FISCAL NOTE

READOPTION AND AMENDMENTS TO 15A NCAC 13B REQUIREMENTS FOR CONSTRUCTION AND DEMOLITION DEBRIS AND REQUIREMENTS FOR MUNICIPAL SOLID WASTE LANDFILL FACILITIES

January 5, 2020

General Information:

Agency:	Environmental Management Commission
Department:	Department of Environmental Quality Division of Waste Management Solid Waste Section
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Title of Rule Set:	Requirements for Construction and Demolition Debris Landfill Facilities (CDLFs) and Requirements for Municipal Solid Waste Landfill Facilities (MSWLFs)
Citations:	15A NCAC 13B .0531 - .0545, .0547 15A NCAC 13B .1601 - .1627, .1629 - .1637, .1680
Authority:	G.S. 130A-294; G.S. 150B-21.3A
Impact Summary:	- Requires expenditure, distribution, or reallocation of State funds? Yes, but minimal, mostly state staff time - Impacts local government expenditures or revenues? Yes - Substantial Economic Impact? No - Private Industry Impact? Yes - Federal Requirement: State program approval for 40 CFR 258

Proposed Rule-Making Schedule:

Date	*Action*
7/10/2019	GWWMC Meeting: Approval of proposed text to go to EMC.
01/09/2020	EMC Meeting: Approval of rule text and regulatory impact analysis for public comment.
02/17/2020	Rules published in NC Register and Agency website Comment Period Begins.
03/03/2020	Earliest date for public hearing.
04/17/2020	Comment Period Ends.
05/14/2020	EMC Meeting: Approval of Hearing Officer's Report and Adoption of Rules.
06/18/2020	RRC meeting: Approval of rule text
07/01/2020	Earliest effective date for rules.

Purpose/Necessity of Rule Changes:
The Division of Waste Management (Division) Solid Waste Section (Section) is responsible for regulating solid waste management within the state under the statutory authority of the Solid Waste Management Act, Article 9 of Chapter 130A of the General Statutes. Rules governing solid waste management adopted under this authority are codified at Title 15A, Subchapter 13B of the North Carolina Administrative Code. Pursuant to G.S. 130A-294(a)(4), the Division has the authority to develop a permit system governing the establishment and operation of solid waste management facilities through permit conditions. These rules are proposed for readoption in accordance with G.S. 150B-21.3A, and are required to be readopted by the deadline set by the Rules Review Commission of April 30, 2021. The Division is proposing readoption with amendments to the following rulesets:

- 15A NCAC 13B .0531 - .0547
  Requirements for Construction and Demolition Debris Landfill Facilities (C&DLFs), and
- 15A NCAC 13B .1601 - .1680
  Requirements for Municipal Solid Waste Landfill Facilities (MSWLFs).

See Appendix for proposed rules changes.

The Requirements for Municipal Solid Waste Landfill Facilities (15A NCAC 13B .1601-.1680) govern the permitting procedures, siting, design, construction, operation, closure, long-term care and environmental monitoring of municipal solid waste landfill facilities. The rules were first adopted in October 1993 in response to promulgation of US EPAs RCRA Subtitle D requirements and 40 CFR 258, and are necessary for the Division's delegated solid waste program authority. To obtain and retain program approval for

municipal solid waste landfills, Section .1600 must comply with 40 CFR 239 – Requirements for State Permit Program Determination of Adequacy, Subpart C; and must be no less restrictive than 40 CFR 258 Criteria for Municipal Solid Waste Landfills. Since the Division received program approval for permitting and regulating the MSWLFs after the promulgation of the rules in Section .1600 in 1993, the Division has submitted these proposed rules to the US EPA for review to ensure that the existing program approval is not affected. Rule .1628 "Financial Assurance Rule" is addressed in a separate rule package for financial assurance, and the impact of any changes is addressed in a separate fiscal note.

The Requirements for Construction and Demolition Debris Landfill Facilities (15A NCAC 13B .0531 - .0547) include permitting procedures and criteria for siting, design, construction, operation, closure, long-term care and environmental monitoring of construction and demolition debris landfills. These Rules were originally adopted in January 2007; and are very similar in structure and content to the Rules that govern MSWLFs. Rule .0546 "Financial Assurance Requirements for C&DLF Facilities and Units" is addressed in a separate rule package for financial assurance, and the impact of any changes is addressed in a separate fiscal note. Rule .0547 is proposed for repeal as the requirements are no longer necessary.

The Division is proposing to amend these Rules to remove language that is no longer necessary, clarifying and correcting ambiguous, redundant, and dated language and definitions, and consolidating siting, design, operational, and permitting requirements that are not included in the existing rule language, but are required by permit condition or general statute, or reflect common practice. Only a few of the amendments constitute substantive changes. This regulatory impact analysis has been developed to summarize and show the regulatory impact of the proposed substantive changes.

The Division also made changes in response to comments received prior to the drafting of rule amendments from the National Waste and Recycling Association (NWRA) in October 2015, from the NC Solid Waste Association of North America (SWANA) in October 2019, and also from two comments received during the publication of the Periodic Review of Existing Rules Report in September 2016.

Baseline:

The baseline for the proposed readoption of rules 15A NCAC 13B .0531 - .0546 Requirements for Construction and Demolition Debris Landfill Facilities and .1601- .1680 Requirements for Municipal Solid Waste Landfill Facilities is the existing 15A NCAC 13B .0531 - .0547 and .1601- .1680 rules, Article 9 of Chapter 130A of the general statutes, and the permits issued by the Division of Waste Management for these facilities, and any local ordinances. In the absence of these rules, the facilities would still be required to comply with the requirements of Article 9 of Chapter 130A and the permits issued by the Division pursuant to G.S. 130A-294. Municipal solid waste landfill facilities would also be required to comply with the federal requirements in 40 CFR 258 in the absence of the rules in Section .1600.

In the absence of these rules, these landfill facilities would also still be required to comply with multiple other federal regulations and North Carolina general statutes and the rules promulgated thereunder for the location and operation of the facility. The existing rules contain multiple references to these requirements for ease of review and/or information only, and the proposed rules add additional similar and updated references for recent changes to statutes, for ease of review and/or information only. Some examples of these referenced regulations are as follows (this list is not comprehensive):

Federal Regulations:

The Clean Water Act

The Safe Drinking Water Act

The Endangered Species Act

Marine Protection, Research, and Sanctuaries Act

National Historic Preservation Act

40 CFR 61(M) for handling of asbestos

40 CFR 258 for MSWLF (the Division has permit program approval via rules in Section .1600)

NC General Statutes:

For solid waste management landfills: G.S. 130A-22, 130A-23, 130A-290, 130A-294, 130A-295.2, 130A-295.3, 130A-295.5, 130A-295.6, 130A-295.8, 130A-301, 130A-303, 130A-308, 130A-309, 130A-309.09D, 130A-309.10, 130A-309.25, and 130A-309.27.

S.L. 2007-543 and S.L. 2007-550 affect the effective dates of some of the statute changes, which is why we reference them in the rules.

S.L. 2018-65 required a change to Rule .0544 that is being made as a part of the readoption process.

For professional licensing: G.S. 89C and 89E

Other NC Administrative Code:

15A NCAC 02B or Surface Water Protection

15A NCAC 02C for Monitoring Well Construction

15A NCAC 02L for Groundwater Protection

15A NCAC 04C for Sedimentation Control

Note that 15A NCAC 02L .0106(d) regarding corrective action for groundwater protection provides specific requirements for activities conducted under the authority of a permit initially issued by the Department on or after December 30, 1983 pursuant to G.S. 143-215.1 or G.S. 130A-294 that results in an increase in concentration of a substance in excess of the standards established under 15A NCAC 02L .0202.

Permitted Facilities Potentially Affected by the Rule Changes:
Rule changes would potentially affect owners and operators of MSWLFs and C&DLFs permitted by the Division and regulated by the existing rules, and include the facilities listed below:

- 42 Municipal Solid Waste Landfill Facilities
    - 36 Local government-owned (3 of which are privately operated)
    - 5 Privately-owned
    - 1 Federally-owned
- 51 Construction and Demolition Landfill Facilities
    - 37 Local government-owned (15 of which are C&DLF on top of MSWLF and are subject to MSWLF rules)
    - 14 Privately-owned (1 lined)

Impact Analysis:
The majority of changes to both the C&DLF and MSWLF rulesets are administrative in nature, consisting of technical corrections, updates to information such as Department names, addresses, websites, and references, clarification of vague or unclear language, and removal of redundant or unnecessary language, and are not substantive changes. Other proposed amendments eliminate out-of-date requirements related to transitioning facilities existing at the time of original rule promulgation; incorporate references to general statute requirements for siting, design, operation, and permit processing to reflect changes that have occurred in statute, update definitions to avoid redundancy between definitions in statute, in 15A NCAC 13B .0101, and in Rules .0532 and .1602; and modify the rules to reflect life-of-site permitting as required by statute changes in 2015. These proposed amendments provide benefits to landfill owners and operators mainly in terms of clarification of requirements and result in no fiscal impacts.

Proposed amendments to Rule .0531(e) and Rule .1601(d) incorporate by reference all federal regulations cited throughout the rule sections, including subsequent amendments and editions. Any future changes to the cited federal regulations that would change the requirements in 15A NCAC 13B Rules .0531 through .0547 or Section .1600 is not addressed by this fiscal note or any future fiscal note.

Proposed amendments to Rules .0532 and .1602, Definitions, provide clarification by adding the introductory statement that all definitions provided in Article 9 of Chapter 130A of the General Statutes and the definitions in Rule .0101 of Subchapter 13B apply to the rule sets for these facilities, in addition to the definitions in Rules .0532 and .1602. Some definitions in these rules are proposed to be deleted because definitions for these terms already appear in the general statutes or in Rule .0101 (and in some cases differed from the definitions in these rules, such as the definition for “leachate”), or because the term is not used in these rules.

The proposed amendments also move some definitions from other locations in the rules to the .1602 Definitions Rule, such as “unstable areas,” and the definitions for the terms

found in that definition ("areas susceptible to mass movement," "karst terranes," "poor foundation conditions", and "gas condensate"). Note that 15A NCAC 13B .0101 will also be readopted with amendments to some of the definitions at a later date.

Proposed rule amendments related to life-of-site statute changes, post-closure certification, closure permits, groundwater, surface water, asbestos management, leachate, and explosive gas monitoring and corrective action are considered substantive and require further discussion. A description of these proposed changes, implementation costs, and expected benefits are described in further detail below.

General Amendments in Response to Life of Site Statutory Changes

Session Laws 2015-241 and 2015-286 made changes to G.S. 130A-294 to require that permits for sanitary landfills and transfer stations be issued for the life-of-the-site instead of every five years. Following the statute changes, 15A NCAC 13B Rule .0207 "Life-of-Site Permit Issued for Sanitary Landfill or Transfer Station" was adopted in 2016 to conform to the statute change, and a regulatory impact analysis for this rule change was prepared at the time. Proposed amendments to the rules for MSWLFs and C&DLFs landfills are included to update the language to conform to the revised statute and Rule .0207 for permit length.

In amending the rules to reflect life-of-site permitting, the Division is eliminating the requirement for facilities to limit construction to five-year phases and eliminating the requirement for facilities to obtain a permit amendment every five years. The proposed rule accommodates facilities that wish to prepare and submit permit applications and plans that represent the entire planned life-of-site, and also accommodates facilities that may choose to continue to prepare and submit permit applications and plans with shorter projections, allowing the facility to choose any stage/phase of landfill development (such as 5, 10, or 20+ years) up to 60 years, but no less than 5 years. The amendments clarify that facilities that choose to continue planning in shorter phases would need to (and would be able to) continue to submit permit amendment applications for the next stage/phase of development, once the stage/phase that the facility previously planned and submitted is completed.

While some facilities may have the means or ability to plan as far ahead as 60 years, other facilities, such as those owned or operated by local governments, may not have the ability or the immediate access to funding to plan the landfill's stages/phases that far ahead in one application at their next permit renewal (for most facilities this would be before 2024), even though the Division is required to issue a permit to these facilities that is technically for the life-of-site. Since the statute was amended to require life-of site permits, the Division has been issuing permits that state that they are for "life-of-site", however none of the life-of-site permits that have been issued to date have actually included plans for the full 60-year life-of-site or the full capacity of the site property, and therefore all of the facilities that have been issued a life-of-site permit to date will, at some point in the future, need to submit an application for a permit amendment with siting, design, and construction plans for the full remaining life of the site, up to 60 years.

As the majority of permitted MSWLFs and C&DLFs in North Carolina are owned and/or operated by local governments (36 of 42 MSWLFs and 37 of 51 CDLFs), the Division is attempting to provide these facilities the flexibility they need to continue planning and applying for permits as needed and/or as they are able. The proposed amendments provide a benefit to the facilities since they do not require the next permit application submittal to include plans for the full life of the site, but instead give facilities the choice at their next permit renewal to either complete the engineering and construction planning for the entire life of the site; or they may complete the planning and submit applications on their own schedule (but no less than every five years). The benefits would be difficult to quantify since the Division cannot predict how the applicants will choose to submit their applications, and permit applications are site-specific and have many variables based on site location and the operations and additional waste management activities that the facility is electing to conduct at the site.

Any permit application submitted would be considered and treated as a permit amendment or modification as allowed to be submitted in existing Rules .0533(a)(2), (3), and (4) and .1603(a)(2) and (3); and as will continue to be allowed under the proposed amendments to these rules. For permit applications that are not a new permit, the applicant generally can utilize the majority of a previously submitted application as a template, and just modify the sections that are changing. Also, since the statutory change to life-of-site permitting, these facilities by statute are not required to pay individual permit application fees for submittal of a permit application that is not a new permit, and they pay an annual permit fee instead, so any additional application submittals would not incur additional permit application fees. The Division roughly estimates that the cost of preparing and submitting one elective permit application that is not a new permit for an MSWLF or C&DLF, assuming a five-year operating period, could range from $50,000 to $100,000, the bulk of which is associated with evaluating the site hydrology and geology that provides the basis for design of the landfill and groundwater monitoring system. However, it can be inferred that the benefit per facility is at least as great as the cost of multiple applications, and therefore, given the flexibility provided in the rules, the net benefit is positive.

Amendments to Application Requirements in Rules .0535(a) and (b) and .1617(a) and (b)

(a) Description and Rationale:
Proposed amendments to Rule .0535 changed the terminology used for differing types of permit applications to be consistent with the definition of “new permit” in G.S. 130A-294(a3), and to clarify that only certain types of new permits would require that all documentation be resubmitted in an application. If a permit application that meets the statute definition of a new permit is only proposing to change the area to be served by the facility or the amount of waste received, then they only have to submit an updated facility plan, local government approval, and corporate ownership organizational chart and environmental compliance history, and they are not required to resubmit all of the plans and the site suitability study if these documents are not changing, and the Division already has them on file. The amendment puts into rule what is already generally done

in practice.

(b) Costs/Benefits by Entity
(1) Private Industry and Local Government-Owned Facilities
These amendments reduce the burden on the facilities by not requiring resubmittal of documents that are not changing and that the Division already has on file. The cost savings is minimal since it was a minor task for resubmittal of existing documents electronically. The amendment provides clarity to the regulated community on what documentation does not need to be resubmitted for certain types of permit changes.

(2) State Government
The proposed amendments would have only minimal cost savings for Division staff since minimal time was spent reviewing these resubmitted documents that are not changing, especially since in practice Division staff would not require submittal of these documents. The amendment provides clarity to Division staff on what documentation does not need to be resubmitted for certain types of permit changes.

