates required for all other environmental obligations it assures through a financial test, including but not limited to those associated with hazardous waste treatment, storage, and disposal facilities under 15A NCAC 13A .0009 and .0010, petroleum underground storage tank facilities under 15A NCAC 2N .0100 through .0800, Underground Injection Control facilities under 15A NCAC 2D .0400 and 15A NCAC 2C .0200, and PCB storage facilities under 15A NCAC 2O .0100 and 15A NCAC 2N .0100.

(vi) Annual updates of the financial test letter shall be placed in the operating record within 120 days after the close of each succeeding fiscal year.

(vii) If the unit of local government no longer meets the requirements of Parts (i), (ii), and (iii) of this Paragraph, the unit of local government shall notify the Division of intent to establish alternate financial assurance within 120 days after the end of the fiscal year for which the year-end financial data show that the unit of local government no longer meets the requirements. The unit of local government shall provide alternate financial assurance within 150 days after the end of said fiscal year.

(viii) The unit of local government is no longer required to comply with the requirements of this Part if alternate financial assurance is substituted as specified in this Rule or if the unit of local government is no longer required to demonstrate financial responsibility in accordance with Paragraph (b)(2), (c)(2) or (d)(2) of this Rule.

(G) Corporate Guarantee.
Local Government Guarantee.

Capital Reserve Fund.

(i) MSWLF units owned or operated by units of local government or public authority may satisfy the requirements of this Paragraph by establishing a capital reserve fund which conforms to the requirements of this Part. The unit of local government or public authority shall be an entity which has the authority to establish a capital reserve fund under authority of G.S. 159 and whose financial operations are regulated and examined by a State agency. The capital reserve fund shall be established consistent with auditing, budgeting and government accounting practices as prescribed in G.S. 159 and by the Local Government Commission. A copy of the capital reserve fund ordinance or resolution with a certified copy of the meeting minutes and a copy of documentation of initial and subsequent year's deposits shall be placed in the MSWLF's operating record.

(ii) Payments into the capital reserve fund shall be made annually by the unit of local government or public authority over the term of the initial permit or over the remaining life of the MSWLF unit, in the case of a capital reserve fund for closure or post-closure care, or over one-half of the estimated length of the corrective action program in the case of corrective action for known releases. This period is referred to as the pay-in period. The pay-in period shall not extend beyond December 31, 1997 for an existing MSWLF unit not designed and constructed with a base liner system approved by the Division.

(iii) For a capital reserve 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 Subpart (ii) of this Part. 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 capital reserve fund, and Y is the number of years remaining in the pay-in period.

(iv) For a capital reserve fund used to demonstrate financial assurance for corrective action, the first payment into the capital reserve fund shall be at least equal to one-half of the current cost estimate for corrective action. 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 corrective action (updated for inflation or other changes), CV is the current value of the capital reserve fund, and Y is the number of years remaining in the pay-in period.

(v) The initial payment into the capital reserve fund shall be made before the initial receipt of waste or before the effective date of this Rule (April 9, 1994), whichever is later, 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 Rule .1636 of this Section. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment.

(vi) If the unit of local government or public authority establishes a capital reserve fund after having used one or more alternate mechanisms specified in this Paragraph, the initial payment into the capital reserve fund shall be at least the amount that the fund
would contain if the capital reserve fund were established initially and annual payments made according to the specifications of this Part.

(vii) The unit of local government or public authority authorized to conduct closure, post-closure care or corrective action activities may expend capital reserve funds to cover the remaining costs of closure, post-closure care, corrective action activities or for the debt service payments on financing arrangements for closure, post-closure care or corrective action activities. Monies in the capital reserve fund can only be used for these purposes unless the fund is terminated in accordance with Paragraph (e)(1)(I)(viii) of this Rule. The unit of local government or public authority shall document justifying expenditures and place a copy in the operating record.

(viii) The capital reserve fund may be terminated by the unit of local government or public authority only if it substitutes alternate financial assurance as specified in this Rule or if no longer required to demonstrate financial responsibility in accordance with the requirements of Paragraph (b)(2), (c)(2) or (d)(2) of this Rule.

(J) Use of Multiple Financial Mechanisms. An owner or operator may satisfy the requirements of this Paragraph by establishing more than one financial mechanism per facility. The mechanisms shall be as specified in Parts (A), (B), (C), (D), (E), (F), (G), (H) and (I) of this Paragraph, except that it is the combination of mechanisms, rather than the single mechanism, which shall provide financial assurance for an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever is applicable. The financial test and a guarantee provided by a corporate parent, sibling, or grandparent may not be combined if the financial statements of the two firms are consolidated. Mechanisms guaranteeing performance, rather than payment, may not be combined with other instruments.

(K) The wording of the instruments shall be identical to the wording specified in Paragraph (e)(2) of this Rule.

(2) Wording of Instruments.

(A) Trust Agreement.

(i) A trust agreement for a trust fund, as specified in Paragraph (e)(1)(A) of this Rule, shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of _______________" or "a national bank"], the "Trustee."

Whereas, the Division of Solid Waste Management, the "Division," an agency of the State of North Carolina, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a solid waste management facility shall provide assurance that funds shall be available when needed for closure, post-closure care, or corrective action of the facility,

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on Schedule A [on Schedule A, for each facility list the Solid Waste Section Permit Number, name, address, and the current closure, post-closure, or corrective action cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of the Division. The Grantor and the Trustee intend that no third party have access to the Fund except as herein
The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be required or held, unless they are securities or other obligations of the Federal or State of, to be an agency of the Federal or State government; and in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; (d) To deposit any cash in the Fund in interest.

The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and (c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

Section 4. Payment for Closure, Post-Closure Care, and Corrective Action. The Trustee shall make payments from the Fund as the Division of Solid Waste Management (the “Division”) shall direct, in writing, to provide for the payment of the costs of closure, post-closure care, or corrective action of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the Division from the Fund for closure, post-closure, and corrective action expenditures in such amounts as the Division shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Division specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and
Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Division a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Division shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor, the Division, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Division to the Trustee shall be in writing, signed by the Division, or his designee, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or Division hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor or Division, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the Division by certified mail within 10 days following expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Division if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Division, or by the Trustee and the Division, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Division issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of North Carolina.
Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in Paragraph (e)(2)(A)(i) of 15A NCAC 13B .1628 as were constituted on the date first above written.

[Signature of Grantor]  
[Title]  
Attest:  
[Title]  
[Seal]  

[Signature of Trustee]  
Attest:  
[Title]  
[Seal]  

(ii) The following is an example of the certification of acknowledgment which shall accompany the trust agreement for a trust fund.

State of  
County of  

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]  

(B) A surety bond guaranteeing payment into a trust fund, as specified in Paragraph (e)(1)(B) of this Rule, shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

FINANCIAL GUARANTEE BOND

Date bond executed:  
Effective date:  
Principal: [legal name and business address of owner or operator]  
Type of organization: [insert "individual", "joint venture", "partnership", or "corporation"]  
State of incorporation:  
Surety(ies): [name(s) and business address(es)]  
Solid Waste Section Permit Number, name, address, and closure or post-closure amount(s) for each facility guaranteed by this bond [indicate closure and post-closure amounts separately]:  
Total penal sum of bond: $  
Surety's bond number:  

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the North Carolina Division of Solid Waste Management (hereinafter called the Division), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided
that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas, said Principal is required, under the Solid Waste Management Rule .0201 as amended, to have a permit in order to own or operate each solid waste management facility identified above, and

Whereas, said Principal is required to provide financial assurance for closure or post-closure care, as a condition of the permit, and

Whereas, said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure and post-closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility,

Or, if the Principal shall fund the standby trust fund in such amount(s) within 15 days after a final order to begin closure and post-closure is issued by the Division or a U.S. district court or other court of competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance and obtain the Division's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Division from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Division that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Division.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Division, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Division, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Division.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Division.