<u>Requirement for Five-Year Post Closure Certification in Rules .0543(e)(3) and .1627(d)(3)</u>

(a) Description and Rationale:
Proposed amendments to Rules .0543(e)(3) and .1627(d)(3) would require that the facility owner or operator certify that post-closure maintenance and monitoring activities have been conducted in accordance with the Division-approved plans at five-year intervals during the 30-year post-closure period. Existing rules only require that this certification be submitted to the Division at the end of 30 years rather than throughout the post-closure period. Current post-closure care plans incorporated into the permits and approved by the Division per existing rule for all existing facilities include the requirement for annual inspections by the owner's engineer and cost estimates for this service. With the proposed rule change, the Division is asking that facilities report the results of these inspections to the Division every five years while post-closure care is being conducted, and have the inspection certified by a professional engineer.

The rule change would allow the Division to monitor the integrity and performance of the cap, leachate management systems, and environmental monitoring systems, so that improvements or minor tweaks to the cap and systems can be made throughout the post-closure care period for optimum performance and so that potential releases to the environment can be eliminated or minimized, instead of discovering at the end of the 30-year period that clean-up/remediation actions or larger or somewhat more expensive changes need to be made to the cap or systems because the systems were not operated and maintained properly over that 30-year period.

The submittal of the five-year certifications will also aid the Division in any decision to decrease the post closure care period or to decrease or suspend leachate management activities as allowed by Rules .1627(d)(1)(B) and (d)(2)(A). Also, the existing rule requires a professional engineer to certify post-closure care at the end of the thirty-year post-closure period, but owners and operators have expressed concern to the Division that it

is unlikely that the same engineer will be available for the entire thirty-year period to provide certification at the end of post-closure care for work completed throughout the entire post-closure care period. The amendment will reduce the chances of having gaps in certification by a professional engineer due to staffing or other changes.

(b) Costs/Benefits by Entity

(1) Private Industry and Local Government-Owned Facilities

Proposed amendments are not expected to substantially affect expenditures or revenues of any private or local government-owned owner/operators of C&DLFs or MSWLFs. Post-closure care plans incorporated into the permit for existing facilities already include provisions for annual inspection by the owner's engineer and cost estimates for this service. Data from yearly post-closure cost estimates submitted by the facilities to the Division for financial assurance indicate that fees for the annual inspection are generally in the range of $5,000.00 to $10,000.00 (with some outliers) for an average of approximately $7,500.00. Since all existing facilities are required to conduct annual inspections as a requirement of their post-closure plan, this amendment to the rule in practice will only add a requirement that the owner/operator submit the results of these inspections to the Division every five years that post-closure is being conducted, and that the inspection be certified by a professional engineer. The requirement for certification by a professional engineer, if the facility were not already utilizing a professional engineer, may increase the cost of the inspection by around 10% to 20%.

There is one privately-owned MSWLF and two local government-owned MSWLFs that are currently subject to post-closure care requirements that would be affected by this rule change. No MSWLF facilities are expected to close within the next five years. The total annual cost increase as compared to the existing permit requirement for the one private facility in post-closure care that would be affected by the rule change is estimated to range from $75 to $150. The total annual cost increase as compared to the existing permit requirement for the two local government-owned facilities in post-closure care that would be affected by the rule change is estimated to range from $150 to $300.

The rule change provides a benefit to the regulated community and the environment by allowing the Division to monitor the integrity and performance of the cap, leachate management systems, and environmental monitoring systems, so that improvements or minor tweaks to the cap and systems can be made throughout the post-closure care period for optimum performance and so that potential releases to the environment can be eliminated or minimized, instead of discovering at the end of the 30-year period that larger or somewhat more expensive changes need to be made to the cap or systems or clean up/remediation initiated because the systems were not operated and maintained properly over that 30-year period. The cost difference due to identification of potential issues are difficult to estimate because no existing facilities have reached the end of their 30-year post-closure care period, and problems that may arise cannot be predicted and would be site-specific.

Another benefit is that five-year certifications will create a record of post-closure care that could aid the Division in reaching decisions to decrease the post closure care period or

to decrease or suspend leachate management activities, because it avoids the potential for gaps in certification by a professional engineer due to staff changes. Existing rule already allows facilities to request to suspend post-closure care if they can demonstrate minimal negative effect to human health and the environment. This rule amendment would simply provide the Division with sufficient evidence and support for the demonstration. A decreased post-closure care period or a decrease/suspension of leachate management activities at lined facilities would result in annual savings of associated maintenance, monitoring and inspection costs at both government-owned or privately-owned facilities for each year that the period is decreased, but these cost savings would not necessarily or directly be attributed to this rule amendment.

(2) State Government
Proposed amendments are not expected to affect expenditures or revenues of the state government. No new staff would be required to incorporate review of the certifications, and any opportunity cost of using existing staff time would be minimal, as only three facilities are currently in post-closure care, no facilities are expected to close within the next five years, and the reviews would only be done every five years at each facility (not all on the same schedule), and would only take a few hours of staff time. Additionally, the amendments may save staff time at the conclusion of the post-closure period in trying to resolve non-compliance with the post-closure plan.

<u>Requirement for Closure and Post-Closure Permit in Rules .0533(a)(4) and .1603(a)(4)</u>

Description, Rationale, Costs, and Benefits:
Proposed amendments to Rules .0533(a)(4) and .1603(a)(4) would require that owners and operators apply for a Permit for Closure and Post-Closure Care. This amendment is proposed in order to clarify current practice in rule, and to ensure that closure and post-closure plans are updated prior to implementation. Existing rules in Sections .0500 and .1600 require that only two types of permits be issued to landfills: the permit to construct and the permit to operate. These permits only cover the construction phase of a landfill unit and the operation phase of a landfill unit. However, after a landfill ceases to operate and closes the facility, landfills are required to conduct post-closure care for 30 years for each unit at the facility after it has been closed, which mainly consists of cap maintenance and environmental monitoring. Note that landfills are constructed in “phases” or “units”, and may have closed individual units at their facilities, but still have other units remaining open or active. While units remain open, the overall facility is still operating under their permit to operate. However, after all units at the facility have closed, the life-of-site permit to operate expires pursuant to the definition of “life-of-site” in G.S. 130A-294(a2).

When a facility submits a permit application for a life of site permit, they are required to submit closure and post-closure plans, engineering plans, and monitoring plans for Division approval, and once approved, these plans are incorporated into the permit when the permit is issued. Facilities are required by existing rule to comply with their permit conditions, including the incorporated plans. Since permits are now issued for life-of-site, and life-of-site, as defined in statute, expires when the facility reaches its highest permitted elevation, the life of site permit to operate expires at facility closure. Therefore,

the Division's authority to enforce the post-closure, engineering, and monitoring plans becomes uncertain/questionable, because the rules require compliance with the permit, and a permit no longer exists. The facilities still clearly have to comply with general statewide requirements in rule for post-closure care and monitoring, but the plans incorporated in the permit contain conditions/requirements that are more detailed and specific to each facility. The Division is proposing to add a requirement to obtain a closure permit to clarify authority for these site-specific requirements in the plans.

The Division currently reviews and approves closure and post-closure plans for MSWLF and C&DLF facilities as part of the current permitting process and would require a modification to a permit for any changes or updates. Also, it is current practice that the Division issues documentation of closure conditions as a closure letter or as permit conditions for closure after review of closure construction quality assurance documentation is completed, even though existing rule does not state this procedure/requirement explicitly.

Also, until recently, closure and post-closure plans were routinely updated and reviewed during the landfill's five-year permit amendment process. Since life-of-site permitting was initiated by Session Laws 2015-241 and 2015-286, the Division no longer receives five-year permit amendments, but the Division expects that facilities will still submit permit applications periodically throughout the operational period to meet the application requirements in Rule .0533(a)(1) through (a)(3) and Rule .1617(a) through (d) (for facility changes or expansions). For many facilities, the review of the plans for facility closure may still be conducted in conjunction with a periodic application submittal and/or could continue to be treated as permit modifications (current practice) and would incur no additional costs.

The Division is proposing to require that only one permit application be submitted for the closure/post-closure care period of 30 years, although the facility will still likely choose to submit periodic updates to the facility plans throughout the post-closure care period to be able to reduce the amount of financial assurance required to be reserved for remaining post-closure care. The Division is proposing to require the one application for a closure/post-closure permit for the benefit of providing clarification to Division staff and the regulated community that the permit and plans would need to be revisited and necessary updates made prior to implementing closure activities, in addition to providing clarity on authority and requirements to follow the plans.

(b) Costs/Benefits by Entity

(1) Private Industry and Local Government-Owned Facilities

Among facilities that are subject to these rules, only one privately-owned MSWLF and two local government-owned MSWLFs have completed closure of the entire facility, and no C&DLFs have completed closure of the entire facility. The rule amendment clarifies that these facilities that have already closed prior to the readopted effective date of the rule will not be required to submit the closure permit application, but the Division will simply issue a closure permit based on the most recent permit application, which would have been at closure or a modification done after closure. Division staff time would be

minimal since they would be able to just generate a document from an existing permit or closure letter, renamed as a closure permit. No facilities are expected to close within the next five years, therefore any impacts due to this rule change would be delayed beyond five years, and would be difficult to estimate as costs would be site-specific.

For future closures the cost to prepare and submit a permit application is difficult to estimate. Permit applications are site-specific and have many variables based on site location and the operations and additional waste management activities that the facility is electing to conduct at the site. For permit applications that are not a new permit, the applicant generally can utilize the majority of a previously submitted application as a template, and just modify the sections that are changing. Also, around the time of final waste receipt, the applicant/consultant is finalizing plans for installing the landfill cap system, making any final changes to their plans and preparing bid documents. The added cost to submit these documents to the Section should be minimal. The Division roughly estimates that the cost to prepare one closure/post-closure permit application for submittal to the Section could range from $2,000 to $2,500. However, this cost may be offset by the benefit of clarification for the facilities and Division employees on what is required during the closure and post-closure period, saving time in discussions on requirements or trying to correct problems that may arise if requirements are unclear.

(2) State Government

Division staff are currently required to review the facility's existing closure and post-closure plans at the time of closure to determine compliance with that plan, therefore no additional time would be required to review the updated closure and post-closure plans submitted with the application. If a facility did not request the closure/post-closure permit concurrently with a permit amendment or permit modification application, then Division staff time to review one closure/post-closure permit application and issue a permit, assuming it is prepared by revising documents from the previously submitted permit application, may range from 8 to 16 hours. Assuming a staff rate of $30 per hour and a total compensation of about $45.5 per hour, the estimated cost for one closure/post-closure permit application may be about $360 to $730. However, this cost would be offset by the benefit of clarification to Division employees and the regulated community of what is required during the closure and post-closure period, saving time in discussions on requirements or trying to correct problems that may arise if requirements are unclear. Also, in practice and as part of the previously required five-year permit renewals, Division staff issued closure permits or closure letters for the post-closure period for facilities, therefore no new or additional state funds would be required to be allocated for staff time.

(3) NC Citizens

This requirement also provides a benefit to citizens of NC and the general public in that it creates a clear and stand-alone Division-issued permit document that specifically describes the closure and post-closure requirements for that facility, and this document is provided for the public to review on the Division's online document management system. This document would provide clarification to the public on the operations and requirements at the facility that have changed or are no longer applicable after the facility has closed, which may be helpful to both the public and the facility in avoiding confusion

or complaints. The Division's document management system can be found online here: https://deq.nc.gov/about/divisions/waste-management/waste-management-rules-data/e-documents.

Monitoring Plans & Requirements for C&DLFs in Rule .0544

(a) Description and Rationale:
Proposed amendment .0544(b)(1)(D) revises the baseline sampling requirement for detection monitoring. Existing rule for baseline sampling requires a minimum of one sample from each well be collected and analyzed for required constituents prior to waste placement in each cell or phase. The proposed amendment increases the minimum number of baseline samples collected and analyzed from each well to four independent samples collected over a six-month period with no less than one sample collected prior to waste placement in the new cell or phase. Baseline sampling is required to establish existing groundwater quality for each individual well prior to any potential impact from the new cell or phase. The Division recommended four baseline samples for consistency with baseline sampling requirements for MSWLFs in Rule .1633(b). Additionally, increasing the number of baseline samples over a 6-month period provides the potential to establish any variability in the baseline dataset due to seasonality or other reasons specific to the site.

The Division is also amending this rule to comply with Session Law 2018-65 (HB 573) Section 5, which states:

> "Reduce Frequency of Required Groundwater Sampling for C&D Landfills From Semiannual to Annual
> Section 5.(a) Definitions. – "Monitoring Plans and Requirements for C&DLF Facilities Rule" means 15A NCAC 13B .0544 for purposes of this section and its implementation.
> Section 5.(b) Monitoring Plans and Requirements for C&DLF Facilities Rule. – Until the effective date of the revised permanent rule that the Environmental Management Commission is required to adopt pursuant to subsection (d) of this section, the Commission shall implement the Monitoring Plans and Requirements for C&DLF Facilities Rule, as provided in subsection (c) of this section.
> Section 5.(c) Implementation. – Notwithstanding sub-subdivision (b)(1)(D) of the Monitoring Plans and Requirements for C&DLF Facilities Rule, the Commission shall not require semiannual monitoring frequency for required groundwater sampling but shall only require such sampling on an annual basis.
> Section 5.(d) Additional Rule-Making Authority. – The Commission shall adopt a rule to amend the Monitoring Plans and Requirements for C&DLF Facilities Rule consistent with subsection (c) of this section. Notwithstanding G.S. 150B-19(4), the rule adopted by the Commission pursuant to this section shall be substantively identical to the provisions of subsection (c) of this section. Rules adopted pursuant to this section are not subject to Part 3 of Article 2A of Chapter 150B of the General Statutes. Rules adopted pursuant to this section shall become effective as provided in G.S. 150B-21.3(b1) as though 10 or more written objections had been received as provided in G.S. 150B-21.3(b2).
> Section 5.(e) Sunset. – This section expires when permanent rules adopted as

required by subsection (d) of this section become effective."

Section 5.(c) implemented a change to Rule .0544 that requires C&DLF facilities subject to Rule .0544 to conduct detection groundwater monitoring on an annual basis, instead of a semi-annual basis. Section 5.(d) also required the Environmental Management Commission to adopt a permanent rule to amend Rule .0544 to be substantively identical to the requirement in Section 5.(c). Because Section 5.(e) states that the change made by Section 5.(c) does not expire until the permanent rule is adopted, the Session Law change is a part of the baseline for Rule .0544. The Division has been operating in compliance with Session Law 2018-65 Section 5.(c) since its effective date on June 25, 2018, and is proposing the required change to Rule .0544 concurrently with the rule readoption process.

The existing rules do not specifically establish a frequency for surface water sampling and analysis, and the frequency for sampling events was generally established in the Division-approved plans that were incorporated as permit requirements. As established in permits and monitoring plans, the frequency for surface water monitoring for all facilities has been semi-annual, with some exceptions, and was timed to be conducted concurrently with the groundwater sampling that was previously required semi-annually. Because the frequency of groundwater sampling has been reduced by Session Law to annually, the Division is proposing to establish a minimum required frequency of annually for surface water sampling for C&DLFs in Rule .0544, to be consistent with the new frequency of groundwater sampling. The Division is also proposing to amend Rule .0545(b)(2) to clarify that the frequency of assessment monitoring for an exceedance of the standards is still semi-annual, and has not changed from the existing rule.

(b) Costs/Benefits by Entity

(1) Private Industry and Local Government-Owned Facilities

Additional costs to private industry and local government-owned facilities include the added labor and analytical costs associated with the increased baseline sampling frequency. The proposed amendment would add costs to 14 existing active C&DLFs owned by private industry and 22 existing active C&DLFs owned by local governments whenever these facilities expand, and to any new C&DLF facilities going forward. Based on Division experience, existing facilities are likely to expand on average once every five years. New facilities are less common and, based on recent history, the Division projects an estimate of no more than 1-2 new facilities every five years. Note that these proposed amendments to Rule .0544 would not affect the 15 local government-owned C&DLFs over existing MSWLFs because these facilities are subject to the MSWLF rules in Section .1600.

The Division's best estimate of the total increased costs for baseline sampling at existing facilities ranges from $1,900 to $4,200 incurred on average every five years, which coincides with expected expansion timeframe. This estimate is based on three additional sampling events for 1 to 3 new wells by a professional consultant (using an average billing rate of $65/hour for an estimated 18-30 hours, depending on number of wells) and on three additional laboratory analyses for 1-3 new wells each (at an estimate cost of $250/sample). The total annual impact for existing facilities is estimated to range from

$13,680 to $30,240.

The increased costs for new facilities going online for first time (using the unit cost estimates above) is expected to be approximately $5,340 for the initial four baseline sampling events for four wells (one upgradient and three downgradient wells). With an estimate of no more than 2 new facilities every five years, the total annual impact for new facilities is estimate at $2,136.

Since Session Law 2018-65 directly implemented the change to reduce the frequency of groundwater monitoring to annual for C&DLF facilities subject to Rule .0544 for detection monitoring (which does not expire until the new rule is effective), this change is a part of the baseline for this rule amendment, and also reduces the burden on the permittees. While there was no specific frequency established in existing rule for surface water sampling, and the requirement for semi-annual sampling was generally established in permit, the proposed frequency of no less than annual for these sampling events will reduce the burden on the permittees, and prevents them from having to continue to conduct the second semi-annual sampling events strictly for surface water, which is generally only a few samples. Approximately 36 C&DLFs currently collect surface water samples semi-annually from between two and four sampling locations.

Cost savings to private industry and local government-owned facilities include savings from the reduced labor and analytical costs associated with reducing surface water monitoring from twice/year to once/year. The proposed amendment would reduce costs to 14 existing active C&DLFs owned by private industry and 22 existing active C&DLFs owned by local governments, and to any new C&DLF facilities going forward (with no more than 1 or 2 new facilities expected every five years, if any).

The Division's best estimate of the annual average cost savings for each facility due to requiring only annual surface water monitoring ranges from $1,400 to $2,050. This estimate is based on collection of samples from an average of three surface water sampling locations per facility by a professional consultant (using an average billing rate for a field technician of $65/hour) for an estimated 10-20 hours, depending on travel time and number of samples collected, and on laboratory analyses for three samples per facility (at an estimated cost of $250/sample). The total annual cost savings impact for the 36 existing facilities is estimated to range from $50,400 to $73,800.

(2) State Government

Proposed amendments regarding baseline sampling are not expected to affect expenditures or revenues of the state government. Management and administrative time for processing and documenting the additional baseline sampling data by a staff hydrogeologist is expected to be minimal and part of the regular reporting process.

Even though the change has already been implemented, proposed amendments to comply with Session Law 2018-65 regarding the reduction in frequency of groundwater monitoring reduce state government staff time spent in reviewing detection groundwater

monitoring reports and data. The proposed change to establish a frequency for surface water sampling will have little to no effect on staff time spent reviewing data submitted since data collected for surface water sampling is minimal.

Assessment Requirements for C&DLFs and MSWLFs in Rule .0545 and Rule .1634(c)

(a) Description, Rationale, Costs, and Benefits
Rules .0545 and .1634(c) establish assessment requirements for facilities if any exceedances of groundwater standards are identified. Proposed amendments to .0545(d)(3) and .1634(c)(4) provide specific guidance and clarification for the frequency, analyses, wells, and reporting for the assessment monitoring and puts into rule requirements that are consistent with requirements in assessment monitoring plans submitted in the permit for facilities currently in assessment monitoring.

The existing rules states in general that the facility shall continue to conduct assessment monitoring until allowed to return to detection monitoring. The amendments clarify what it means to continue assessment monitoring, and how the facility is meant to combine the detection monitoring requirements with assessment monitoring requirements. The proposed amendment to Rule .0545(d)(3) provides a benefit by clarifying that conducting assessment monitoring means that the facility shall sample and analyze all of the monitoring wells for all constituents listed in Appendix I and for those constituents in Appendix II not listed in Appendix I that have been detected, and that any well with a reported groundwater standard exceedance shall be sampled for all additional constituents in Appendix II annually. The proposed amendment to Rule .1634(c)(4) provides a benefit by clarifying that conducting assessment monitoring means the facility shall continue to sample and analyze all wells semi-annually for the Appendix I constituents as they are required to do in detection monitoring, and in assessment monitoring they will add semi-annual sampling of the additional Appendix II constituents not listed in Appendix I that have been detected, and that any well with a reported groundwater standard exceedance shall be sampled for all additional constituents in Appendix II annually. (note the Appendix II list contains all Appendix I constituents and multiple additional constituents). This amendment is not expected to add any cost because facilities currently in assessment are already conducting the sampling in this manner, as required by the assessment monitoring plans incorporated into their permit.

The proposed amendment in Rule .0545(c)(4) provides more flexibility to the facilities by allowing them to request that for any monitored constituent a site background concentration, determined in accordance with criteria in existing rule and that is higher than the standards established in 15A NCAC 02L or the groundwater protection standards established in Rule .0545(c)(1) or (c)(2), be approved as the groundwater protection standard specific to that unit. This language is proposed to be added to be consistent with existing rules in .0545(b)(3) and .1634(g)(5) that approve use of background as the GWPS, as well as existing rule language in 15A NCAC 2L .0202(b)(3). This change is viewed as having a net positive impact on the facilities in cases where the naturally-occurring background (and/or pre-waste baseline) concentration is higher than the GWPS; otherwise, facilities would not have a clear process for requesting use of a

background level that is higher than the GWPS set in rule. Further, the proposed amendment provides clarity in how to address otherwise apparent 'false positive' indications of groundwater standard violations. However, the net impact would be different for each facility and is difficult to compute given all the idiosyncrasies. While there would be additional cost of Division staff time to review requests for higher background levels, the cost is expected to be minimal.

Asbestos Waste Management Requirements in Rules .0542(c)(3) and .1626(1)(d)

(a) Description, Rationale, Costs, and Benefits
The proposed amendments to asbestos waste management requirements in Rules .0542(c)(3) and .1626(1)(d) were made at the request of facility owner/operator stakeholders to provide clarification on methods for disposal that will allow facilities to use procedures that are the most effective for the facility, as long as those procedures are described in the operations plan which is approved by the Division when incorporated into the facility permit.

The existing rule gave specific methods for disposal, stating that the waste shall 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. The existing rule also requires that the separate asbestos waste disposal areas be shown on the operation drawings and designated with signage so that the asbestos is not exposed by future land disturbing activities. Discussions with stakeholders determined that these requirements were unclear, overly specific, or not practical. Since the goal or intent of the rule is to ensure compliance with 40 CFR 61(M) and ensure that the asbestos is not exposed by future land disturbing activities, the rule is proposed for amendment to require that this goal be met but does not require specific methods for meeting the goal. The proposed rule provides some examples of such methods that are commonly used in practice and approved in existing facility permits but allows facilities to describe the exact methods they will use in their operations plan, so that the Division may review and determine if the methods meet the rule requirement.

Since the proposed amendments are putting into rule what the Division and facilities have been doing in practice, it would not incur additional costs or staff time for either party. The proposed amendments provide a benefit by providing clarification and flexibility in the requirements for disposal procedures for asbestos waste management.

Leachate Management Plan Requirements in Rule .0542(o)

(a) Description and Rationale
The Division is proposing to update Rule .0542 by adding Paragraph (o) to require submittal of a leachate management plan for facilities that have a liner and a leachate collection system following the promulgation of G.S. 130A-295.6 in Session Law 2007-550 Section 9.(a). Existing Rule .0537(e)(3)(A) requires that the Facility Plan contain information on leachate management systems, if proposed by the applicant. Rule .0537(e)(3)(A) is also being amended to state "if required in accordance with the effective date and applicability set forth in S.L. 2007-550" instead of "if proposed by the applicant"

since the Session Law added the statutory requirement for leachate collection systems. Therefore, the general requirement to submit a plan for leachate collection and management is not a new requirement. This language is consistent with the same requirement for MSWLFs in Rule .1626(12).

The proposed amendment requires that the leachate management plan includes discussion of the following:

(1) periodic maintenance of the leachate collection system;
(2) maintaining records for the amount of leachate generated;
(3) leachate quality sampling and analysis at a frequency of no less than annually;
(4) approval for final leachate disposal; and
(5) a contingency plan for extreme operational conditions.

Session Law 2007-550 revised G.S. 130A-295.6 required periodic inspection and maintenance to the leachate collection system (#1). Rule .0542(l)(4) requires containment or treatment of leachate prior to discharge and that an NPDES permit may be required from the Division of Water Resources. If the facility discharges leachate to a waste water treatment plant, they would need to obtain approval from the waste water treatment plant prior to discharge. The amendment requires only that they submit this documentation (the WWTP approval or the NPDES permit) in the plan (#4). Either the waste water treatment plant or the NPDES permit requires sampling of leachate quality and requires tracking of the amount of leachate discharged. The amendment requires that the existing results of the required sampling and records of leachate discharged be submitted in the plan (#2 and #3). The plan required in existing Rule .0537(e)(3)(A) included requirements for the design and a contingency plan (#5).

Since existing Rule .0537(e)(3)(A) requires that the Facility Plan contain information on leachate management systems if proposed, the only change from baseline made by the proposed amendment is additional specificity on what is meant by “normal operating conditions” as required in existing rule. Under existing rule, the Division would have had to tell the applicant what to include in the plan as “normal operating conditions”, and in practice would refer them to the same language for leachate management plans in existing MSWLF Rule .1626(12).

(b) Costs/Benefits by Entity

(1) Private Industry and Local Government-Owned Facilities

Since Session Law 2007-550 did not require existing landfills at the time to install a leachate collection system, and the proposed amendment only requires submittal of a leachate management plan if the facility has a leachate collection system, no existing facilities would be impacted by this proposed amendment. Only one new facility has been constructed after the Session Law changes that has a leachate collection system, and that facility supplied a leachate management plan in accordance with existing Rule .0537(e)(3)(A) that contained the information required in the proposed amendment as a part of their facility plan in their application. Since in practice the Division would have

referred any future facilities constructed with a leachate collection system to the same language in Rule .1626(12) for more specific information in the plan to describe normal operating conditions, as required by existing Rule .0537(e)(3)(A), the proposed amendment is not expected to have any impact on future new facilities.

(2) State Government
The proposed amendment would not require additional staff time spent on review of a plan since existing rule already required submittal of a plan if a leachate collection system was present, and no existing facilities will have to submit a new plan as discussed above. The Division estimates only 1 or 2 new facilities would submit an application for a new facility in the next five years, however since, in practice, the Division would have referred any future facilities constructed with a leachate collection system to the same language in Rule .1626(12) for more specific information in the plan to describe normal operating conditions, as required by existing Rule .0537(e)(3)(A), the proposed amendment is not expected to require any additional Division staff time. The proposed amendment may provide minimal time savings for Division staff since the information required is now stated directly in the Rule, and the Division would no longer need to refer applicants to Rule .1626(12) for requirements.

<u>Surface Water Monitoring Requirements for MSWLFs in Rule .1623</u>

(a) Description and Rationale:
A proposed amendment to Rule .1623(b)(3)(B) changes Part (B) from referring to existing Rule .0602 for requirements on what information needs to be included in a surface water monitoring plan, to directly listing the information required to be submitted in the water quality monitoring plan for surface water monitoring. The proposed language is consistent with the same language in the C&DLF rules. The reason for this amendment is because Rule .0602 is planned for revision to state that the rule only applies to municipal solid waste landfill facilities that are not subject to the rules in Section .1600. Therefore, it would create confusion to exclude facilities that are subject to Section .1600 from complying with Rule .0602, but then refer those facilities back to Rule .0602.

The existing factors provided in Rule .0602(a)(1) through (a)(5) are being moved to Sub-part (vi), and the requirement in Rule .0602(b) is being moved to Sub-part (v). Sub-parts (i) through (iv) provide clarification of the language in Rule .0602(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;” and (c): “Any other information that the Division deems pertinent to the development of a surface water monitoring system will be required.” The proposed amendments clarify and put into rule what is currently being required for surface water monitoring by permit condition or in practice. The proposed ending paragraph of Rule .1623(b)(3)(B) refers to the requirement that facilities comply with the groundwater standards in 15A NCAC 02B, which is required even in the absence of these rules.

(b) Costs/Benefits by Entity
(1) Private Industry and Local Government-Owned Facilities

The proposed amendments are not expected to incur additional costs for private industry or local-government owned facilities since these facilities were already required to conduct surface water monitoring in accordance with Rule .0602, the monitoring plans that were incorporated into their permits, and 15A NCAC 02B. The proposed amendments provide a benefit by giving clarification to the somewhat vague requirements in existing rule.

(2) State Government
The proposed amendments are not expected to require expenditure of state funds, or effect staff time since they are putting into rule what is currently done by permit condition or plan requirement, or in practice. The proposed amendments are a benefit to state government employees by providing clarification for staff in reviewing and issuing permits. They also make surface water monitoring requirements consistent between all MSWLFs, and consistent with C&DLFs.

Explosive Gas Monitoring for C&DLFs in Rule .0544(d) and MSWLFs in Rule .1626(4)

(a) Description and Rationale:
Proposed amendments to Rules .0544(d) and .1626(4) clarify the requirements for monitoring of explosive gases. Existing Rule .0544(d) establishes requirements for concentrations of methane or other explosive gases in landfill gas at C&DLFs. Existing rule also requires that monitoring be conducted quarterly for methane, but the rule is unclear about the monitoring frequency requirements for other explosive gases. The Division currently requires C&DLFs to monitor landfill gas for hydrogen sulfide concentrations because C&DLFs accept a larger proportion of wallboard than other types of landfills, and the decomposition of wallboard will produce hydrogen sulfide in a landfill environment. The amendments clarify that the requirements in Subparagraphs (1) and (3) apply to explosive gases in general, since methane is an explosive gas and there is no need to state this gas specifically here. The amendments to Subparagraph (2) clarify that monitoring for other explosive gases such as hydrogen sulfide shall also be quarterly, and that the Division will provide notice of the requirements to the facility in writing.

Existing Rule .0544(d)(1)(C) also states that the owner or operator shall ensure that the facility does not release methane gas or other explosive gases in any concentration that can be detected in offsite structures. The regulated community expressed concern that this language was unclear on whether the facility is required to conduct regular monitoring of offsite structures to ensure that explosive gas is not present. This existing language is proposed to be removed, and Rule .0544(d)(3)(A) is proposed for amendment to clarify that monitoring of explosive gas in onsite structures is one example of an activity that the Division may require for the protection of public health if an explosive gas is detected on site at the C&DLF at a level in exceedance of the levels specified in Rule .0544(d)(1), which is meant only to clarify the true intent of the existing language that is being removed.

While the similar section of explosive gas monitoring requirements for MSWLFs in Rule .1626(4) does not include any language regarding the monitoring of landfill gas in offsite structures, the language is Rule .1626(4)(c)(i) is proposed to be amended to be consistent

with Rule .0544(d)(3)(A) by adding the same example of an activity that the Division may require for the protection of human health.

Existing Rule .1626(4) establishes requirements for concentrations of methane in landfill gas at MSWLFs. Existing rule also requires that monitoring be conducted quarterly for methane. The amendments to this rule revise the landfill gas monitoring requirements for MSWLFs to make the language consistent with and equivalent to the existing and proposed requirements for C&DLFs. The amendments change the wording of Rule .1646(4)(a) and (c) to say “explosive gases” instead of “methane.” The requirement in existing Rule .1646(4)(b) to monitor landfill gas quarterly for methane remains unchanged (only reworded), but the amendments add language that allows the Division to require quarterly monitoring for other explosive gases such as hydrogen sulfide if it is necessary to determine compliance with the explosive gas concentration limits in Rule .1646(4)(a).