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Paragraph (e)(2)(B) of 15A NCAC 13B .1628 as were constituted on the date this bond was executed.

Principal

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)

[Name and address]
A surety bond guaranteeing performance of closure, post-closure care, or corrective action, as specified in Paragraph (e)(1)(B) of this Rule, shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed:
Effective date:
Principal: [legal name and business address of owner or operator]
Type of organization: [insert "individual", "joint venture", "partnership", or "corporation"]
State of incorporation:
Surety(ies): [name(s) and business address(es)]
Solid Waste Section Permit Number, name, address, and closure, post-closure, or corrective action amount(s) for each facility guaranteed by this bond [indicate closure, post-closure, and corrective action amounts separately]:
Total penal sum of bond: $
Surety's bond number:

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the North Carolina Division of Solid Waste Management (hereinafter called the Division), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas, said Principal is required, under the Solid Waste Management Rule .0201 as amended, to have a permit in order to own or operate each solid waste management facility identified above, and
Whereas, said Principal is required to provide financial assurance for closure, post-closure care, or corrective action as a condition of the permit, and
Whereas, said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;
Now, Therefore, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit, as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, as such laws, statutes, rules, and regulations may be amended,
And, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and other requirements of the permit, as such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations as such laws, statutes, rules, and regulations may be amended,
And, if the Principal shall faithfully perform corrective action of each facility for which this bond guarantees corrective action, in accordance with the corrective action program and other requirements of the permit, as such program and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations as such laws, statutes, rules, and regulations may be amended,
Or, if the Principal shall provide alternate financial assurance and obtain the Division's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the Division from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Division that the Principal has been found in violation of the closure requirements for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amount guaranteed for the facility into the standby trust fund as directed by the Division.

Upon notification by the Division that the Principal has been found in violation of the post-closure requirements for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Division.

Upon notification by the Division that the Principal has been found in violation of the post-closure requirements for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Division.

Upon notification by the Division that the Principal has been found in violation of the post-closure requirements for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Division.

The Surety(ies) hereby waive(s) notification of amendments to closure and post-closure plans, and corrective action programs, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Division, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the Division, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Division.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure, post-closure, or corrective action amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Division.

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Paragraph (e)(2)(C) of 15A NCAC 13B .1628 as was constituted on the date this bond was executed.

Principal

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)
IRREVOCABLE STANDBY LETTER OF CREDIT

North Carolina Department of Environment, Health, and Natural Resources
Solid Waste Management Division
Solid Waste Section
P.O. Box 27687
Raleigh, North Carolina 27611-7687

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No._____ in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $_______, available upon presentation of

(1) your sight draft, bearing reference to this letter of credit No._______, and
(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to requirements of 15A NCAC 13B .1628 as amended."

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and [owner's or operator's name], as shown on the signed return receipts. Whenever this letter of credit is drawn on, under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Paragraph (e)(2)(D) of 15A NCAC 13B .1628 as were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution], [Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code"].

CERTIFICATE OF INSURANCE FOR CLOSURE OR POST-CLOSURE CARE

Name and Address of Insurer
(herein called the "Insurer") :

Name and Address of Insured
(herein called the "Insured") :
Facilities Covered: [List for each facility: The Solid Waste Section Permit Number, name, address, and the amount of insurance for closure or the amount for post-closure care (these amounts for all facilities covered shall total the face amount shown below).]

Face Amount:
Policy Number:
Effective Date:

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for [insert "closure" or "closure and post-closure care" or "post-closure care"] for the facilities identified above.

The Insurer further warrants that such policy conforms in all respects with the requirements of Paragraph (e)(1) of 15A NCAC 13B .1628, as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the North Carolina Division of Solid Waste Management (Division), the Insurer agrees to furnish to the Division a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in Paragraph (e)(2)(E) of 15A NCAC 13B .1628 as were constituted on the date shown immediately below.

[Authorized signature for Insurer]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

[Date]

(F) A capital reserve fund, as specified in Paragraph (e)(1)(I) of this Rule, shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**CAPITAL RESERVE FUND RESOLUTION**

**ESTABLISHMENT AND MAINTENANCE OF THE MUNICIPAL SOLID WASTE LANDFILL CAPITAL RESERVE FUND**

WHEREAS, there is a need in [location of landfill site, (e.g. City of Raleigh, County of Wake)] to provide funds for [closure, post-closure, or corrective action] for the [permit number], [name] landfill; and

WHEREAS, the [location] shall bear the cost of [closure, post-closure, or corrective action] for the landfill at an estimated cost of [cost estimate].

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD THAT:

Section 1. The Governing Board hereby creates a Capital Reserve Fund for the purpose of [closure, post-closure, or corrective action] for the [permit number] landfill.

Section 2. This Fund shall remain operational during the life of the landfill and the post-closure care period beginning [date] and ending [date] as estimated at the time of annual update of this Resolution.

Section 3. The Board shall appropriate or transfer an amount of no less than [annual payment] each year to this Fund.
Section 4. This Resolution shall become effective and binding upon its adoption.

[Signature of County Commissioner]

[Signature of Chief Financial Officer]

[Date]

(G) A local government financial test, as specified in Part (e)(1)(F) of this Rule, shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

[Address to the Department of Environment, Health, and Natural Resources, Solid Waste Section, Post Office Box 27687, Raleigh, North Carolina 27611-7687.]

I am the chief financial officer of [name and address of unit of local government]. This letter is in support of this unit of local government’s use of the financial test to demonstrate financial assurance, as specified in 15A NCAC 13B .1628(e)(1)(F).

[Fill out the following paragraph regarding the municipal solid waste facilities and associated cost estimates. For each facility, include its permit number, name, address and current closure, post-closure, or corrective action cost estimates. Identify each cost estimate as to whether it is for closure, post-closure care, or corrective action.]

This unit of local government is the owner or operator of the following facilities for which financial assurance for closure, post-closure, or corrective action is demonstrated through the financial test specified in 15A NCAC 13B .1628(e)(1)(F). The current closure, post-closure, or corrective action cost estimates covered by the test are shown for each facility:

_______________________________________________________.

The fiscal year of this unit of local government ends on [month, day, year]. The figures for the following items marked with an asterisk are derived from this unit of local government’s Annual Financial Information Report (AFIR) for the latest completed fiscal year, ended [date].

[Fill in the Ratio Indicators of Financial Strength section if the criteria of 15A NCAC 13B .1628(e)(1)(F)(i)(I) are used. Fill in Bond Rating Indicator of Financial Strength section if the criteria of 15A NCAC 13B .1628(e)(1)(F)(ii)(II) are used.]

RATIO INDICATORS OF FINANCIAL STRENGTH

1. Sum of current closure, post-closure and corrective action cost estimates [total of all cost estimates shown in the paragraphs above] $...........

*2. Sum of cash and investments (AFIR Part 7) $...........

*3. Total expenditures (AFIR Part 4 Columns a & b and Part 5 for municipalities or Part 5 excluding educational capital outlays for counties) $...........

*4. Annual debt service (AFIR Part 4 Section I) $...........

5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules:

MSWLF under 15A NCAC 13B .1600 $...........
Hazardous waste treatment, storage and disposal facilities under 15A NCAC 13A .0009 and .0010 $........

Petroleum underground storage tanks under 15A NCAC 2N .0100 - .0800 $........

Underground Injection Control System facilities under 15A NCAC 2D .0400 and 15A NCAC 2C .0200 $........

PCB commercial storage facilities under 15A NCAC 2O .0100 and 15A NCAC 2N .0100 $........

Total assured environmental costs $........

*6. Total Annual Revenue (AFIR Part 2) $........

Circle either "yes" or "no" to the following questions.