At MSWLFs, the Division currently does not require monitoring for any explosive gases except for methane, and does not intend to begin requiring monitoring for other explosive gases at MSWLFs, unless there is reason to believe that the facility is producing another explosive gas at elevated concentrations. MSWLFs are not generally expected to produce hydrogen sulfide gas at the higher levels produced by C&DLFs, and the risks of release at MSWLFs are lower due to more stringent landfill construction and liners. However, in the future the Division may need to require monitoring for hydrogen sulfide at certain individual landfills based on the waste received at that landfill (if the MSWLF receives larger than average amounts of wallboard or other substances that may produce hydrogen sulfide), or if there is reason to suspect higher production and/or release of hydrogen sulfide, if for example, hydrogen sulfide odors are discovered during a facility inspection, or as a result of a complaint in nearby off-site structures.

(b) Costs/Benefits by Entity

(1) Private Industry and Local Government-Owned Facilities

The requirements in the proposed amendments are not expected to add any additional costs to private industry or local governments that own or operate C&DLFs because the existing rules establish limits for concentrations and requirements for corrective action for other explosive gases, and the rule change only clarifies that the monitoring frequency shall be quarterly, the same as monitoring for methane. C&DLFs have been monitoring for hydrogen sulfide for approximately 10 years. No C&DLFs have had hydrogen sulfide concentrations detected between the lower and upper explosive limits, and therefore none have been required to take corrective measures for hydrogen sulfide, and this is not expected to change in the near future. The proposed amendments to clarify requirements for monitoring of explosive gases in offsite structures provide a benefit to private industry and local governments that own or operate C&DLFs because they clarify that this type of monitoring would only be required if an exceedance is detected, and would not be required on a regular basis, to better reflect the intent of the requirement in existing language and what is required in practice.

The requirements in the proposed amendments regarding hydrogen sulfide monitoring are not expected to add any additional costs to private industry or local governments that

own or operate MSWLFs because, as stated above, the Division at this time does not intend to require routine monitoring of hydrogen sulfide at MSWLFs since it is not expected to be present at explosive levels in general at these facilities; and would only impose this requirement if there was reason to suspect that an individual facility or landfill unit may be releasing this gas in elevated concentrations to determine if those concentrations do not meet the limits required in Subparagraph (d)(1). The proposed amendments to clarify requirements for monitoring of explosive gases in offsite structures provide a benefit to private industry and local governments that own or operate MSWLFs because they provide an example of a type of action that may be required for the protection of human health if an exceedance is detected, to better reflect what is required in practice.

If the Division were to require an individual MSWLF to begin monitoring landfill gas for hydrogen sulfide, it is possible that the gas meter used or rented by the MSWLF to monitor methane during each monitoring event is also capable of monitoring for hydrogen sulfide. If this is not the case, the MSWLF or their consultant would be able to rent such a meter for each event at an estimated cost of $100.00 to $200.00 per day. The annual cost for this rental for quarterly monitoring for hydrogen sulfide at a landfill, if it was required, would be $400.00 to $800.00, if it were necessary. Also, if the MSWLF unit were located at the same facility as a C&DLF unit, where monitoring for hydrogen sulfide is already required, and the gas monitoring could be done concurrently with the C&DLF unit, then the addition of hydrogen sulfide would not impose additional costs for the meter.

The amendments regarding hydrogen sulfide monitoring and monitoring of offsite structures would also provide a benefit to private industry and local government-owned facilities since they would allow the facility to plan for and implement protective measures for facility staff, state government staff, and the public in surrounding communities to prevent explosions if the gases were found at explosive levels.

(2) State Government
Proposed amendments regarding hydrogen sulfide monitoring are not expected to affect expenditures or revenues of the state government. Management and administrative time for reviewing landfill gas monitoring reports, including reports for hydrogen sulfide monitoring at C&DLFs, is already part of the normal workload for staff hydrogeologists in the Division, and the Division does not intend to begin requiring routine monitoring of hydrogen sulfide at MSWLFs. The Division does not expect that additional time would be needed for compliance or enforcement for exceedances or hydrogen sulfide, since none have been reported to date. The proposed amendments regarding monitoring of explosive gases in offsite structures are not expected to affect expenditures or revenues of the state government since they are for clarification to reflect what is required or expected in practice.

(3) Public Health and the Environment
The amendments regarding hydrogen sulfide monitoring and monitoring of offsite structures would provide a benefit to public health and safety since they would allow the facility to plan for and implement protective measures for facility staff, state government

staff, and the public in surrounding communities to prevent explosions if the gases were found at explosive levels.

Corrective Action Program Implementation for C&DLFs in Rule .0545(j) and for MSWLFs in Rule .1637(b)

(a) Description and Rationale:
Proposed amendments to Rules .0545(j) and .1637(b) clarify and add to the requirement in existing Rules .0545(i)(1)(B) for CDLFs and .1637(a)(1)(B) for MSWLFs that facilities implementing a corrective action plan include a monitoring program that indicates the effectiveness of the corrective action remedy. The proposed amendments in each Rule, respectively, includes specific requirements on how this requirement shall be met and the frequency of reporting on the effectiveness of the corrective action remedy. The proposed amendments clarify and put into rule the specific requirements of the general policy guidance and practices currently in use by the Division to meet the intent of the existing rule language in Rules .0545(i)(1)(B) for CDLFs and .1637(a)(1)(B) for MSWLFs.

Currently, there are 17 facilities that are in corrective action and are required to report on corrective action remedy effectiveness: The 17 include three stand-alone CDLFs subject to the .0545 Rule; and 13 C&DLFs over MSWLFs and one stand-alone MSWLFs subject to the .1637 Rule. The Division's best estimate to produce the corrective action evaluation report ranges from $2,400-$3,000 for each report (using an average billing rate of $100/hour for a professional engineer or geologist at an estimated 24-30 hours, plus administrative costs). The Division estimates the number of facilities subject to corrective action under Rules .0545 or .1637 to remain low due to low probabilities of leachate release to groundwater from current landfills designed to more stringent standards and under better construction practices. The total annual impact to 31 existing facilities in corrective action is estimated at $14,880 to $18,600.

(b) Costs/Benefits by Entity
(1) Private Industry and Local Government-Owned Facilities
The requirements in the proposed amendments are not expected to add any additional costs to private industry or local governments. Benefits include having the rule spell out specifics on reporting requirements and frequency of reporting to allow ineffective measures to be quickly identified and revised. As discussed above, only four landfill facilities are currently in corrective action and would be directly impacted by the amendments, with the expectation that the overall number of facilities subject to corrective action would remain low.

(2) State Government
Proposed amendments are not expected to affect expenditures or revenues of the state government. Management and administrative time for reviewing the effectiveness of the corrective action program and corrective action evaluation reports is already part of the normal workload for staff hydrogeologists in the Division.

Benefits include clarity on reporting requirements and frequency of reporting on

demonstrating the effectiveness of the corrective action program to meet the intent of the existing rule language in Rules .0545(i)(1)(B) for CDLFs and .1637(a)(1)(B) for MSWLFs, and to allow ineffective measures to be quickly identified and revised.

(3) Public Health and the Environment
The proposed amendment provides a benefit to public health and the environment by assisting Division staff and the regulated community with ensuring that corrective measures are effectively protecting or providing a remedy for groundwater contamination for the protection of human health and the environment.

Conclusion

- The proposed rule amendments may minimally affect the expenditures of private industries that are the owners/operators of C&DLF or MSWLF facilities.
- The proposed rule amendments may minimally affect the expenditures of local governments that are the owners/operators of C&DLF or MSWLF facilities.
- The proposed rule amendments are not expected to affect the expenditure or distribution of State funds subject to the State Budget Act.
- The proposed rule amendments are not expected to have an annual aggregate impact to the affected parties of greater than or equal to $1 million.
- The proposed rule amendments are not expected to impact risks to NC citizens and the environment. Regulatory compliance and monitoring of facilities will not change and will continue to be enforced by the Division through annual inspections and review of annual facility reports.
- The proposed rule amendments are not expected to affect federal program approval for MSWLFs as the amendments to 15A NCAC 13B Section .1600 do not cause any requirements to be less stringent than the federal requirements.

APPENDIX

15A NCAC 13B .0531 is proposed for readoption with substantive changes as follows:

CONSTRUCTION AND DEMOLITION DEBRIS LANDFILLS

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

(a) Purpose. ~~The purpose of~~ Rules .0531 through ~~.0547~~ .0546 of this Section ~~is to regulate~~ shall govern the permitting procedures, siting, design, construction, performance standards, operation, ~~closure~~ 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.~~

(b)~~(c)~~ Applicability. Owners and operators of C&DLF facilities and units ~~must~~ shall conform to the requirements of Rules .0531 through ~~.0547~~ .0546 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.~~

(1)~~(2)~~ C&DLF units that did not receive waste after June 30, 2008 are exempt from Rules .0531 through .0546 of this Section and shall comply with the Conditions of the Solid Waste Permit and Rule .0510 of this Section. ~~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).~~

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

(3) C&DLF units permitted to operate prior to January 1, 2007 that continued to receive waste after June 30, 2008 shall comply with Rules .0531 through .0546 of this Section, except that C&DLF units on top of closed MSWLFs are subject to the corrective action requirements of Rules .1635, .1636, and .1637 of this Subchapter, and the closure and post-closure requirements of Rule .1627 of this Subchapter.

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

(e) Incorporation by Reference. References to Title 40 of the U.S. Code of Federal Regulations (CFR) in Rules .0531 through .0546 of this Section are incorporated by reference including subsequent amendments or editions, and can be obtained free of charge at the US Government Publishing Office website at **www.ecfr.gov**.

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0532 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0532 DEFINITIONS FOR C&DLF FACILITIES

The definitions in Article 9 of Chapter 130A of the General Statutes, the definitions in Rule .0101 of this Subchapter, and the following definitions shall apply to Rules .0531 through .0546 of this Section. ~~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.~~

(1)~~(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.

(2)~~(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.

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

(4)~~(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)~~ 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,~~ may include landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall.

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

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

(7)~~(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~~ may include municipal and industrial wastes that are identical to materials generated from the construction, remodeling, repair, or demolition operations on pavement and buildings or structures. ~~may be generated by the on-going operations at buildings or structures.~~

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

~~(10) "Hazardous Waste" means a solid waste as defined in G.S.130A-290 (a)(8). "Hazardous Waste" does not include those solid wastes excluded from regulation pursuant to 40 CFR 261.4, incorporated by reference in 15A NCAC 13A .0106. "Hazardous Waste" does include hazardous waste generated by conditionally exempt small quantity generators as defined in 40 CFR 261.5, incorporated by reference in 15A NCAC 13A .0106.~~

~~(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.~~

(9)~~(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 may ~~include, but are not limited to,~~ include sinkholes, sinking streams, caves, large springs, and blind valleys.

(10)~~(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 permit issued in accordance with this Section. ~~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.~~

(11)~~(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.~~257.2. Such a landfill unit may be publicly or privately owned, and may be located at a municipal solid waste landfill facility, ~~MSWLF,~~ a C&DLF, an industrial landfill facility, or other waste management facility.

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

(13)~~(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.

(14)~~(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.~~ EPA SW-846 Test Method 9095B (Paint Filter Liquids Test), which is incorporated by reference including subsequent amendments or editions; and can be obtained free of charge at the US EPA website at www.epa.gov/hw-sw846/sw-846-test-method-9095b-paint-filter-liquids-test.

~~(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.~~

(15)~~(20)~~ "Poor foundation conditions" means those areas where features exist ~~which~~ that indicate that a natural or man-induced event may result in ~~inadequate~~ a loss or reduction of 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.~~

(16)~~(22)~~ "Project engineer" means ~~the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who~~ the licensed professional engineer that represents the permittee and 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 associated plans and ~~the rules~~ Rules .0531 through .0546 of ~~specified in~~ this Section. All certifications ~~must~~ shall bear the seal and signature of the licensed 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.~~

(17) "Seasonal High Water Table" or "SHWT " means the highest level of the uppermost aquifer 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.

(18)~~(26)~~ "Structural components" means liners, leachate collection systems, final covers, systems that manage rainwater that drains over land from or onto any part of the facility or unit ~~run-on or run-off systems,~~ and any other component used in the construction and operation of the C&DLF facility. ~~C&DLF that is necessary for protection of human health and the environment.~~

(19)~~(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~~ may include poor foundation conditions, areas susceptible to mass movements, and Karst terranes.

(20)~~(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.~~

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

Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0533 is proposed for readoption with substantive changes as follows:

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 following criteria and scheduling requirements: ~~requirements set forth as follows:~~

(1) New permit.~~facility.~~ An applicant for a new permit as defined by G.S. 130A-294(a3)(1) ~~Owners or operators proposing to establish a C&DLF facility or unit in accordance with the following criteria~~ shall submit a ~~Site Study~~ site study and subsequently an application for a permit to construct as set forth in Rule .0535(a) ~~Paragraph (a) of Rule .0535~~ of this Section. ~~A new facility permit application is required when:~~ The Division shall review all permit applications in accordance with Rule .0203 of this Subchapter. An application for a new permit is subject to an application fee in accordance with G.S. 130A-295.8(d2).

~~(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. The owner or operator shall submit an application to amend the permit to construct in accordance with Rule .0535(c) of this Section for the following circumstances:

~~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) A subsequent stage of landfill development. A permit to construct issued in accordance with Paragraph (c) of this Rule approves the life-of-site development of the C&DLF unit indicated in the facility plan plus a set of plans defined in Rule .0534(b)(1) of this Section as the Division Approved Plans, submitted by the applicant for either the entire C&DLF unit or a portion of the C&DLF unit. ~~A facility plan for the life of the C&DLF facility and a set of plans for the initial phase of landfill development.~~ For any subsequent stage of landfill development, that the applicant has not included in the plans required by Rule .0534(b)(1) of this Section for any prior stage of landfill development, the ~~The~~ owner or operator shall ~~prepare an application to in accordance with Paragraph (c) of Rule .0535 of~~

~~this Section and~~ submit the amended permit application no less than 180 days prior to the date scheduled for commencing construction. ~~when there is:~~

~~(A) a substantial change in accordance with N.C.G.S. 130A-294 (b1)(1); or~~

(B) ~~a proposed transfer of~~ A change in ownership or corporate structure of a permitted ~~the~~ C&DLF facility. The owner or operator shall notify the Division within 30 days of a change in ownership or corporate structure in accordance with G.S. 130A-295.2(g).

(3)~~(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~~ Rule .0535(d) of this Section.

(4) Permit for Closure and Post-Closure Care. The owner or operator shall submit an application for a closure and post-closure care permit to the Division when the facility reaches its final permitted elevations and prior to initiating closure activities for the final permitted C&DLF unit at the facility in accordance with Rule .0535(e) of this Section. Owners or operators that closed all C&DLF units at the facility prior to the readopted effective date of this Rule shall not be required to submit a permit application for closure and post-closure. The Division shall issue a permit for closure and post-closure for these facilities based on the most recent permit application submittal, if a closure and post-closure permit has not already been issued.

(b) Application format requirements. ~~guidelines.~~ All applications and plans required by Rules .0531 through ~~.0547~~ .0546 of this Section shall be prepared in accordance with the following:~~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~~ signature, and seal; ~~and~~

(B) contain a statement defining the purpose of the submittal signed and dated by the applicant; ~~applicant.~~

~~(2) The text of the application shall:~~

~~(A) be submitted in a three ring binder;~~

(C)~~(B)~~ contain a table of contents or index outlining the body of the application and the appendices;

(D)~~(C)~~ be paginated consecutively; and

(E)~~(D)~~ identify any revised text by noting the date of revision on the page.

(2)~~(3)~~ Drawings. The engineering drawings for all landfill facilities shall be submitted using the following ~~format.~~ format:

~~(A) The sheet size with title blocks shall be at least 22 inches by 34 inches.~~

(A)~~(B)~~ ~~The~~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.~~ seal; and

(B)~~(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 requirements, ~~requirement(s).~~ and that is legible if printed at a scale of 22 inches by 34 inches.

(3)~~(4)~~ Number of copies. An applicant shall submit ~~a minimum of three copies~~ one electronic copy of ~~each original~~ the application to the Division in electronic portable document format (pdf). The Division may request that the applicant submit no more than three paper copies of the application in three-ring binders. ~~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~~ 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 new permit ~~Permit to Construct for a new facility, for a substantial amendment to the permit for an existing facility,~~ as defined in G.S. 130A-294(a3)(1), or for a modification to the permit involving corrective remedy selection required by ~~Paragraphs (d) through (h) of Rule .0545~~ Rule .0545(g) through (l) of this Section shall be subject to the requirements of this Paragraph.~~Subparagraphs (c)(2) through (c)(9) of this Rule.~~ Applications submitted in accordance with Subparagraphs ~~(a)(2) and (a)(4)~~ (a)(2), (a)(3), and (a)(4) of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.

(A) The Division shall review all permit applications for compliance with Rules .0531 through .0546 of this Section and Rule .0203 of this Subchapter. Once an application is complete, the Division shall either issue a notice of intent to deny the permit to the applicant or prepare a draft permit. ~~decide whether the permit should be issued or denied.~~

(B) If the Division ~~decides to deny the permit, the Division shall send~~ issues a notice of intent to deny the permit to the ~~applicant. Reasons~~ applicant, the notice shall include the reasons for permit denial ~~shall be~~ in accordance with Rule .0203(e) of this ~~Subchapter.~~ Subchapter and G.S. 130A-294(a)(4)c.

~~(C) If the Division decides the permit should be issued, the Division shall prepare a draft permit.~~

(C)~~(D)~~ If the Division prepares a draft permit, ~~A~~ the draft permit shall contain ~~(either expressly or by reference)~~ all applicable terms and conditions for the permit.

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

(3) Fact Sheet. The Division shall prepare a fact sheet for every draft permit, and shall send this fact sheet to the applicant and post the fact sheet on the Division website. The fact sheet shall include:

(A) a brief description of the type of facility or activity that is the subject of the draft permit;

(B) a description of the area to be served, the volume and characteristics of the waste stream, and a projection of the useful life of the landfill;

(C) a brief summary of the basis for the draft permit conditions, including references to statutory or regulatory provisions and supporting references to the permit application;

(D) the beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph;

(E) the address where comments will be received;

(F) the name, phone number, and e-mail address of a person to contact for additional information;

(G) the procedures for requesting a public hearing; and

(H) other procedures by which the public may participate in the decision, such as social media or a web-based meeting, if the Division or the applicant elects to use such procedures.

~~(A) The Division shall prepare a fact sheet for every draft permit.~~

~~(B) 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.~~

~~(C) 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.~~

(4) Public Notice of Permit Actions and Public Hearings.

(A) 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.

(B) No public notice is required when a request for a permit modification is denied.

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

(D) Public notices may describe more than one permit or permit action.

(E) 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.

(F) The Division shall give public notice of a public hearing at least 15 days before the ~~hearing.~~ hearing; and the notice 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 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.

(G) Public notice of activities described in Part (A) of this Subparagraph shall be given by publication on the Division website, ~~by~~ publication by a local news organization, ~~in a daily or weekly local newspaper of general circulation,~~ and by any other method deemed necessary or appropriate by the ~~Division~~ Division, such as posting in the post office and public places of the municipalities nearest the site under consideration, or on other State or local government websites or social media, to give actual notice of the activities to persons potentially affected.

(H) ~~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)~~ the 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)~~ the name, address, and telephone number of ~~a~~ Division ~~staff~~ contact from whom interested persons may obtain further information; and ~~(6)~~ a description of the time frame and procedure for making an approval or disapproval decision of the application. ~~application; and (7) any additional information considered necessary or proper as required by the Division.~~

~~(I) 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.~~

(5) 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.

(6) 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 Division shall extend 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~~ Division 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~~commenters 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. The Division shall publish the end date of the extended comment period on the Division's website.

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

(7) Reopening of the Public Comment Period.

(A) ~~If any~~ In response to data, information, or arguments ~~submitted~~ received during the public comment period,~~period appear to raise substantial new questions concerning a permit action,~~ the Division may prepare a ~~new~~ revised draft permit ~~permit, appropriately modified,~~ under Subparagraph (2) of this Paragraph; prepare a ~~fact sheet or~~ revised fact sheet under Subparagraph (3) of this ~~Paragraph~~ Paragraph, and reopen or extend the comment period under Subparagraph (4) of this Paragraph. ~~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.~~ information that was revised in the draft permit following the original comment period. The public notice shall be in accordance with ~~under~~ Subparagraph (4) of this Paragraph and 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.~~

(8) 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~~ 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.

(9) 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 pertaining to the requirements in ~~on~~ the draft permit raised during the public comment period, or during any public hearing.

(B) The Division shall publish the ~~make the~~ response to comments on the Division website upon request. ~~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 this Subchapter. ~~Section .0200 – PERMITS FOR SOLID WASTE MANAGEMENT FACILITIES.~~

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0534 is proposed for readoption with substantive changes as follows:

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.~~ Plans. Permits issued after December 31, 2006 ~~must~~ shall incorporate ~~a~~ the Division approved ~~plan.~~plans.

(A) The scope of the Division approved ~~plan must~~ plans shall include the information necessary to comply with the requirements set forth in Rule .0535 of this Section.

(B) The Division approved plans ~~must~~ shall be subject to and may be limited by the conditions of the permit.

(C) The Division approved plans for a new facility ~~must~~ shall be described in the permit and ~~must~~ shall include the Facility ~~Plan,~~ Plan required by Rule .0537 of this Section, Engineering ~~Plan,~~ Plan required by Rule .0539 of this Section, Construction Quality Assurance ~~plan,~~ Plan required by Rule .0541 of this Section, Operation ~~Plan,~~ Plan required by Rule .0542 of this Section, Closure and Post-Closure ~~plan,~~ Plan required by Rule .0543 of this Section, and Monitoring ~~Plans,~~ Plans required by Rule .0544 of this Section.

(2) Permit provisions. All C&DLF facilities and units ~~must~~ shall conform to the specific conditions set forth in the permit and the following general provisions.

(A) Duty to Comply. The permittee ~~must~~ shall 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~~ modification, or suspension.

(B) Duty to Mitigate. In the event of noncompliance with the permit, the permittee ~~must~~ shall take all reasonable steps to minimize releases to the environment, and ~~must~~ 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 ~~must~~ shall 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~~ shall 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~~ shall 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~~ 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.~~ A permit for a solid waste management facility is transferable only with prior approval of the Department in accordance with G.S. 130A-294(a1).

(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,~~ permit to construct, 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.

(I) Proper Operation and Maintenance. The permittee ~~must~~ shall at all times ~~properly~~ operate and maintain all facilities and systems of treatment and control and related appurtenances~~(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.

(J) Inspection and Entry. The permittee ~~must~~ shall allow the Department ~~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 Department ~~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~~ shall allow the Department ~~Division or its authorized representative~~ to inspect any facilities, equipment including practices, operations, or ~~(including~~ monitoring and control equipment ~~equipment), practices or operations~~ that are required or regulated by the facility permit or the rules of this Subchapter. ~~Division.~~ For the purposes of assuring permit compliance or as otherwise authorized by G.S. 130A Article 9,~~the Act,~~ the permittee ~~must~~ shall allow the Department ~~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,~~ wastes, leachate, soil, groundwater, surface water, ~~gases~~ gases, or gas condensates, or ambient ~~air.~~ air, if the Department gives notice to the permittee 24

hours prior to sampling or monitoring. The permittee ~~must~~ shall allow the Department ~~Division or its authorized representative~~ to take photographs for ~~the purpose of~~ documenting items of compliance or noncompliance at permitted facilities. ~~facilities, or where appropriate to protect legitimate proprietary interests, require the permittee to~~ At the request of the Department, the permittee shall take such photographs and submit them to the Department. ~~for the Division.~~

(K) 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~~ if they are necessary ~~in order~~ to protect the public health and the environment or to ensure proper landfill operation.

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

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0535 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0535 APPLICATION REQUIREMENTS FOR C&DLF FACILITIES

(a) New permit as defined in G.S. 130A-294(a3)(1)a, c, d, and e. ~~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:~~ An applicant for a new C&DLF permit as defined in in G.S. 130A-294(a3)(1)a, c, d, or e shall meet the requirements of Rule .0536 of this Section prior to submitting an application for a permit to construct.

(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~~ shall 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.~~ Rule .0544 of this Section; and

(G) a corporate ownership organization chart and an environmental compliance history for the applicant in accordance with G.S. 130A-295.3.

(2) Permit to Operate. The owner and operator ~~must~~ shall 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) New permit as defined in G.S.130A-294(a3)(1)b. An application for a new C&DLF permit as defined in G.S.130A-294(a3)(1)b shall contain:

(1) a facility plan that describes the comprehensive development of the C&DLF facility prepared in accordance with Rule .0537 of this Section;

(2) local government approval in accordance with Rule .0536(c)(11) of this Section; and

(3) a corporate ownership organization chart and an environmental compliance history for the applicant in accordance with G.S. 130A-295.3.

(c)~~(b)~~ Amendment to the permit. ~~A complete~~ An application for an amendment to the permit ~~must~~ shall contain:

(1) 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.~~ Section; and

(6) an updated corporate ownership organization chart and an updated environmental compliance history for the applicant in accordance with G.S. 130A-295.3.

~~(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 Rules .0531 through .0546 of this Section. A complete application ~~must~~ shall identify the requirement(s) proposed for modification and provide ~~sufficient~~ information ~~in order to demonstrate~~ that demonstrates compliance with ~~the applicable requirements~~ Rules .0531 through .0546 of this Section.

(e) A permit for closure and post-closure. An application for closure and post-closure permit shall contain:

(1) 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 closure plan and updated post-closure plan prepared in accordance with Rule .0543 of this Section; and

(4) an updated corporate ownership organization chart for the applicant.

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0536 is proposed for readoption with substantive changes as follows:

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~~ shall prepare a site study ~~which~~ that 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 for establishing a C&DLF unit and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .0535 of this Section; and the site-specific conditions and design requirements stated in the notification, if any; 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~~ shall be the land ~~which~~ that is proposed for the landfill facility. The site study shall present ~~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 shall include ~~includes~~ criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site ~~is~~ shall not be within the scope of this study. The information in the site study ~~must~~ shall accurately represent site characteristics ~~and~~ and, if required by G.S. 89C, 89E, or 89F and not under the purview of another licensed profession, ~~must~~ shall be prepared by licensed professional engineers, licensed geologists, licensed soil scientists, or licensed professional land surveyors. ~~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~~ shall comply with the location restrictions ~~siting criteria~~ set forth in Subparagraphs (c)(4) through (c)(10) of this Rule. ~~Paragraph (c) of this Rule, Subparagraphs (4) through (10).~~ ~~In order to~~ 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~~ shall be addressed in the site study.

(c) The site study prepared for a C&DLF facility ~~must~~ shall 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~~ shall include an aerial photograph taken within one year of the ~~original submittal date,~~ date the site study is submitted to the Division, a report, and a local map. The map and photograph ~~must~~ shall be at a scale of at least one inch equals 400 feet. The study ~~must~~ shall 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~~ shall be prepared which includes the drawings and reports described in ~~Subparagraphs (d)(1), (e)(1), (e)(2), and (e)(3) of~~ Rule ~~.0537~~ .0537(d)(1), (e)(1), (e)(2), and (e)(3) of this Section.

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

(4) Floodplain Location ~~Restrictions;~~ Restrictions.

(A) C&DLF units or constructed embankments used to construct a C&DLF unit ~~must~~ shall 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~~ shall 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~~ the carrying away of solid waste ~~so as to pose~~ by flood waters. ~~a hazard to human health and the environment.~~

(C) C&DLF units shall meet the floodplain restrictions of G.S.130A-295.6(c)(1) in accordance with the effective date and applicability requirements of S.L. 2007-550.

(5) Wetlands Location Restriction. For purposes of this Rule, wetlands shall mean the areas defined in 40 CFR 232.2. C&DLF units shall meet the wetland location restrictions of G.S.130A-295.6(c)(2) in accordance with the effective date and applicability requirements of S.L. 2007-550. ~~New~~ C&DLF units exempt from G.S.130A-295.6(c)(2) ~~and lateral expansions must~~ shall not be located in wetlands, unless the owner or operator demonstrates the following for Division approval. ~~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~~ shall 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 ~~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~~ shall 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 Parts (5)(A) through (5)(D) of this Paragraph, ~~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~~ shall 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~~ shall 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~~ shall consider the following ~~factors, at a minimum,~~ factors when determining whether an area is unstable:

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

(B) ~~On-site~~ on-site or local geologic or geomorphologic features; and

(C) ~~On-site~~ 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~~ shall not damage or destroy a property of archaeological or historical significance which has been listed ~~or determined eligible for a listing in~~ on the National Register of Historic ~~Places.~~ Places or included on the Study List for the Register. To ~~aid in making~~ make a determination as to whether the property is of archeological or historical significance, the State's Historic Preservation Office in the Department of Natural and Cultural Resources may request that the owner and operator ~~to~~ perform a site-specific survey that shall~~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~~ shall not have an adverse impact, considering the purposes for designation of the Preserve lands and the location, access, ~~size~~ size and operation of the landfill, on any lands included in the State Nature and Historic Preserve.

(9) Water Supply Watersheds Location ~~Restrictions;~~ Restrictions.

(A) A ~~new~~ C&DLF unit ~~or lateral expansion must~~ 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, 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.~~.0200 entitled "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."~~

(B) Any ~~new~~ C&DLF unit ~~or lateral expansion, which~~ that proposes to discharge leachate to surface waters ~~and must~~ shall obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Division of Environmental Quality~~Management~~ pursuant to Section 402 of the United States Clean Water Act, ~~must~~ and shall 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~~ 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.

(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~~ shall 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~~ shall obtain a franchise in accordance with G.S 130A-294(b1)~~130A-294(b1)(3)~~ from each unit of local government in whose jurisdiction the site is located. A copy of the franchise ~~must~~ shall 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~~ 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 serving the county. Public notice ~~must~~ shall 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~~ shall be placed at a location that is accessible by the public. This location ~~must~~ shall be noted in the public notice. The permit applicant ~~must~~ shall 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~~ shall give the date, ~~time~~ time, and place of the public meeting, and ~~must~~ shall 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~~ shall be postmarked a minimum of 30 days prior to the public meeting which is being noticed. The applicant ~~must~~ shall provide documentation of the content and mailing of the notices in the site study.

(D) Public notice of the meeting ~~must~~ 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 ~~must~~ shall 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~~ shall 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.~~

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

Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0537 is proposed for readoption with substantive changes as follows:

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

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

(b) Scope.

(1) The facility plan ~~must~~ shall define the comprehensive development of the property proposed for a permit or described in the permit of an existing facility. The plan ~~must~~ shall include a set of drawings and a report ~~which~~ that 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~~ shall span the active life of the unit(s). Additional solid waste management activities located at the C&DLF facility ~~must~~ shall be identified in the plan and ~~must~~ shall meet the requirements of this Subchapter. The facility plan ~~must~~ shall 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~~ shall 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~~ shall be consistent with the Division's approval ~~set forth~~ in accordance with Rule .0536(a)(1)~~.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~~ shall be used consistently throughout a permit application.

(1) A "phase" is an area constructed that describes ~~provides no more than~~ approximately five years of operating capacity. An applicant may request a permit to construct for any number of phases up to the entire extent of the disposal boundary for the life-of-site.

(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~~ shall include the following drawings:

(1) Site Development. The drawings ~~which~~ that plot site development ~~must~~ shall be prepared on topographic maps representative of existing site conditions; and the maps ~~must~~ shall 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~~ Rule .0540(1) 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~~ development of approximately five years of operating capacity each; ~~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~~ .0536(c) of this Section.

(2) Landfill Operation. The following information related to the long-term operation of the C&DLF unit ~~must~~ shall 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.

(3) Survey. A survey locating all property boundaries for the proposed landfill facility certified by a licensed professional land surveyor if required by G.S. 89C.~~an individual licensed to practice land surveying in the State of North Carolina.~~

(e) Facility Report. The facility plan ~~must~~ 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 ~~must~~ shall 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~~ .0536(c)(11) 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~~ shall be performed.