7. Is line 5 divided by line 6 less than or equal to 0.43? yes/no
8. Is line 2 divided by line 3 greater than or equal to 0.05? yes/no
9. Is line 4 divided by line 3 less than or equal to 0.20? yes/no

**BOND RATING INDICATOR OF FINANCIAL STRENGTH**

1. Sum of current closure, post-closure and corrective action cost estimates [total of all cost estimates shown in the paragraphs above] $........

2. Current bond rating of most recent issuance and name of rating service ...........

3. Date of issuance bond ...........

4. Date of maturity of bond ...........

5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules:

   MSWLF under 15A NCAC 13B .1600 $........

   Hazardous waste treatment, storage and disposal facilities under 15A NCAC 13A .0009 and .0010 $........

   Petroleum underground storage tanks under 15A NCAC 2N .0100 - .0800 $........

   Underground Injection Control System facilities under 15A NCAC 2D .0400 and 15A NCAC 2C .0200 $........

   PCB commercial storage facilities under 15A NCAC 2O .0100 and 15A NCAC 2N .0100 $........

   Total assured environmental costs $........
Circle either "yes" or "no" to the following question.

7. Is line 5 divided by line 6 less than or equal to 0.43? yes/no

I hereby certify that the wording of this letter is identical to the wording specified in 15A NCAC 13B .1628(e)(2)(G) as such rules were constituted on the date shown immediately below. I further certify the following: (1) that the unit of local government has not operated at a total operating fund deficit equal to five percent or more of total annual revenue in either of the past two fiscal years, (2) that the unit of local government is not in default on any outstanding general obligations bonds or long-term obligations, and (3) does not have any outstanding general obligation bonds rated lower than Baa as issued by Moody's, BBB as issued by Standard & Poor's, BBB as issued by Fitch's, or 75 as issued by the Municipal Council.

[Signature]

[Name]

[Title]

[Date]

History Note: Filed as a Temporary Rule Eff. November 9, 1993 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner; Authority G.S. 130A-294; Eff. April 9, 1994; Amended Eff. October 1, 1994.

15A NCAC 13B .1629 CLOSURE AND POST-CLOSURE PLAN

(a) Purpose. As required under Rule .1617 of this Section, the owner or operator shall submit a closure and post-closure plan which meets the requirements of this Rule.

(b) Closure plan contents.

(1) General content of the plan. The owner or operator shall prepare a written closure plan that describes the steps necessary to close all MSWLF units at any point during its active life in accordance with the cap system requirements in Paragraph (c) of this Rule, as applicable. The closure plan, at a minimum, must include the following information:

(A) A description of the cap system and the methods and procedures to be used to install the cap that conforms to the requirements set forth in Paragraph (c) of Rule .1627.

(B) An estimate of the largest area of the MSWLF unit ever requiring the specified cap system at any time during the active life that is consistent with the drawings prepared for:

(i) The operation plan, for an existing MSWLF unit; or

(ii) The engineering plan or facility plan, for a lateral expansion or new MSWLF unit.

(C) An estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and

(D) A schedule for completing all activities necessary to satisfy the closure criteria set forth in Paragraph (c) of Rule .1627.

(2) Existing MSWLF units. The owner or operator of an existing MSWLF unit not designed and constructed with a base liner system permitted by the Division shall provide the following information:
(A) Local characterization study. The local study area includes the landfill facility and a 2000-foot perimeter measured from the permitted facility boundary. A topography map shall be prepared at a scale of at least one inch equals 400 feet and shall:

(i) Provide current topographic information for the permitted facility;
(ii) Identify all waste supply intakes (ground and surface water);
(iii) Identify underground utility lines;
(iv) Identify private residences; and
(v) Identify any known or potential sources of contamination.

(B) Capacity. The proposed final capacity of the existing MSWLF unit must be calculated from October 9, 1993 and shall be consistent with the criteria set forth in Subparagraph (c)(10) of Rule .1627. The method, data, and assumptions used to calculate the remaining capacity shall be clearly stated.

(C) Compliance Report. The owner or operator shall submit a report that:

(i) Demonstrates compliance with Paragraphs (1), (2), and (6) of Rule .1622;
(ii) Contains a summary of the facility's compliance record for the past five years; and
(iii) Contains water quality and explosive gas monitoring data for the past five years.

(3) Financial Assurance. The owner or operator shall submit the cost estimate for closure required under Rule .1628 of this Section as a component of the plan.

(c) Post-closure plan contents. The owner or operator of all MSWLF units must 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 (d) of Rule .1627 for each MSWLF unit, and the frequency at which these activities shall 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 cap system, base liner system, or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this Section. The Division may approve any other disturbance if the owner or operator demonstrates that disturbance of the cap system, base liner system, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.

(4) Financial Assurance. The owner or operator shall submit the cost estimate for post-closure required under Rule .1628 of this Section as a component of the plan.

History Note: Authority 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1630 APPLICABILITY OF GROUND-WATER MONITORING REQUIREMENTS
(a) The ground-water monitoring, assessment, and corrective action requirements under Rules .1630 through .1637 of this Section apply to all MSWLF units.
(b) Owners or operators of MSWLF units shall comply with the ground-water monitoring, assessment, and corrective action requirements under Rules .1630 through .1637 of this Section according to the following schedule:

(1) New MSWLF units shall be in compliance with the requirements before waste can be placed in the unit.
(2) Lateral expansions to existing MSWLF units shall be in compliance with the requirements before waste can be placed in the expansion area.
(3) For existing MSWLF units, compliance with the requirements shall be demonstrated to the Division on or before October 9, 1994.
(c) Once established at a MSWLF unit, ground-water monitoring shall be conducted throughout the active life and post-closure care period of that MSWLF unit.
(d) Ground-water monitoring plans, assessment plans, and corrective action plans shall be prepared under the responsible charge of and bear the seal of a Licensed Geologist or Professional Engineer (in accordance with G.S. 89E and 89C, respectively).

(e) The North Carolina Groundwater Classifications and Standards (15A NCAC 2L) are incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina at no cost.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .1631 GROUND-WATER MONITORING SYSTEMS

(a) A ground-water monitoring system shall be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield ground-water samples from the uppermost aquifer that:

(1) Represent the quality of the background ground water that has not been affected by leakage from the unit. Normally, determination of background water quality will be based on sampling of a well or wells that are hydraulically upgradient of the waste management area. However, the determination of background water quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:
   (A) Hydrogeologic conditions do not allow the owner or operator to determine which wells are hydraulically upgradient; or
   (B) Hydrogeologic conditions do not allow the owner or operator to place a well in a hydraulically upgradient location; or
   (C) Sampling at other wells will provide an indication of background ground-water quality that is as representative as that provided by the upgradient well(s); and

(2) Represent the quality of ground water passing the relevant point of compliance as approved by the Division. The downgradient monitoring system shall be installed at the relevant point of compliance so as to ensure detection of ground-water contamination in the uppermost aquifer.
   (A) The relevant point of compliance shall be established no more than 250 feet from a waste boundary, and shall be at least 50 feet within the facility property boundary.
   (B) In determining the relevant point of compliance, the Division shall consider recommendations made by the owner or operator based upon consideration of at least the following factors:
      (i) The hydrogeologic characteristics of the facility and surrounding land;
      (ii) The volume and physical and chemical characteristics of the leachate;
      (iii) The quantity, quality, and direction, of flow of ground water;
      (iv) The proximity and withdrawal rate of the ground-water users;
      (v) The availability of alternative drinking water supplies;
      (vi) The existing quality of the ground water, including other sources of contamination and their cumulative impacts on the ground water, and whether the ground water is currently used or reasonably expected to be used for drinking water;
      (vii) Public health, safety, and welfare effects; and
      (viii) Practicable capability of the owner or operator.

(b) Monitoring wells shall be designed and constructed in accordance with the applicable North Carolina Well Construction Standards as codified in 15A NCAC 2C.

(1) Owner or operators shall obtain approval from the Division for the design, installation, development, and decommission of any monitoring well or piezometer. Documentation shall be placed in the operating record and provided to the Division in a timely manner.

(2) The monitoring wells and piezometers shall be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.

(c) The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information that shall include investigation of:
Aquifer thickness, ground-water flow rate, and ground-water flow direction, including seasonal and temporal fluctuations in ground-water flow; and

Unsaturated and saturated geologic units (including fill materials) overlying and comprising the uppermost aquifer; including but not limited to: thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

(d) The proposed monitoring plan shall be:

1. Certified by a Licensed Geologist or Professional Engineer to be effective in providing early detection of any release of hazardous constituents (from any point in a disposal cell or leachate surface impoundment) to the uppermost aquifer, so as to be protective of public health and the environment; and

2. Approved by the Division. Upon approval by the Division, a copy of the approved monitoring plan shall be placed in the operating record.

(e) The Division may require the use of alternative monitoring systems in addition to ground-water monitoring wells at sites:

1. Where the owner or operator does not control the property from any landfill unit to the ground-water discharge feature(s); or

2. Sites with hydrogeologic conditions favorable to detection monitoring by alternative methods.

(f) The owner or operator shall submit a monitoring system plan for approval by the Division as required by Rules .1603 and .1617 of this Section.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1632 GROUND-WATER SAMPLING AND ANALYSIS REQUIREMENTS

(a) A ground-water monitoring program shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of ground-water quality at the background and downgradient wells. The ground-water sampling and analysis plan shall be approved by the Division and the owner or operator shall place a copy of the approved plan in the operating record. The plan shall include procedures and techniques for:

1. Sample collection;
2. Sample preservation and shipment;
3. Analytical procedures;
4. Chain of custody control; and
5. Quality assurance and quality control.

(b) The ground-water monitoring program shall include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents and other monitoring parameters in ground-water samples.

(c) The sampling procedures and frequency shall be protective of human health and the environment.

(d) Ground-water elevations shall be measured in each well immediately prior to purging, each time ground-water is sampled. The owner or operator shall determine the rate and direction of ground-water flow each time ground-water is sampled. Ground-water elevations in wells which monitor the same waste management area shall be measured within a period of time short enough to avoid temporal variations in ground-water flow which could preclude accurate determination of ground-water flow rate and direction. The owner or operator shall determine ground-water elevation and flow as follows:

1. In order to accurately determine ground-water elevations for each monitoring well, the wells shall have been surveyed. If required by G.S. 89C, a professional land surveyor shall survey the wells. [Note: The North Carolina Board of Examiners for Engineers and Surveyors has determined, via a letter dated July 16, 2010, that the surveying pursuant to this Paragraph constitutes practicing surveying under G.S. 89C.] The survey of the wells shall conform to at least the following levels of accuracy:
   (A) The horizontal location to the nearest 0.1 foot;
   (B) The vertical control for the ground surface elevation to the nearest 0.01 foot; and
   (C) The vertical control for the measuring reference point on the top of the inner well casing to the nearest 0.01 foot.
(2) In order to determine the rate of ground-water flow, the owner or operator shall provide data for hydraulic conductivity and porosity for the formation materials at each of the well locations.

(e) The owner or operator shall establish Division-approved background ground-water quality in accordance with rules .1631(a)(1) and .1632(f) through (h) of this Section for each of the monitoring parameters or constituents required in the particular ground-water monitoring program that applies to the MSWLF unit.

(f) The number of samples collected to establish ground-water quality data shall be consistent with the appropriate statistical procedures to be used, as provided for in 40 CFR 258.

(g) Should the owner or operator choose to perform statistical analysis of groundwater quality data whether for purposes of establishing background concentrations or to determine if there is an exceedance of the groundwater protection standard as defined in Rule .1634(g) and .1634(h) of this Section, the owner or operator shall select one of the following statistical methods to be used in evaluating ground-water monitoring data for each hazardous constituent. The statistical test chosen shall be conducted separately for each hazardous constituent in each well.

(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) A parametric 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.

(5) Another statistical test method that meets the performance standards of this Rule. The owner or operator shall submit a justification for an alternative test method to the Division for approval. The justification shall demonstrate that the alternative statistical test method meets the performance standards of this Rule. If approved, the owner or operator shall place a copy of the justification for an alternative test method in the operating record.

(h) Any statistical method chosen to evaluate ground-water monitoring data shall comply with the following performance standards, as appropriate:

(1) The statistical method used to evaluate ground-water monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator (or the Division) to be inappropriate for a normal theory test, then the data shall be transformed or a distribution-free theory test shall be used. If the distributions for the constituents differ, more than one statistical method shall be considered.

(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 ground-water 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 prediction interval is used to evaluate ground-water monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval shall contain, 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.

(6) If necessary, as provided for in 40 CFR 258, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(i) Within 120 days from the date of sampling or as specified in the facility permit, whichever is less, the owner or operator shall submit to the Division a report that includes all information from the sampling event; including field observations relating to the condition of the monitoring wells, field data, laboratory data, statistical analysis (if utilized), sampling methodologies, quality assurance and quality control data, information on ground-water flow direction, calculations of ground-water flow rate, for each well any constituents that exceed ground-water standards, as defined in Rule .1634(g) through (h) of this Section.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993; Amended Eff. April 1, 2011.

15A NCAC 13B .1633 DETECTION MONITORING PROGRAM

(a) Detection monitoring is required at MSWLF units at all ground-water monitoring wells that are part of the detection monitoring system as established in the approved monitoring plan. At a minimum, as provided for in 40 CFR 258, the detection monitoring program shall include monitoring for the constituents listed in Appendix I of 40 CFR Part 258. "Appendix I Constituents for Detection Monitoring" (Appendix I), is incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment and Natural Resources, Division of Waste Management, Raleigh, North Carolina at no cost.

(b) The monitoring frequency for all Appendix I detection monitoring constituents shall be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) shall be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and downgradient) shall be collected and analyzed during subsequent semiannual sampling events.

(c) If the owner or operator determines that there is an exceedance of the ground-water protection standards, as defined in Paragraph (g) or (h) of Rule.1634 for one or more of the constituents listed in Appendix I of this Rule at any monitoring well at the relevant point of compliance, the owner or operator:

1. Shall, within 14 days of this finding, report to the Division and place a notice in the operating record indicating which constituents have exceeded ground-water protection standards;
2. Shall establish an assessment monitoring program meeting the requirements of this Section within 90 days except as provided for in Subparagraph (3) of this Paragraph; and
3. May demonstrate that a source other than a MSWLF unit caused the exceedance, or the exceedance resulted from an error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting this demonstration shall be approved by the Division. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010 respectively, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] A copy of this report shall also be placed in the operating record. If a successful demonstration is made, documented, and approved by the Division, the owner or operator may continue detection monitoring. If after 90 days, a successful demonstration is not made, the owner or operator shall initiate an assessment monitoring program as required by this Section.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993; Amended Eff. April 1, 2011.

15A NCAC 13B .1634 ASSESSMENT MONITORING PROGRAM
(a) Assessment monitoring is required whenever one or more of the constituents listed in Appendix I is detected in exceedance of the ground-water protection standards, as defined in Paragraph (g) or (h) of this Rule.

(b) Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator shall sample and analyze the ground water for all constituents identified in Appendix II of 40 CFR Part 258. 40 CFR Part 258 – "Appendix II List of Hazardous Inorganic and Organic Constituents" (Appendix II), is incorporated by reference including subsequent amendments and editions. Copies of this material may be inspected or obtained at the Department of Environment and Natural Resources, Division of Waste Management, Raleigh, North Carolina at no cost. 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 Appendix II analysis, a minimum of four independent samples from each well (background and downgradient) shall be collected and analyzed to establish background for the new constituents. The Division may specify, as provided for in 40 CFR 258, an appropriate subset of wells to be sampled and analyzed for Appendix II constituents during assessment monitoring. The Division may delete, as provided for in 40 CFR 258, any of the Appendix II monitoring parameters for a MSWLF unit if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit.