(A) The data and assumptions used in the analysis ~~must~~ shall 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~~ shall 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 required in accordance with the effective date and applicability set forth in S.L. 2007-550 or 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~~ shall be

described. Normal operating conditions ~~must~~ shall be defined. A contingency plan ~~must~~ shall 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~~ shall be provided.

(C) Base liner systems, if required in accordance with the effective date and applicability set forth in S.L. 2007-550 or if proposed by the applicant, ~~applicant must~~ shall be described.

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

(4) Traffic study. A traffic study and NC Department of Transportation certification shall be prepared as required by G.S. 130A-295.5 and in accordance with the effective date and applicability set forth in S.L. 2007-550.

(5) Study of Environmental Impacts. A study of environmental impacts shall be conducted as required by G.S. 130A-295.6(a).

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0538 is proposed for readoption with substantive changes as follows:

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

(a) Site Hydrogeologic Report. In accordance with Rule .0536(c)(3) of this Section, a ~~A~~ permit applicant ~~must~~ shall conduct a hydrogeologic investigation and prepare a report. An investigation ~~is required to~~ shall 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~~ groundwater flow paths and rates for the uppermost aquifer. The report ~~must~~ shall provide an understanding of the relationship of the site ~~ground-water~~ groundwater flow regime to local and regional hydrogeologic features with special emphasis on the relationship of C&DLF units to ~~ground-water~~ groundwater receptors (especially drinking water wells) and to ~~ground-water~~ groundwater discharge features. Additionally, the scope of the investigation ~~must~~ shall include the general geologic information necessary to address compliance with the ~~pertinent~~ location restrictions described in Rule ~~.0536~~ .0536(c)(4) through (c)(10) of this Section. The Site Hydrogeologic Report ~~must provide, at a minimum,~~ shall provide 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~~ shall 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,~~ outcrops ~~(including~~ including trends in strike and dip,~~dip),~~ and other features that may affect site suitability or the ability to effectively monitor the site; and

(B) ~~ground-water~~ groundwater 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~~ groundwater discharge feature(s), additional borings, ~~geophysics~~ geophysical surveys, or other hydrogeological investigations ~~may~~ shall be required to characterize the nature and extent of groundwater flow; and

(C) the hydrogeological properties of the bedrock, if the water table of the uppermost aquifer ~~ground-water flow~~ is ~~predominantly~~ in the bedrock. ~~Bedrock for~~ For the purpose of this ~~rule is defined as~~ Rule, bedrock means 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~~ groundwater 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~~ There shall be no less than ~~be~~ an average of one boring for each 10 acres of the proposed landfill ~~facility unless otherwise authorized by the Division.~~ facility. All borings intersecting the water table ~~must~~ shall be converted

to piezometers or monitoring wells in accordance with 15A NCAC 02C .0108. Boring logs, field logs and notes, and well construction records for all onsite borings, wells, and piezometers shall be placed in the operating record, and shall also be provided to the Division upon request. Field logs and notes shall be legible; and may be typewritten.

(4) A testing program for the borings ~~which~~ that describes the frequency, distribution, and type of samples taken and the methods of ~~analysis~~ analysis, such as ASTM Standards provided at https://www.astm.org, ~~(ASTM Standards or test methods approved by the Division) used to obtain, at a minimum,~~ used to obtain the following information:

(A) standard penetration - resistance ~~(ASTM D 1586);~~ using a method such as ASTM D 1586;

(B) particle size analysis ~~(ASTM D 422);~~ using a method such as ASTM D 6913;

(C) soil classification: Unified Soil Classification System ~~(USCS)~~ using a method such as ASTM D 2487; ~~(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 investigation techniques may be used to ~~investigate~~ obtain an understanding of the subsurface conditions at the site, ~~including but not limited to:~~ including 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~~ borings, measured within a period of time short enough to avoid temporal variations in ~~ground water~~ groundwater flow which could preclude accurate determination of ~~ground water~~ groundwater flow direction and rate;~~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~~ groundwater flow including flow directions, rates, and gradients.

(9) ~~Ground-water~~ Groundwater contour map(s) to show the occurrence and direction of ~~ground-water~~ groundwater flow in the uppermost aquifer and any other aquifers identified in the hydrogeologic investigation. The ~~ground-water~~ groundwater contours ~~must~~ 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~~ groundwater contours ~~must~~ shall be shown on the ~~ground-water~~ groundwater contour map(s).

(10) A topographic map of the site locating soil borings with accurate horizontal and vertical control, which are tied to a permanent onsite benchmark.

(11) Information for public potable wells and public water supply surface water intakes within the site characterization study ~~area,~~ area in accordance with Rule ~~.0536(c)~~ .0536(c)(1) of this ~~Section~~ Section, including:

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

~~(B)~~(A) available information and records for well construction, ~~construction records,~~ number and location served by wells, and production ~~rates,~~ rates for public potable water wells; and

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

(12) 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~~ groundwater discharge features, and ~~ground-water~~ groundwater recharge/discharge areas.

(13) 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,~~ features;

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

(D) a discussion of the ~~ground-water~~ groundwater 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~~ Report. A geological and hydrogeological report shall be included in the engineering plan that is required to be submitted in an application for a Permit to Construct in accordance with Rule .0535(a)(1) of this Section.

(1) ~~A geological and hydrogeological 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 to characterize the geologic and hydrogeologic conditions of the landfill facility ~~must~~ shall be based on the site-specific geologic and hydrogeologic characteristics of the landfill facility, and there shall be no less than ~~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,~~ shall be the area within the landfill unit footprint and the landfill unit compliance boundary, as defined in Rule .0544(b)(1)(B) of this Section, unless otherwise authorized by the Division. The scope and purpose of the investigation ~~is~~ shall be as follows:

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

(B) The investigation shall provide detailed and localized data ~~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).~~ 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,~~ shall provide 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~~ .0544(b) 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~~ .0544(b)(1)(B) of this Section;

(D) for sites located in the piedmont or mountain regions, rock cores of no less than the upper 10 feet of the bedrock ~~(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~~ groundwater flow characteristics of the area of investigation. ~~of at least the upper 10 feet of the bedrock.~~ Testing for the corings ~~must provide, at a minimum,~~ shall provide 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.;~~ patterns;

(E) a ~~ground water~~ groundwater 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~~ groundwater contours;

(F) for sites located in piedmont or mountain regions, 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~~ three-dimensional ~~ground-water~~ groundwater flow net or several hydrogeologic cross-sections that characterize the vertical ~~ground-water~~ groundwater flow regime for this area;

(H) a report on the ~~ground-water~~ groundwater flow regime for the area including ~~ground-water~~ groundwater flow paths for both horizontal and vertical components of ~~ground-water~~ groundwater flow, horizontal and vertical gradients, flow rates, ~~ground-water~~ and groundwater 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~~ shall be used as a basis for this discussion; and

(J) a certification by a ~~Licensed Geologist~~ licensed geologist that all borings that~~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 prior to landfill construction in accordance with the procedures for permanent abandonment of wells as delineated in 15A NCAC 02C .0113. At the time of abandonment, all ~~All~~ piezometers within the landfill unit footprint area ~~must~~ shall be overdrilled to the full depth of the ~~boring,~~ boring or to the top of bedrock, whichever is encountered first, prior to cement or bentonite grout placement. ~~placement, and the~~ The level of the grout within the boring ~~must~~ shall not exceed in height the elevation of the proposed ~~basegrade.~~ base grade.

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0539 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0539 ENGINEERING PLAN FOR C&DLF FACILITIES

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

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

(c) Scope. An engineering plan ~~must~~ shall be prepared for the proposed area ~~a phase~~ of development ~~not to exceed~~ that provides no less than ~~approximately~~ five years of operating capacity and no more than the total facility 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 that ~~which consistently~~ represent the engineering design.

(d) An engineering report ~~must~~ shall 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~~ Rule .0538(b) of this Section.

(e) Engineering drawings ~~must~~ shall illustrate:

(1) existing conditions: site topography, features, existing disposal areas, roads, and buildings;

(2) grading plans: proposed limits of excavation, subgrade elevations, and 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;

(6) vertical separation requirement estimates including:

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

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

(f) The engineering plan ~~must~~ shall also describe and illustrate additional engineering features and details including, ~~if proposed by the applicant,~~ the cap system, leachate collection ~~system~~ system, and base liner system, if present. ~~liner system.~~ A leachate collection system and a liner system shall be required pursuant to G.S. 130A-295.6(e) in accordance with the effective date and applicability set forth in S.L. 2007-550. Cap systems, leachate collection ~~systems~~ systems, leachate storage, and base liner systems ~~must~~ shall be ~~designed~~ in accordance with Rules .1620 and .1621 of this Subchapter.~~NC Solid Waste Management Rules 15A NCAC 13B .1620 and .1621.~~

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0540 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0540 CONSTRUCTION REQUIREMENTS FOR C&DLF FACILITIES

This Rule shall establishestablishes the performance standards and minimum criteria for designing and constructing a C&DLF unit. Additional standards for the cap system are described in Rule .0543 of this Section.

(1) Horizontal separation requirements.

(a) Property line buffer. New C&DLF unit(s) permitted after January 1, 2007 at a new facility must shall have a establish a minimum 200 foot buffer of no less than 200 feet between the C&DLF unit and all property lines for monitoring purposes. Existing operating units must at a minimum shall maintain existing upgradient buffers of 50 feet or more.

(b) Offsite residential structures and wells. All C&DLF units at a new facility must shall have a establish a minimum 500 foot buffer of no less than 500 feet between the C&DLF unit and existing residential structures and wells. wells existing at the time that the Division issues a notification of site suitability in accordance with Rule .0536(a)(1) of this Section.

(c) Surface waters. All C&DLF units at new facilities must shall have a establish a minimum 50 foot buffer of no less than 50 feet between the C&DLF unit and any stream, river, lake, pond pond, or other waters of the state State as defined in G.S. 143-212.

(d) Existing Other landfill units. A monitoring zone buffer must shall be established between a new proposed C&DLF unit and any existing landfill units such as MSW, Industrial, C&DLF, or Land Clearing and Inert Debris (LCID), in order to establish a ground water groundwater monitoring system to allow monitoring of each unit separately as set forth in Rule .0544 of this Section.

(e) Additional requirements for applications submitted on or after August 1, 2007. C&DLF units shall meet the horizontal separation requirements of G.S. 130A-295.6(b) and (d) and shall be in accordance with the effective date and applicability requirements of S.L. 2007-550 and S.L. 2007-543.

(2) Vertical separation requirements.

(a) C&DLF unit(s) must shall be constructed so that the post-settlement bottom elevation of waste is a minimum of no less than four feet above the seasonal high ground water table and the bedrock datum plane contours established in the Design Hydrogeological Report prepared in accordance with Paragraph (b) of Rule .0538(b).0538 of this Section. Lined C&DLFs shall meet the vertical separation requirements of G.S. 130A-295.6(f) in accordance with the effective date and applicability requirements of S.L. 2007-550.

(b) In-situ or modified soils making up the upper two feet of separation as required by Sub-Item (a) of this Item, must shall consist of the following: SC, SM, ML, CL, MH, or CH soils per Unified Soil Classification System or as specified in the approved construction plan.

(3) Survey control.

(a) One permanent benchmark of known elevation measured from a U.S. Geological Survey benchmark ~~must~~ 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. Any survey performed pursuant to this Sub-Item ~~must~~ shall be performed by a licensed professional land surveyor if required by G.S. 89C. ~~Registered Land Surveyor.~~

(b) Latitude and longitude,~~Longitude,~~ expressed in decimal degrees, ~~must~~ shall be indicated at the approximate center of the facility.

(4) Location coordinates. The North Carolina State Plane (NCSP) coordinates ~~must~~ shall be established and one of its points ~~must~~ shall be the benchmark of known NCSP coordinates.

(5) Landfill subgrade. The landfill subgrade is the in-situ or modified soil layer(s), constructed embankments, and select fill providing the foundation for construction of the unit. The landfill subgrade ~~must~~ shall be graded in accordance ~~to the plans and specifications~~ with the engineering plan prepared in accordance to Rule .0539 of this Section, which is ~~are~~ incorporated into the permit to construct in accordance with ~~Paragraph (b) of~~ Rule ~~.0534~~ .0534(b)(1) of this Section as follows:

(a) The owner or operator of the C&DLF unit ~~must~~ shall 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~~ shall notify the Division ~~Division's hydrogeologist~~ via email ~~at least~~ no less than 24 hours before subgrade inspection.

(c) Compliance with the requirements of Sub-Item (2)(b) of this Rule ~~must~~ shall be in accordance with ~~Paragraph (b) of~~ Rule ~~.0538~~ .0538(b) 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~~ shall 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~~ shall be included in the plans prepared in accordance with Rule .0539 of this Section.

(7) Sedimentation and erosion control. ~~Adequate structures~~ Structures and measures ~~must~~ shall be designed and maintained to manage the rainwater that drains over land from or onto any part of the facility or unit ~~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 04C)~~04)~~ and any required NPDES permits.

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

(9) Maximum capacity, disposal area, and height for applications submitted on or after August 2007. Landfills shall meet the requirements of G.S. 130A-295.6(i) regarding maximum allowed capacity, disposal area and height in accordance with the effective date and applicability requirements of S.L. 2007-550.

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0541 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0541 CONSTRUCTION QUALITY ASSURANCE FOR C&DLF FACILITIES

(a) ~~Purpose of the~~ The construction quality control and quality assurance (CQA) ~~plan. The CQA~~ plan ~~must~~ shall 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~~ shall 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~~ shall include: ~~include at a minimum:~~

(1) Responsibilities and authorities. The plan ~~must~~ shall establish responsibilities and authorities for the construction management organization. A pre-construction meeting ~~must~~ shall be conducted prior to beginning construction of the initial ~~cell, or as required by~~ cell unless otherwise indicated in the permit. The meeting ~~must~~ shall 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~~ tests, ~~and equipment~~ equipment, and calibration procedures for field testing 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)~~ .0540, and .0543(d) of this Section;

(3) Sampling strategies. A description of all sampling protocols, sample ~~size~~ size, methods for determining sample locations, 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 description of planned progress and troubleshooting meetings, including the frequency, shall be included in the CQA Plan. The meetings shall occur no less than twice per week, and the ~~A plan for holding daily and monthly troubleshooting meetings. The~~ proceedings of the meetings ~~must~~ shall be documented.

(c) Purpose of the CQA report. The CQA report ~~must~~ shall 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~~ shall contain as-built drawings noting any deviation from the approved engineering plans,~~plans~~ and ~~must~~ shall also contain a comprehensive narrative including ~~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~~ shall 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

(3) in accordance with the reporting schedule developed in accordance with Paragraph (b) of this Rule.

(4) The CQA report ~~must~~ shall 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, and

(C) the requirements of this Section. ~~Rule, and~~

~~(D) acceptable engineering practices.~~

(e) The Division ~~must~~ shall 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;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0542 is proposed for readoption with substantive changes as follows:

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

(a) The owner or operator of a C&DLF unit ~~must~~ shall 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~~ shall prepare an operation plan for each ~~phase~~ proposed area of landfill development consistent with the engineering plan submitted in accordance with Rule .0539 of this Section. ~~development.~~ The operation plan shall be submitted in accordance with Rule .0535 of this Section and ~~plan must~~ shall include the following: ~~drawings and a report defining the information as identified in this Rule.~~

(1) Operation drawings. Drawings ~~must~~ shall be prepared for each proposed area ~~phase~~ of landfill development. The drawings ~~must~~ shall be consistent with the engineering plan and ~~prepared in a format which is useable for the landfill operator. The operation drawings must~~ shall 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 included in the design or 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, and recycling pads.~~pads, etc.~~

(2) Operation ~~Plan~~ report. ~~Description.~~ The report shall provide a narrative discussion of the operation drawings and contain a description of the facility operation that conforms to ~~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)~~ (o) of this Rule.

(c) Waste Acceptance and Disposal Requirements.

(1) A C&DLF ~~must~~ shall accept only those solid wastes that it is permitted to receive. The landfill owner or operator ~~must~~ shall 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 C&DLF ~~landfill~~ is permitted to serve.

(2) Owners or operators of C&DLF units shall develop and implement a waste screening plan as required by G.S 130A-295.6(g) in accordance with the effective date and applicability requirements of S.L. 2007-550.

(3)~~(2)~~ Asbestos waste ~~must~~ shall be managed in accordance with 40 CFR ~~61,~~ 61(M). ~~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~~ Asbestos waste shall be covered ~~immediately~~ upon receipt, with soil or compacted waste, ~~in a manner that will not cause~~ to prevent airborne conditions. ~~conditions and must~~ Asbestos waste shall be disposed of using methods that prevent unintended exposure of asbestos by future land-disturbing activities, such as disposal in a marked area separate and apart from other solid ~~wastes,~~ wastes or recording the latitude and longitude coordinates of the asbestos area within the existing landfill footprint. ~~as shown on Operation drawings:~~ The disposal methods shall be described in the operations plan required by Paragraph (b) of this Rule.

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

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

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

(2) ~~Garbage~~ garbage as defined in G.S. 130A-290(a)(7),

(3) ~~Hazardous~~ hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from ~~conditionally exempt~~ very small quantity ~~generators,~~ generators as defined by 40 CFR 260.10, incorporated by reference at 15A NCAC 13A .0102(b),

(4) ~~Industrial~~ 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),~~ .0503(2)(d)(ii)(A) of this Section,

(5) ~~Liquid~~ liquid wastes,

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

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

(8) ~~Polychlorinated biphenyls~~ polychlorinated biphenyl (PCB) wastes as defined in 40 CFR 761,

(9) ~~Radioactive waste~~ wastes containing radioactive material as defined in G.S. 104E-5(14),

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

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

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

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

(14) ~~Yard~~ yard trash as defined in G.S. ~~130A-290(a)(45),~~ 130A-290(a)(45); and

(15) ~~The~~ the following wastes cannot be received if separate from C&DLF waste: lamps or bulbs including ~~but not limited to~~ halogen, incandescent, ~~neon~~ neon, or fluorescent; lighting ballast or fixtures; thermostats 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.

(16) Waste accepted for disposal in a C&DLF unit ~~must~~ shall be ~~readily~~ identifiable as C&D waste and ~~must~~ shall 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.

(17) C&D waste that has been shredded, ~~pulverized~~ 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~~ shall be made available to the Division upon request.

(18) The owner or operator of a C&DLF ~~must~~ shall 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~~ prohibits generators or collectors of C&D waste from disposing that type or form of C&D ~~waste.~~ waste; or

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

(f) Cover material requirements.

(1) Except as provided in Subparagraph (3) of this Paragraph, the owners and operators of all C&DLF units ~~must~~ shall cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and no less than ~~at least~~ once weekly. Cover ~~must~~ shall 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~~ shall be recorded in the operating record as specified in Paragraph (n) of this Rule.

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

(3) Alternative materials or an alternative thickness of cover are allowed with prior approval of the ~~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&DLF owner or operator may apply for approval of an alternative cover material. Alternative materials that have been approved by the Division for

use at any C&DLF may be used at all C&DLFs in accordance with G.S. 130A-295.6(h1). ~~If approval is given by the Division, approval would extend to all C&DLF units at one specific facility.~~

(g) Spreading and Compacting requirements.

(1) C&DLF units ~~must~~ shall restrict solid waste into the smallest area feasible.

(2) Solid waste ~~must~~ shall be compacted as densely as practical into cells.

(3) ~~Appropriate methods~~ Methods such as fencing and diking ~~must~~ shall be provided within the area to confine solid waste ~~which~~ that is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation ~~must~~ shall be collected and disposed of by the owner and operator.

(h) ~~Disease vector~~ Vector control. Owners and operators of all C&DLF units ~~must~~ shall 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"~~ "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~~ shall 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~~ burning, as defined in 15A NCAC 02D Section .1900, 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~~ burning, a request ~~must~~ shall be sent to the Division for review. The Division ~~will determine~~ shall approve the burning ~~to be approved~~ if the Division determines that the burning ~~if it~~ is one of the two types of burning ~~as referenced~~ described in this Subparagraph. A notation of the date of approval and the name of the Division personnel who approved the burning ~~must~~ shall be included in the operating record.

(3) C&DLF units shall maintain equipment on site ~~Equipment must be provided~~ to control accidental fires and arrangements ~~must~~ shall be made with the local fire protection agency to ~~immediately~~ provide fire-fighting services.~~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~~ shall 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~~ shall be ~~adequately~~ secured to prevent unauthorized entry by means ~~of~~ such as gates, chains, berms, fences, or natural barriers such as rivers. ~~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~~ shall be on duty at the site while the ~~facility~~ C&DLF is open for public use and at all times during active waste management operations at the C&DLF to ensure compliance with operational requirements.

(3) The access road to the C&DLF ~~site and access roads to monitoring locations must~~ shall be of all-weather construction and maintained to allow access by Department vehicles or vehicles containing waste. ~~in good condition.~~ The access roads or paths to monitoring locations shall be maintained to allow access by Department staff.

(4) Dust control measures ~~must~~ shall be implemented.

(5) Signs providing information on disposal procedures, the hours during which the site is open for public use, the permit ~~number~~ number, and ~~other pertinent~~ any information specified in the permit conditions to be included on the sign ~~must~~ shall be posted at the site entrance.

(6) Signs ~~must~~ shall be posted ~~which at a minimum~~ stating the types of waste that shall not be accepted at the C&DLF unit, such as liquid waste, ~~list liquid,~~ hazardous waste, and municipal solid waste. ~~waste as being excluded from the C&DLF unit.~~

(7) Traffic signs or markers ~~must~~ shall be provided ~~as necessary to promote an orderly traffic pattern~~ to direct traffic 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~~ that 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~~ Sediment control measures consisting of vegetative cover, materials, ~~structures~~ structures, or devices ~~must~~ shall be utilized to prevent sediment from leaving the C&DLF facility.

(2) ~~Adequate sediment~~ Sediment control measures consisting of vegetative cover, materials, ~~structures~~ structures, or devices ~~must~~ shall 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~~ shall be accomplished as directed by appropriate State~~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~~ shall be diverted from the operational area.

(2) Surface water ~~must~~ shall not be impounded over or in waste.

(3) Solid waste ~~must~~ shall not be disposed of in water.

(4) Leachate ~~must~~ shall be contained on-site or treated prior to discharge. ~~An NPDES An NPDES~~ 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) C&DLF units ~~must~~ shall not:

(A) ~~Cause~~ 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)~~ NPDES requirements, pursuant to Section ~~402.~~ 402 of the Clean Water Act; or

(B) ~~Cause~~ 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 for a survey,~~request,~~ the permittee ~~must cause to be conducted a~~ shall have a survey conducted 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~~ shall 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~~ if there is reason to believe that operations are being conducted in a manner that deviates from the plan listed in the effective ~~permit,~~ permit; or

(B) ~~As~~ 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~~ shall be performed by a ~~registered~~ licensed professional land surveyor if required by G.S. 89C. ~~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~~ shall 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;~~ Section and Section .1800 of this Subchapter.

(F) notation of date and time of placement of cover material; and

(G) all audit records, compliance ~~records~~ records, and inspection reports.

(2) All information contained in the operating record ~~must~~ shall be furnished to the Division according to the permit, ~~permit or upon request,~~ or shall be made available for review by the Division at the time and place of an inspection of the C&DLF or upon request. The information contained in the operating record may be recorded and retained in paper format or in an electronic format that is accessible and viewable by the Division. ~~for inspection by the Division.~~

(3) The operating record ~~must~~ shall also include:

(A) ~~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~~ a copy of the current Permit to Construct and Permit to Operate; and

(C) ~~The~~ a copy of the Monitoring Plan, in accordance with Rule .0544 of this Section, included as appendices to the Operation Plan.

(o) Leachate Management Plan. The owner or operator of a C&DLF unit designed with a leachate collection system shall establish and maintain a leachate management plan that includes the following:

(1) periodic maintenance of the leachate collection system;

(2) maintaining records for the amount of leachate generated;

(3) annual leachate quality sampling and analysis;

(4) approval documentation for final leachate disposal; and

(5) a contingency plan for extreme operational conditions.

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0543 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0543 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR C&DLF FACILITIES

(a) Purpose. This Rule shall establish ~~establishes~~ criteria for the closure of all C&DLF units and subsequent requirements for post-closure compliance. The owner and operator ~~must~~ shall develop specific plans for the closure and post-closure of the C&DLF facility or units that comply with ~~these rules,~~ the rules of this Section, and submit them to the Division for review and approval.

(b) Scope.

(1) ~~Closure. Standards must be established~~ This Rule shall establish standards 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~~ shall incorporate requirements from Rules .0540 and .0541 of this Section.

(2) ~~Post-closure. Standards are must be established~~ This Rule shall establish standards for the monitoring and maintenance of the C&DLF unit(s) following closure.

(c) Closure criteria.

(1) C&DLF units ~~must~~ shall install a cap system that is designed and constructed to minimize infiltration and erosion. The cap system ~~must~~ shall 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~~ no less than 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~~ shall conform to the plans prepared in accordance with ~~Rule~~ Rules .0539 and .0541 ~~.0540~~ of this Section and the following requirements:

(A) post-settlement surface slopes ~~must~~ shall be a minimum of five percent and a maximum of 25 percent; and

(B) a gas venting or collection system ~~must~~ shall 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~~ demonstrates 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~~ will 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~~ shall notify the Division in writing that a notice of the intent to close the unit has been placed in the operating record.~~record, as specified in Paragraph (n) of Rule .0542.~~

(5) The owner and operator ~~must~~ shall 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: ~~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~~ no later than 30 days after the date on which the C&DLF unit receives the known final receipt of wastes;

(B) ~~No~~ no later than 30 days after the date that a 10 acre or greater area of ~~waste,~~ waste is within 15 feet of final design grades; or

(C) ~~No~~ no later than one year after the most recent receipt of wastes, if the C&DLF unit has remaining capacity.

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 or operator has and will continue to prevent threats to human health and the environment from the unclosed C&DLF unit.

(6) The owner and operator of all C&DLF units ~~must~~ shall 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~~ 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 C&DLF units, the owner or operator ~~must~~ shall record a notice for the landfill facility property at the local county Register of Deeds office; and notify the Division that the notice has been recorded and a copy has been placed in the operating record. The notice may be a notation on the deed to the landfill facility property, ~~at the local county Register of Deeds office,~~ or may be some other instrument such as a declaration of restrictions on the property that is ~~normally examined~~ discoverable during a

title search for the landfill facility property ~~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~~ notice 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~~ future use is restricted under the closure plan approved by the Division.

~~(9)~~ The owner or operator may request ~~permission~~ approval from the Division to remove the notice. ~~notation from the deed~~ The Division shall approve removal of the notice if all wastes are removed from the ~~facility.~~ landfill facility property.

(d) Closure plan contents. The owner and operator ~~must~~ shall 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~~ plan shall 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:~~ 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 Section .1800 of this Subchapter. ~~Rule .0546 of this Section.~~

(e) Post-closure criteria.

(1) Following closure of each C&DLF unit, the owner and operator ~~must~~ shall conduct post-closure care. Post-closure care ~~must~~ 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 rainwater that drains over land from or onto any part of the facility or unit ~~run-on and run-off~~ from eroding or ~~otherwise~~ damaging the cap system;

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

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

(D) maintaining, ~~operating~~ 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~~ protective of 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) Every five years during the post-closure care period and following ~~Following~~ completion of the post-closure care period for each C&DLF unit, the owner or operator ~~must~~ shall notify the Division that a certification ~~certification, signed by a registered professional engineer,~~ verifying that post-closure care has been ~~completed~~ conducted in accordance with the post-closure plan, has been placed in the operating record. If required by G.S. 89C, the certification shall be signed by a licensed professional engineer.

(f) Post-closure plan contents. The owner and operator of all C&DLF units ~~must~~ shall submit a written post-closure plan to the Division that ~~includes, at a minimum,~~ includes 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~~ shall 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~~ 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 Rules .0531 through .0546 of 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

(4) the cost estimate for post-closure activities required under Section .1800 of this Subchapter. ~~Rule .0546 of this Section.~~

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0544 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .0544 MONITORING PLANS AND REQUIREMENTS FOR C&DLF FACILITIES

(a) The owner or operator of a C&DLF unit shall submit a Water Quality ~~A~~ Monitoring Plan to the Division ~~must be submitted that contains the following information and must~~ that shall apply to all C&DLF units. The Water Quality Monitoring Plan ~~must~~ shall be prepared in accordance with this ~~Rule.~~ Rule, and shall include information on the groundwater monitoring systems, surface water sampling locations, sampling and analysis requirements, and detection monitoring requirements contained in Paragraphs (b) and (c) of this Rule.

(b) Groundwater monitoring shall be as follows: ~~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~~ groundwater monitoring system ~~must~~ shall be installed that consists of ~~a sufficient number of wells,~~ no less than one background and three downgradient wells installed at ~~appropriate~~ locations and depths that ~~depths, to~~ yield ~~ground water~~ groundwater samples from the uppermost aquifer that:

(A) ~~Represent~~ represent the quality of the background ~~ground water~~ groundwater that has not been affected by leakage from the unit. ~~Normally, determination~~ Determination of background water quality ~~will~~ shall 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~~ groundwater quality that is as representative as that provided by the upgradient well(s); and

(B) ~~Represent~~ represent the quality of ~~ground water~~ groundwater passing the review boundary and the relevant point of compliance as approved by the Division. ~~The downgradient monitoring system must be installed at~~ A review boundary is established around any disposal system midway between the compliance boundary and the waste boundary ~~the relevant point of compliance so as~~ to ensure detection of ~~ground water~~ groundwater contamination in the uppermost aquifer. The relevant point of compliance ~~must~~ shall be established no more than 250 feet from a waste boundary, or ~~must~~ shall be at least 50 feet within the facility property boundary, whichever point is closer to the waste boundary. In determining the review boundary and 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;~~ groundwater; the proximity and withdrawal rate of the ~~ground-water~~ groundwater users; the existing quality of the ~~ground water,~~ groundwater, including other sources of contamination and their cumulative impacts on the ~~ground water,~~ groundwater, and whether the ~~ground water~~ groundwater 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~~ A Water Quality Monitoring Plan ~~must~~ shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of ~~ground-water~~ groundwater quality at the background and downgradient wells. The plan ~~must~~ shall include procedures and techniques for sample collection; sample preservation and shipment; chain-of-custody control; and quality assurance and quality control.

(D) The detection groundwater monitoring program ~~Detection ground-water monitoring program. The monitoring programs must~~ shall include sampling and analytical methods ~~that are appropriate~~ for ~~ground-water~~ groundwater sampling ~~and~~ that accurately measure target constituents and other monitoring parameters in ~~ground-water~~ groundwater samples. Detection monitoring ~~is required~~ shall be conducted at C&DLF units at all ~~ground water~~ groundwater monitoring wells that are part of the detection monitoring system as established in the approved Water Quality Monitoring Plan. ~~monitoring plan. At a minimum, The~~ The Detection Groundwater Monitoring ~~detection monitoring~~ program ~~must~~ shall include monitoring for the constituents listed in Appendix I of 40 CFR ~~Part~~ 258, ~~Mercury, Chloride, Manganese, Sulfate, Iron,~~ mercury, chloride, manganese, sulfate, iron, specific conductance, pH, temperature, alkalinity, and total dissolved solids. ~~Alkalinity, and Total Dissolved Solids.~~ The monitoring frequency for all detection monitoring constituents ~~must~~ shall be ~~at least~~ no less than annual ~~semiannual~~ during the active life of the facility, and during ~~the~~ closure and post-closure period.~~periods.~~ To establish baseline, no less than four independent samples ~~A minimum of one sample~~ from each ~~well,~~ background and downgradient monitoring well ~~downgradient, must~~ shall be collected within a six-month period and analyzed for the constituents required in this Paragraph, with no less than one sample collected from each new monitoring well before waste placement in each new cell or phase. The Water Quality Monitoring Plan shall include a description of the procedures used to establish baseline at the C&DLF. ~~At least one~~ No less than one sample from each background and downgradient monitoring well ~~well, background and downgradient, must~~ shall be collected and analyzed during subsequent annual ~~semiannual~~ sampling events. C&DLF units shall comply with the groundwater quality standards and interim maximum allowable concentrations set forth in 15A NCAC 02L and the

groundwater protection standards established in Rule .0545(c) of this Section. ~~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~~ shall be protective of human health and the environment.