(c) The Division may specify an appropriate alternate frequency for repeated sampling and analysis for Appendix II constituents required by Paragraph (b) of this Rule, during the active life and post-closure care of the unit considering the following factors:
   
   (1) Lithology of the aquifer and unsaturated zone;
   (2) Hydraulic conductivity of the aquifer and unsaturated zone;
   (3) Ground-water flow rates;
   (4) Minimum distance of travel;
   (5) Resource value of the aquifer; and

(d) After obtaining the results from the initial or subsequent sampling events required in Paragraph (b) of this Rule, the owner or operator shall:
   
   (1) Within 14 days, submit a report to the Division and place a notice in the operating record identifying the Appendix II constituents that have been detected;
   (2) Within 90 days, and on at least a semianual basis thereafter, resample all wells of the approved detection monitoring system for the unit for all constituents listed in Appendix I and for those constituents in Appendix II that have been detected in response to Paragraph (b) of this Rule. A report from each sampling event shall be submitted to the Division and placed in the facility operating record. At least one sample from each well (background and downgradient) shall be collected and analyzed during each of these sampling events;
   (3) Establish and report to the Division background concentrations for any constituents detected pursuant to Paragraph (b) or (d)(2) of this Rule; and
   (4) Obtain a determination from the Division to establish ground-water protection standards for all constituents detected pursuant to Paragraph (b) or (d) of this Rule. The ground-water protection standards shall be established in accordance with Paragraph (g) or (h) of this Rule.

(e) If the concentrations of all Appendix II constituents are shown to be at or below the approved ground-water protection standards, for two consecutive sampling events, the owner or operator shall report this information to the Division, and the Division shall give approval to the owner or operator to return to detection monitoring.

(f) If one or more Appendix II constituents are detected above the approved ground-water protection standards in any sampling event, the owner or operator, shall within 14 days of this finding, submit a report to the Division, place a notice in the operating record, and notify local government officials. The owner or operator:
   
   (1) shall:
      (A) Characterize the nature and extent of the release 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 Paragraph (d)(2) of this Rule;
      (C) Notify all persons who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site; and
      (D) Within 90 days, initiate an assessment of corrective measures as required under Rule .1635 of this Section; or
   
   (2) may demonstrate that a source other than a MSWLF unit caused the exceedance of the ground-water protection standards, or the exceedance resulted from error in sampling, analysis, or natural variation
in ground-water quality. A report documenting this demonstration shall be approved by the Division. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010 respectively, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] A copy of the approved report shall also be placed in the operating record. If a successful demonstration is made, the owner or operator may discontinue assessment monitoring, and may return to detection monitoring when approval is given by the Division. Until a successful demonstration is made, the owner or operator shall comply with Paragraph (f)(1) of this Rule including initiating an assessment of corrective measures.

(g) The owner or operator shall obtain a determination from the Division on establishing a ground-water protection standard for each Appendix II constituent detected in the ground-water. The ground-water protection standard shall be the most protective of Subparagraphs (1) through (4) or Subparagraph (5):

1. For constituents for which a maximum contamination level (MCL) has been promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR Part 141, the MCL for that constituent;
2. For constituents for which a water quality standard has been established under the North Carolina Rules Governing Public Water Systems, 15A NCAC 18C, the water quality standard for that constituent;
3. For constituents for which a water quality standard has been established under the North Carolina Groundwater Classifications And Standards, 15A NCAC 02L .0202, the water quality standard for that constituent;
4. For constituents for which MCLs or water quality standards have not been promulgated, the background concentration for the constituent established from wells in accordance with Rule .1631(a)(1) and Rule .1632 of this Section; or
5. The owner or operator may request the Division approve a background level that is higher than the standard established in Subparagraphs (1) through (3) of this Paragraph or health based levels identified under Paragraph (h) of this Rule. The background level shall be established in accordance with Rule .1631(a)(1) and Rule .1632. The approved background level shall be the established ground-water protection standard.

(h) The Division may establish an alternative ground-water protection standard for constituents for which neither an MCL or water quality standard has not been established. These ground-water protection standards shall be health based levels that satisfy the following criteria:

1. The level is derived in a manner consistent with E.P.A. guidelines for assessing the health risks of environmental pollutants;
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 standards;
3. For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) of $1 \times 10^{-6}$ 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 the purposes of this Rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

(i) In establishing ground-water protection standards under Paragraph (h) of this Rule the Division shall consider the following:

1. Multiple contaminants in the ground water;
2. Exposure threats to sensitive environmental receptors; and
3. Other site-specific exposure or potential exposure to ground-water.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993; Amended Eff. April 1, 2011.

15A NCAC 13B .1635 ASSESSMENT OF CORRECTIVE MEASURES
(a) Within 90 days of finding that any of the constituents listed in Appendix II exceeded the ground-water protection standards, the owner or operator shall initiate assessment of corrective action measures. Such an assessment must be completed within 120 days.
(b) The owner or operator shall continue to monitor in accordance with the approved assessment monitoring program.
(c) The assessment of corrective measures shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under Rule .1636 of this Section, addressing at least the following, as provided for in 40 CFR 258:
   (1) The performance, reliability, ease of implementation, and potential impacts of 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 State and Local permit requirements or other environmental or public health requirements that may affect implementation of the remedy(s).
(d) The owner or operator shall discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties. The owner or operator shall provide a public notice of the meeting at least 30 days prior to the meeting. The notice shall include the time, place, date, and purpose of the meeting required by this Paragraph. A copy of the public notice shall be forwarded to the Division at least five days prior to publication. The owner or operator shall mail a copy of the public notice to those persons requesting notification. Public notice shall include:
   (1) a legal advertisement placed in a newspaper or newspapers serving the county; and
   (2) provision of a news release to at least one newspaper, one radio station, and one television station serving the county.

History Note:  Authority G.S. 130A-294;
    Eff. October 9, 1993;
    Amended Eff. May 1, 2011.

15A NCAC 13B .1636  SELECTION OF REMEDY
(a) Based on the results of the corrective measures assessment, the owner or operator shall select a remedy that, at a minimum, meets the standards listed in Rule .1636(b). Within 14 days of selecting a remedy, the permittee shall submit an application to modify the permit describing the selected remedy to the Division for evaluation and approval. The application shall be subject to the processing requirements set forth in Rule .1604 (c) of this Section. The application shall include the demonstrations necessary to comply with the financial assurance requirements set forth in Paragraph (d) of Rule .1628.
(b) Remedies shall:
   (1) Be protective of human health and the environment;
   (2) Attain the approved ground-water protection standards;
   (3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II 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 Rule .1637(d); and
(c) In selecting a remedy that meets the standards of Rule .1636(b), the owner or operator shall consider the following evaluation factors:
   (1) The long-term 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 wastes 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 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.

4. Practicable capability of the owner or operator, including a consideration of the technical and economic capability.

5. The degree to which community concerns are addressed by a potential remedy.

(d) The owner or operator shall specify as part of the selected remedy a schedule for initiating and completing remedial activities. This schedule shall be approved by the Division. Such a schedule shall require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in this Rule. The owner or operator 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 the approved ground-water protection standards 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 currently 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) Ground water quantity and quality;

(D) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to contaminants;

(E) The hydrogeologic characteristics of the facility and surrounding land;

(F) Ground water removal and treatment costs; and

(G) The costs and availability of alternative water supplies.

7. Practicable capability of the owner or operator; and

8. Other relevant factors.

(e) The Division may determine that active remediation of a release of an Appendix II constituent from a MSWLF unit is not necessary if the owner or operator demonstrates to the satisfaction of the Division that:

1. The ground water is additionally contaminated by substances that have originated from a source other than a MSWLF unit and those substances are present in concentrations such that active
cleanup of the release from the MSWLF unit would provide no significant reduction in risk to actual or potential receptors; or

(2) The constituent or constituents are present in ground water that:
   (A) Is not currently or reasonably expected to be a source of drinking water; and
   (B) Is not hydraulically connected with water to which the hazardous constituents are migrating or are likely to migrate in concentrations that would exceed the approved ground-water protection standards; or

(3) Remediation of the releases is technically impracticable; or

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

(f) A determination by the Division pursuant to Rule. 1636(e) shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the ground water, to prevent exposure to the ground water, or to remediate ground water to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

15A NCAC 13B .1637 IMPLEMENTATION OF THE CORRECTIVE ACTION PROGRAM

(a) Based on the approved schedule for initiation and completion of remedial activities, the owner or operator shall:

   (1) Establish and implement a corrective action ground-water monitoring program that:
       (A) At a minimum, as provided for in 40 CFR 258, meets the requirements of an assessment monitoring program under Rule .1634 of this Section;
       (B) Indicates the effectiveness of the corrective action remedy; and
       (C) Demonstrates compliance with ground-water protection standards pursuant to Paragraph (e) of this Rule.

   (2) Implement the approved corrective action remedy; and

   (3) Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures shall, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required. The following factors shall be considered by an owner or operator 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 ground water 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 or the environment.

(b) The owner or operator or the Division may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of Rule .1636(b) of this Section are not being achieved through the remedy selected. In such cases, the owner or operator shall implement other methods or techniques, as approved by the Division, that could practically achieve compliance with the requirements, unless the owner or operator makes the determination under Paragraph (c) of this Rule.

(c) If the owner or operator or the Division determines that compliance with requirements under Rule .1636(b) of this Section cannot be practically achieved with any currently available methods, the owner or operator shall:

   (1) Submit a written report that documents that compliance with the requirements under Rule .1636(b) of this Section cannot be practically achieved with any currently available methods and gain approval from the Division. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and
November 30, 2010, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.]

(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;
   (B) Consistent with the overall objective of the remedy; and

(4) Submit a report justifying the alternative measures to the Division for approval prior to implementing the alternative measures. Upon approval by the Division, this report shall be placed in the operating record.

(d) All solid wastes that are managed pursuant to a remedy required under Rule .1636 of this Section, or an interim measure required under Paragraph (a) of this Rule, shall be managed in a manner:
   (1) That is protective of human health and the environment; and
   (2) That complies with applicable RCRA requirements.

(e) Remedies selected pursuant to Rule .1636 of this Section are considered complete when:
   (1) The owner or operator complies with the approved ground-water protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance;
   (2) Compliance with the approved ground-water protection standards has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded these standards for a period of three consecutive years; and
   (3) All actions required to complete the remedy have been satisfied.

(f) Upon completion of the remedy, the owner or operator shall submit a report to the Division documenting that the remedy has been completed in compliance with Paragraph (e) of this Rule. This report shall be signed by the owner or operator and by the preparer of the report. If required by G.S. 89C or G.S. 89E, a professional engineer or licensed geologist shall prepare these documents. [Note: The North Carolina Board of Examiners for Engineers and Surveyors and the Board of Licensing of Geologist has determined, via letters dated July 16, 2010 and November 30, 2010, that preparation of documents pursuant to this Paragraph constitutes practicing engineering or geology under G.S. 89C and G.S. 89E.] Upon approval by the Division, this report shall be placed in the operating record.

(g) When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph (e) of this Rule, the owner or operator shall be released from the requirements for financial assurance for corrective action under Rule .1628(d) of this Section.

History Note:  Authority G.S. 130A-294;
Eff. October 9, 1993;
Amended Eff. April 1, 2011.
15A NCAC 13B .1647  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1648  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1649  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1650  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1651  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1652  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1653  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1654  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1655  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1656  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1657  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1658  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1659  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1660  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1661  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1662  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1663  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1664  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1665  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1666  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1667  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1668  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1669  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1670  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1671  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1672  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1673  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1674  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1675  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1676  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1677  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1678  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1679  RESERVED FOR FUTURE CODIFICATION
15A NCAC 13B .1680  LEACHATE STORAGE REQUIREMENTS

(a) Applicability.

(1) Construction of leachate storage tanks and surface impoundments located at solid waste landfill facilities after October 9, 1993 shall meet the requirements set forth in this Rule.

(2) Liquid treatment and disposal at a solid waste landfill facility is subject to the requirements of this Subchapter.

(3) Operation and closure of all leachate storage tanks and surface impoundments shall meet the requirements of this Rule.

(b) Application requirements. An application for a permit to construct a landfill facility which includes leachate storage facilities shall contain the following:

(1) A description of the liquid to be stored;

(2) The estimated volume of liquid generated and a proposed recordkeeping system to record actual quantities stored;

(3) A schedule for liquid removal;

(4) A description of the final treatment and disposal of the liquid stored;

(5) A description of the liquid storage facility design;

(6) A contingency plan for managing unexpected surges in liquid quantities; and

(7) A closure plan prepared in accordance with Paragraph (f) of this Rule.

(c) Aboveground or onground tank requirements.

(1) Tanks may be constructed of concrete, steel, or other material approved by the Division. Tanks shall be supported on a well drained stable foundation which prevents movement, rolling, or settling of the tank.

(A) The exterior surfaces of all aboveground and onground steel storage tanks shall be protected by a primer coat, a bond coat and two or more final coats of paint or have at least an equivalent surface coating system designed to prevent corrosion and deterioration.

(B) The interior of all aboveground and onground tanks shall consist of a material, or shall be lined with a material, resistant to the liquid being stored.

(2) All aboveground and onground tanks shall have a secondary containment system which may consist of dikes, liners, pads, ponds, impoundments, curbs, ditches, sumps, or other systems capable of containing the liquid stored.

(A) The design volume for the secondary containment system shall be 110 percent of the volume of either the largest tank within the containment system or the total volume of all interconnected tanks, whichever is greater.

(B) The secondary containment system shall be constructed of a material compatible with the liquid being stored.

(3) A system shall be designed to contain and remove storm water from the secondary containment area. Provisions shall be included for the removal of any accumulated precipitation and be initiated within 24 hours or when 10 percent of the storage capacity is reached, whichever occurs first. Disposal shall be in compliance with all applicable federal and State regulations.

(4) All aboveground and onground tanks shall be equipped with an overfill prevention system which may include, but not be limited to: level sensors and gauges, high level alarms or automatic
shutoff controls. The overfill control equipment shall be inspected weekly by the facility operator to ensure it is in good working order.

(5) The operator of the facility shall inspect the exterior of all tanks for leaks, corrosion, and maintenance deficiencies weekly. Interior inspection of tanks shall be performed according to the Division approved plan. If the inspection reveals a tank or equipment deficiency which could result in failure of the tank to contain the liquid, remedial measures shall be taken immediately to eliminate the leak or correct the deficiency. Inspection reports shall be maintained and made available to the Division upon request for the lifetime of the liquid storage system.

(6) All uncovered tanks shall have a minimum two feet of freeboard. Odor and vector control shall be practiced when necessary.

d) Underground tank requirements.

(1) Underground tanks shall be placed a minimum of two feet above the seasonal high ground-water table and a minimum of two feet vertical separation shall be maintained between bedrock and the lowest point of the tank.

(2) Tanks may be constructed of fiberglass reinforced plastic, steel that is cathodically protected, steel that is clad with fiberglass, or any other materials approved by the Division.

(3) The secondary containment and continuous leak detection system shall be installed in the form of a double-walled tank, designed as an integral structure so that any release from the inner tank is completely contained by the outer shell.

(A) The leak detection system shall be monitored at least weekly using methods specified by the operator and approved by the Division.

(B) Any tank system vulnerable to corrosion shall be protected from both corrosion of the primary tank interior and the external surface of the outer shell.

(i) All resistant coatings applied to the primary tank interior shall be chemically compatible with the liquid to be stored.

(ii) Cathodic protection systems, where installed, shall be inspected at least weekly by the facility operator and any deficiencies shall be corrected when discovered.

(4) All underground tanks shall be equipped with an overfill prevention system which may include, but not be limited to: level sensors and gauges, high level alarms or automatic shutoff controls. The overfill control equipment shall be inspected weekly by the facility operator to ensure it is in good working order.

(5) Inspection and leak detection monitoring reports shall be maintained and made available upon request for the lifetime of the liquid storage system.

e) Surface impoundment requirements.

(1) Any surface impoundment shall be constructed so that the bottom elevation of liquid is a minimum of four feet above the seasonal high ground-water table and bedrock.

(2) At a minimum, surface impoundments shall be designed and constructed with a liner system equivalent to the liner system for the landfill unit generating the liquid.

(A) A surface impoundment designed and constructed to store leachate from a new MSWLF unit shall include a composite liner which conforms to the requirements of Rule .1624; or

(B) An alternative liner system which is designed and constructed to achieve at least an equivalent containment efficiency. An equivalence demonstration shall be included in the permit application and shall be approved by the Division.

(3) Construction of the liner system components shall be consistent with the pertinent requirements set forth in Rule .1624(b)(8) and (9); and a construction quality assurance report shall be prepared by the project engineer.

(4) The top liner shall be protected from degradation and damage.

(5) A minimum of two feet of freeboard shall be maintained in the surface impoundment. Odor and vector control shall be practiced when necessary.
A ground-water monitoring system shall be installed and sampled in a manner consistent with the ground-water monitoring requirements for MSWLF units as set forth in Rules .1631 through .1637, of this Section, or using an alternative monitoring system approved by the Division.

An operation plan shall be prepared and followed for operation of the surface impoundment.

(f) Closure of leachate storage facilities.

(1) The owner or operator of the liquid storage facility shall prepare a written closure plan for the liquid storage facility and submit the plan with the permit application for the solid waste management facility.

(2) The owner or operator shall complete closure activities in accordance with the approved closure plan and within 180 days after liquid collection has ceased.

(3) At closure, all solid waste shall be removed from the tank or surface impoundment, connecting lines, and any associated secondary containment systems. All solid waste removed shall be properly handled and disposed of according to federal and State requirements. All connecting lines shall be disconnected and securely capped or plugged.

(A) Underground tanks shall be removed or thoroughly cleaned to remove traces of waste and all accumulated sediments and then filled to capacity with a solid inert material, such as clean sand or concrete slurry. If ground water surrounding the tank is found to be contaminated, the tank and surrounding contaminated soil shall be removed and appropriately disposed. Other corrective actions to remediate the contaminant plume may be required by the Department.

(B) Accessways to aboveground and onground tanks shall be securely fastened in place to prevent unauthorized access. Tanks shall either be stenciled with the date of permanent closure or removed. The secondary containment system shall be perforated to provide for drainage.

(C) For surface impoundments, all waste residues, contaminated system components (liners, etc.), contaminated subsoils, structures and equipment contaminated with waste shall be removed and appropriately disposed. If the ground water surrounding the impoundment is contaminated, other corrective actions to remediate a contaminant plume may be required by the Department. If the ground water surrounding the impoundment is found not to be contaminated, the liner system may remain in place if drained, cleaned to remove all traces of waste, and both liners punctured so that drainage is allowed. The impoundment is to be backfilled and regraded to the surrounding topography.

History Note: Authority G.S. 130A-294; Eff. October 9, 1993.

SECTION .1700 - REQUIREMENTS FOR BENEFICIAL USE OF COAL COMBUSTION BY-PRODUCTS

15A NCAC 13B .1701 DEFINITIONS
The following definitions shall apply throughout this Section:

(1) "Beneficial and beneficial use" means projects promoting public health and environmental protection, offering equivalent success relative to other alternatives, and preserving natural resources.

(2) "Coal combustion by-products" means residuals, including fly ash, bottom ash, boiler slag and flue gas desulfurization residue produced by coal fired electrical or steam generation units.

(3) "Jurisdictional wetland" means those areas that meet the criteria established by the United States Environmental Protection Agency for delineating wetlands and are considered by the Division to be waters of the United States.

(4) "Structural fill" means an engineered fill with a projected beneficial end use constructed using coal combustion by-products properly placed and compacted.
(5) "Use or reuse of coal combustion by-products" means the procedure whereby coal combustion by-products are directly used as follows:
(a) As an ingredient in an industrial process to make a product, unless distinct components of the coal combustion by-products are recovered as separate end products; or
(b) In a function or application as an effective substitute for a commercial product or natural resource.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .1702 GENERAL PROVISIONS FOR STRUCTURAL FILL FACILITIES
The provisions of this Section shall apply to the siting, design, construction, operation, closure and recordation of projects which utilize coal combustion by-products as structural fill material or as specified in Item (4) of Rule .1708 of this Section and shall apply to structural fills other than those which received written approval from the Division prior to the effective date of this Section. A solid waste management permit is not required for coal combustion by-products structural fills which meet the requirements listed in this Section.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .1703 NOTIFICATION FOR STRUCTURAL FILL FACILITIES
(a) A minimum of 30 days before using coal combustion by-products in structural fill projects, the person proposing the use shall submit a written notice to the Division. The notice shall contain, at a minimum:
(1) A description of the nature, purpose and location of the project, including the name of the United States Geological Survey seven and one-half minute map on which the project is located and a Department of Transportation map or an eight and one-half by 11 inch topographic map showing the project.
(2) The estimated start and completion dates for the project.
(3) An estimate of the volume of coal combustion by-products to be used for the project.
(4) A Toxicity Characteristic Leaching Procedure (TCLP) analysis from a representative sample of each different coal combustion by-product source to be used in the project. The TCLP analysis shall be conducted and certified by the generator to be representative of each coal combustion by-product source used in the project. A TCLP analysis shall be conducted at least annually. A minimum analysis shall include: arsenic, barium, cadmium, lead, chromium, mercury, selenium and silver.
(5) A signed and dated statement by the owner(s) of the land on which the structural fill is to be placed, acknowledging and consenting to the use of coal combustion by-products as structural fill and agreeing to record the fill in accordance with Rule .1707 of this Section.
(6) The notification shall include:
(A) Name of coal combustion by-products generator;
(B) Physical location of the generating facility;
(C) Address of generator;
(D) Name of contact for generator;
(E) Telephone number of generator; and
(F) Changes that occur will require subsequent notification of the Division of Solid Waste Management.

(b) In addition to the notification requirements under Paragraph (a) of this Rule, at least 30 days before using coal combustion by-products as a structural fill in projects with a volume of more than 10,000 cubic yards, the person proposing the use shall submit a written notice to the Division containing construction plans for the structural fill facility, including a stability analysis when necessary, which shall be prepared, signed and sealed by a registered professional engineer in accordance with sound engineering practices. The Department of Transportation is not required to submit construction plans with the written notice. The Department of Transportation shall maintain a complete set of construction plans and shall notify the Division where the construction plans are located.

History Note: Authority G.S. 130A-294;
15A NCAC 13B .1704 SITING FOR STRUCTURAL FILL FACILITIES

(a) Coal combustion by-products used as a structural fill shall not be placed:

1. Within 50 horizontal feet of a jurisdictional wetland unless after consideration of the chemical and physical impact on the wetland, the U.S. Corps of Engineers issues a permit or waiver for the fill;
2. Within 50 horizontal feet of the top of the bank of a perennial stream or other surface water body;
3. Within two feet of the seasonal high ground-water table;
4. Within 100 horizontal feet of any source of drinking water, such as a well, spring or other groundwater source of drinking water;
5. Within an area subject to a one-hundred year flood, unless it can be demonstrated to the Division that the facility will be protected from inundation, and washout, and the flow of water is not restricted and the storage volume of the flood plain will not be significantly reduced;
6. Within 25 feet of any property boundary; and
7. Within 25 feet of a bedrock outcrop.

(b) The Division and the Department of Transportation may agree on specific structural fill siting criteria that may be used on Department of Transportation projects.

History Note: Authority G.S. 130A-294;

15A NCAC 13B .1705 DESIGN, CONSTRUCTION, AND OPERATION FOR STRUCTURAL FILL FACILITIES

(a) The structural fill facility must be designed, constructed, operated, closed, and maintained in such a manner as to minimize the potential for harmful release of constituents of coal combustion by-products to the environment or create a nuisance to the public.

(b) Coal combustion by-products shall be collected and transported in a manner that will prevent nuisances and hazards to public health and safety. Coal combustion by-products shall be moisture conditioned, as necessary, and transported in covered trucks to prevent dusting.

(c) Coal combustion by-products shall be placed uniformly and compacted in lifts not exceeding one foot in thickness and shall be compacted to standards, including in-situ density, compaction effort and relative density, specified by a registered professional engineer for a specific end use purpose.

(d) Equipment shall be provided which is capable of placing and compacting the coal combustion by-products and handling the earthwork required during the periods that coal combustion by-products are received at the fill area.

(e) The coal combustion by-product structural fill facility shall be effectively maintained and operated as a non-discharge system to prevent discharge to surface water resulting from the operation of the facility.

(f) The coal combustion by-product structural fill facility shall be effectively maintained and operated to ensure no violations of ground water standards, 15A NCAC 2L.

(g) Surface waters resulting from precipitation shall be diverted away from the active coal combustion by-product placement area during filling and construction activity.

(h) Site development shall comply with the North Carolina Sedimentation Pollution Control Act of 1973, as amended.

(i) The structural fill project must be operated with sufficient dust control measures to minimize airborne emissions and to prevent dust from creating a nuisance or safety hazard and must not violate applicable air quality regulations.

(j) All structural fills shall be covered with a minimum of 12 inches compacted earth, and an additional surface six inches of soil capable of supporting native plant growth.

(k) Compliance with these standards does not insulate any of the owners or operators from claims for damages to surface waters, ground-water or air resulting from the operation of the structural fill facility. If the facility fails to comply with the requirements of this Section, the constructor, generator, owner or operator shall notify the Division and shall take such immediate corrective action as may be required by the Department.

(l) Coal combustion by-products utilized on an exterior slope of a structural fill shall not be placed with a slope greater than 3.0 horizontal to 1.0 vertical.

(m) The Division and the Department of Transportation may agree on specific design, construction, and operation criteria that may apply to the Department of Transportation projects.

History Note: Authority G.S. 130A-294;
15A NCAC 13B .1706 CLOSURE OF STRUCTURAL FILL FACILITIES
(a) No later than 30 working days or 60 calendar days, whichever is less after coal combustion by-product placement has ceased, the final cover shall be applied over the coal combustion by-product placement area.
(b) The final surface of the structural fill shall be graded and provided with drainage systems that:
   (1) Minimize erosion of cover materials; and
   (2) Promote drainage of area precipitation, minimize infiltration and prevent ponding of surface water on the structural fill.
(c) Other erosion control measures, such as temporary mulching, seeding, or silt barriers shall be installed to ensure no visible coal combustion by-product migration to adjacent properties until the beneficial end use of the project is realized.
(d) The constructor or operator shall submit a certification to the Division signed and sealed by a registered professional engineer or signed by the Secretary of the Department of Transportation or his designee certifying that all requirements in the Rules of this Section have been met. The report shall be submitted within 30 days of application of the final cover.
(e) The Division and the Department of Transportation shall agree on specific closure criteria that apply to Department of Transportation projects.


15A NCAC 13B .1707 RECORDATION OF STRUCTURAL FILL FACILITIES
(a) The owners of land where coal combustion by-products have been utilized in volumes of more than 1,000 cubic yards shall file a statement of the volume and locations of the coal combustion by-products with the Register of Deeds in the county or counties where the property is located. The statement shall identify the parcel of land according to the complete legal description on the recorded deed, either by metes and bounds, or by reference to a recorded plat map. The statement shall be signed and acknowledged by the landowners(s) in the form prescribed by G.S. 47-38 through 47-43.
(b) Recordation shall be required within 90 days after completion of coal combustion by-product fill project.
(c) The Register of Deeds in accordance with G.S. 161-14 shall record the notarized statement and index it in the Grantor Index under the name of the owner(s) of the land. The original notarized statement with the Register's seal and the date, book and page number of recording shall be returned to the Division after recording.
(d) When property with more than 1,000 cubic yards of coal combustion by-products is sold, leased, conveyed or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than used in the body of the deed or instrument a statement that coal combustion by-products have been used as fill material on the property.


15A NCAC 13B .1708 OTHER USES FOR COAL COMBUSTION BY-PRODUCTS
Coal combustion by-products may be beneficially used on one or more of the following applications or when handled, processed, transported or stockpiled for such beneficial use applications and do not require a solid waste permit provided the uses are consistent with the requirements identified below:

(1) Coal combustion by-products used as soil nutrient additives or other agricultural purposes under the authority of the North Carolina Department of Agriculture;
(2) Coal combustion bottom ash or boiler slag used as a traction control material or road surface material if the use is approved by the North Carolina Department of Transportation;
(3) Coal combustion by-products used as material in the manufacturing of another product, including, but not limited to concrete products, lightweight aggregate, roofing materials, plastics, paint, flowable fill and roller compacted concrete or as a substitute for a product or material resource, including but not limited to, blasting grit, roofing granules, filter cloth precoat for sludge dewatering and pipe bedding;
(4) Coal combustion by-products used as a structural fill for the base, sub-base, under a structure or the footprint of a paved road, a parking lot, sidewalk, walkway or similar structure;
(5) Coal combustion by-products used for the extraction or recovery of materials and compounds contained within the coal combustion by-products. Residuals from the processing operations shall remain solid waste and be subject to this Section and Section .1600 of this Subchapter; and
Coal combustion by-products processed with a cementitious binder to produce a stabilized structural fill product which is spread and compacted for the construction of a project with a planned end use.


15A NCAC 13B .1709 STORAGE AND CONTAINMENT OF COAL COMBUSTION BY-PRODUCTS
(a) Coal combustion by-products may not be stored or speculatively accumulated at the immediate area where they will be put to beneficial use for a longer period of time than necessary to complete the project. Coal combustion by-products are not being speculatively accumulated when a minimum of 75 percent of the coal combustion by-products are removed from the facility and beneficially used annually.
(b) Compliance with this Section does not exempt the owner or operator of the structural fill facility from applicable North Carolina Water Pollution Control Regulations (15A NCAC 2H), the North Carolina Air Pollution Control Regulations (15A NCAC 2D) and all other federal, state and local laws and regulations.


15A NCAC 13B .1710 ANNUAL REPORTING
By October 1 of each year, the generators of coal combustion by-products shall submit an annual summary to the Division. The annual summary shall be for the period July 1 through June 31 and shall include:
(1) Volume of coal combustion by-products produced;
(2) Volume of coal combustion by-products disposed;
(3) Volume of coal combustion by-products used in structural fill facilities; and
(4) Volume of coal combustion by-products used for other uses as described in Rule .1708 of this Section.