~~(2)~~~~(F)~~ Each time ~~ground-water~~ groundwater is ~~sampled~~ sampled, elevations ~~must~~ shall be measured in each well ~~immediately~~ prior to purging. ~~ground-water~~ Groundwater elevations in wells which monitor the same waste management area ~~must~~ shall be measured within a 24 hour period of time to avoid temporal variations in ~~ground-water~~ groundwater flow ~~which~~ that could preclude accurate determination of ~~ground-water~~ groundwater flow rate and direction. In order to ~~accurately~~ determine ~~ground-water~~ accurate groundwater elevations for each monitoring well, the wells ~~must~~ shall have been ~~accurately~~ surveyed by a licensed professional land surveyor if required by G.S. 89C. ~~North Carolina Registered Land Surveyor.~~ The survey of the wells ~~must~~ shall 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~~ groundwater flow, the owner or operator ~~must~~ shall provide data for hydraulic conductivity and porosity for the formation materials at each of the well locations.

~~(3)~~~~(G)~~ The owner or operator ~~must~~ shall establish existing conditions of ~~ground-water~~ groundwater quality in hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in Part (1)(D) of this Paragraph. ~~the particular ground-water monitoring program that applies to the C&DLF unit.~~ Statistical analysis used to establish existing conditions of groundwater quality shall be in accordance with Subparagraphs (4) and (5) of this Paragraph and the minimum number of samples required by the statistical method used shall be met.

(4) Should the owner or operator choose to perform statistical analysis of groundwater quality data for purposes of establishing background concentrations or to determine if there is an exceedance of the groundwater quality standards and interim maximum allowable concentrations established in 15A NCAC 02L or the groundwater protection standards established in Rule .0545(c) of this Section, the owner or operator shall select one of the following statistical methods to be used in evaluating groundwater monitoring data for each constituent of concern. The statistical test chosen shall be conducted separately for each constituent of concern in each well.

(A) 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.

(B) 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.

(C) 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.

(D) A control chart approach that gives control limits for each constituent.

(E) 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 in Subparagraph (5) of this Paragraph. If approved, the owner or operator shall place a copy of the justification for an alternative test method in the operating record.

(5) Any statistical method chosen to evaluate groundwater monitoring data shall comply with the following performance standards:

(A) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or constituents of concern. If the distribution of the chemical parameters or constituents of concern 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.

(B) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater 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.

(C) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined by the analyst 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.

(D) If a tolerance interval or a prediction interval is used to evaluate groundwater 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 by the analyst 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.

(E) 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.

(F) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(6)~~(H)~~ Within 120 days of completing a ~~ground-water~~ groundwater sampling event, the owner or operator ~~must~~ shall submit to the Division a monitoring report ~~report, with one copy~~ in electronic ~~format,~~ format that includes information from the sampling ~~event; including:~~ event including field observations relating to the condition of the monitoring wells; field data; a summary of the laboratory analytical data report; ~~data;~~ statistical analysis (if utilized), field sampling methods and quality assurance and quality control data; information on ~~ground-water~~ groundwater flow direction; ~~ground-water~~ calculations of groundwater flow ~~rate~~ rate; and for each ~~well with~~ well, any constituents that exceed ~~ground-water~~ groundwater standards as defined in Part (1)(D) of this Paragraph. ~~over background levels; and any other pertinent information related to the sampling event.~~

(7) If the owner or operator determines that there is an exceedance of the groundwater quality standards or Interim Maximum Allowable Concentration (IMAC) established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Rule .0545(c) of this Section for one or more of the constituents required in Part (1)(D) of this Paragraph at any monitoring well, the owner or operator:

(A) shall, within 14 days of this finding, report to the Division and place a notice in the operating record indicating which constituents have exceeded groundwater quality standards or IMACs established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Rule .0545(c) of this Section;

(B) shall establish an assessment monitoring program meeting the requirements in Rule .0545 of this Section within 90 days except as provided for in Part (C) of this Subparagraph; and

(C) may demonstrate that a source other than a CDLF unit caused the exceedance, or the exceedance resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration shall be submitted to the Division for review. If required by G.S. 89C or G.S. 89E, a licensed

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 of the initial determination of exceedance, a successful demonstration is not made, the owner or operator shall initiate an assessment monitoring program as required by Rule .0545 of this Section.

~~(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.~~

(8)~~(2)~~ Monitoring wells ~~must~~ shall 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~~ shall obtain approval from the Division for the design, installation, development, and decommission of any monitoring well or piezometer. Documentation ~~must~~ shall be placed in the operating record and provided to the Division.

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

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

(A) aquifer thickness, ~~ground-water~~ groundwater flow rate, and ~~ground-water~~ groundwater flow direction, including seasonal and temporal fluctuations in ~~ground-water~~ groundwater flow; and

(B) unsaturated and saturated geologic units (including fill materials) overlying and comprising the uppermost aquifer, including thickness, stratigraphy, lithology, hydraulic conductivities, ~~porosities~~ porosities, and effective porosities.

(10)~~(4)~~ ~~The Division may require or allow the use of alternative monitoring systems in addition to ground-water monitoring wells:~~ In addition to groundwater monitoring wells, the use of alternative monitoring systems may be:

(A) required by the Division at sites where the owner and operator does not control the property from any landfill unit to the ~~ground-water~~ groundwater discharge feature(s); or

(B) allowed by the Division at sites with hydrogeologic conditions favorable to detection monitoring by alternative methods.

(11)~~(5)~~ Owners and operators of C&DLF units ~~must~~ shall comply with the ~~ground-water~~ groundwater monitoring, ~~assessment~~ assessment, and corrective action requirements under Rules .0544 through .0545 of this Section according to the following schedule:

(A) new C&DLF units ~~must~~ shall be in compliance with the requirements before waste can be placed in the unit; and

(B) lateral expansions to existing C&DLF units ~~must~~ shall be in compliance with the requirements before waste can be placed in the expansion area.

(12) Groundwater quality standards and interim maximum allowable concentrations established under 15A NCAC 02L and groundwater protection standards established in accordance with Rule .0545(c) shall not be exceeded.

(c) Surface water monitoring ~~plan. The Surface Water Monitoring System~~ shall ~~must~~ be as follows:

(1) The monitoring shall include sample collection from surface water features on or bordering the facility property and include no less than one upstream and one downstream sampling location. Surface water samples shall be analyzed for constituents that include those listed in Part (b)(1)(D) of this Rule. The monitoring frequency shall be no less than annual during the active life of the facility, and no less than annual during the closure and post-closure periods. ~~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 shall ~~must~~ be defined as a part of the monitoring plan.

(3) Information used for the development of the surface water monitoring system shall include:

(A) drainage patterns and other hydrological conditions in the area;

(B) proximity of surface water to the facility;

(C) uses that are being or may be made of any surface water that may be affected by the facility; and

(D) any other factors that relate to the potential for surface water impacts from the facility.

(4) Surface water standards established under 15A NCAC 02B .0200 shall not be exceeded. If an 02B standard is not established for any detected constituent or parameter, the owner or operator shall obtain a determination from the Division on establishing a surface water standard using EPA Nationally Recommended Water Quality Criteria which can be viewed at https://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/surface-water-standards.

(d) ~~Gas control plan.~~ The owner or operator of a C&DLF unit shall submit a Landfill Gas Monitoring Plan to the Division prepared in accordance with this Rule that shall apply to all C&DLF units. Landfill gas monitoring shall be as follows:

(1) Owners and operators of all C&DLF units ~~must~~ shall 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); and

(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~~ shall implement a routine ~~methane~~ landfill gas monitoring program to ensure that the standards of this Paragraph are met.

(A) The type of monitoring ~~must~~ shall 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 concentration of methane in landfill gas shall be monitored at a frequency of no less than quarterly. ~~The frequency of monitoring shall be quarterly or as approved by the Division.~~

(C) The Division may also require quarterly monitoring of landfill gas for other explosive gases such as hydrogen sulfide if it is necessary to ensure compliance with Subparagraph (1) of this Paragraph. If the Division requires monitoring of additional explosive gases, the Division shall provide written notice to the facility of the requirement.

(3) If ~~methane or~~ explosive gas levels exceeding the limits specified in Subparagraph (1)~~(d)(1)~~ of this ~~Rule~~ Paragraph are detected, the owner and operator ~~must:~~ shall:

(A) ~~immediately~~ upon discovery of detection, notify the Division and take all steps necessary to ensure protection of human ~~health~~ health, such as monitoring of offsite structures for explosive gases; ~~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~~ shall describe the nature and extent of the problem and the proposed remedy.

(4) 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.

~~(5) 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~~ shall implement a program at the facility for detecting and preventing the disposal of industrial, hazardous, liquid, municipal solid ~~waste~~ waste, and excluded wastes in accordance with the Operating Plan or the effective permit. This program ~~must~~ shall include: ~~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~~ municipal, or excluded waste. The plan ~~must~~ shall address identification, removal, storage and final disposition of the waste.

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

(g) Water Quality Monitoring ~~plans~~ Plans and Landfill Gas Monitoring Plans ~~must~~ shall be prepared under the responsible charge of and bear the seal of a licensed professional engineer or licensed geologist ~~Licensed Geologist or Professional Engineer~~ if required by ~~in accordance with~~ G.S. 89C or 89E, ~~89E or 89C, respectively.~~

(h) Water Quality Monitoring ~~plans~~ Plans and Landfill Gas Monitoring Plans ~~must~~ shall 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) Water Quality Monitoring ~~plans~~ Plans and Landfill Gas Monitoring Plans ~~must~~ shall be submitted to the Division for review. The Division shall date and stamp the Water Quality Monitoring Plan and the Landfill Gas Monitoring Plan ~~monitoring plans~~ "approved" if they meet the ~~conditions~~ requirements of this Rule. A copy of the approved monitoring plan ~~must~~ shall be placed in the operating record.

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

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;

Readopted Eff. July 1, 2020.

15A NCAC 13B .0545 is proposed for readoption with substantive changes as follows:

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

(a) Assessment Program. Assessment monitoring ~~is~~ shall be required ~~if~~ if, in any sampling event, one or more constituents ~~constituents, as~~ listed in ~~Part (b)(1)(D) of~~ Rule .0544(b)(1)(D) ~~.0544~~ of this Section are detected above the ~~current ground water~~ groundwater quality standards or Interim Maximum Allowable Concentrations (IMAC) established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Subparagraph (c) of this Rule. ~~in any sampling event.~~ The owner and operator ~~must~~ shall ~~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;~~

(1)~~(2)~~ Within 30 days of obtaining the results of any sampling event, notify ~~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;

(2)~~(3)~~ Within 30 days of triggering an assessment monitoring ~~program,~~ program in accordance with this Paragraph, the owner and operator ~~must~~ shall submit an assessment monitoring work plan for Division review. The Division shall date and stamp the assessment monitoring ~~program~~ plan "approved" if the ~~conditions~~ requirements in Paragraph (b) of this Rule are met. The owner and operator ~~must~~ shall place the approved program in the operation record, and notify ~~all~~ appropriate local government ~~officials.~~ officials, including the county manager, city manager, and county health department.

(b) Assessment Monitoring Work Plan. The assessment monitoring work plan ~~must~~ shall be in accordance with the following:

(1) Install additional wells, as necessary, to characterize the nature and extent of the release, including no less than one additional groundwater monitoring well or methane gas monitoring well at the facility's property boundary or the compliance boundary, as defined in 15A NCAC 02L .0102, in the direction of contaminant migration most likely to show impact based on the established geology and hydrogeology. ~~Install~~ The additional monitoring wells ~~to~~ shall characterize the nature and extent of the release by determining the following factors: ~~following:~~

(A) ~~Lithology~~ lithology of the aquifer and unsaturated zone;

(B) ~~Hydraulic~~hydraulic conductivity of the aquifer and unsaturated zone;

(C) ~~ground water~~ groundwater flow rates;

(D) ~~Minimum~~ minimum distance of contaminant travel;

(E) ~~Resource~~ resource value of the aquifer; and

(F) ~~Nature,~~ nature, fate, and transport of any detected constituents.

(2) No less than one sample from each monitoring well, including any well installed in accordance with Subparagraph (1) of this Paragraph, shall be collected and analyzed for the constituents listed in 40 CFR 258 Appendix II during the initial sampling event for assessment monitoring. After the initial sampling event, for any constituent detected in the downgradient wells as the result of the Appendix II analysis, no less than three additional independent samples from each background and downgradient monitoring well shall be collected and analyzed to establish a baseline for the new detected constituents. Once determined, baseline data for the new detected constituents shall be reported to the Division.

~~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.~~

(c) For constituents that do not have a groundwater quality standard or IMAC established in accordance with 15A NCAC 02L .0202, the Division shall establish a groundwater protection standards as follows:

(1)~~(3)~~ ~~If the new constituents do not have 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~~ shall be the most protective of the following:

(A) ~~For~~ for constituents for which a maximum ~~contamination~~ contaminant 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~~ for constituents for which a public water quality standard has been established under the North Carolina Rules Governing Public Water Supplies, ~~Systems,~~ 15A NCAC 18C, the public water quality standard for that constituent;

(C) ~~For~~ for constituents for which no MCLs or public water quality standards have ~~not~~ been promulgated, the background concentration for the constituent established from the monitoring wells required in accordance with Rule ~~.1631(a)(1)~~ .0544(b)(1)(A), (b)(4), and (b)(5) of this Section; or

(D) ~~For~~ for constituents for which the background level is higher than the MCL or public water quality standard or ~~health based~~ health-based levels identified under Subparagraph (2) of this Paragraph, ~~Paragraph (i) of this Rule,~~ the background ~~concentration.~~ established in accordance with Rule .0544(b)(1)(A), (b)(4), and (b)(5) of this Section.

~~(4)~~(2) The Division may establish an alternative groundwater ~~ground water~~ protection standard for constituents for which ~~neither an~~ no MCL or water quality standard ~~has not~~ have been established.

These ~~ground-water~~ groundwater protection standards ~~must~~ shall be appropriate health-based ~~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, ~~Standards (40 CFR Part 792)~~ or equivalent;

(C) For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level due ~~(due~~ to continuous lifetime exposure ~~exposure)~~ of 1 x 10-6;

(D) For systemic toxicants, the level represents a concentration to which the human population, including sensitive subgroups, ~~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)~~(3) In establishing ~~ground-water~~ groundwater protection standards under this Paragraph ~~Paragraph (b) of this Rule~~ the Division may consider the following:

(A) ~~Multiple~~ multiple contaminants in the groundwater; ~~ground-water;~~

(B) ~~Exposure~~ exposure threats to sensitive environmental receptors; and

(C) ~~Other~~ other site-specific exposure or potential exposure to groundwater. ~~ground-water.~~

(4) The owner or operator may request the Division approve a background level for the unit that is higher than the standard established in 15A NCAC 02L .0202 or the standard established in Subparagraph (1) of this Paragraph or health-based levels identified under Subparagraph (2) of this Paragraph. The background level shall be established in accordance with Rule .0544(b)(1)(A), (b)(4), and (b)(5) of this Section. The approved background level shall be the established groundwater protection standard.

~~(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.~~

(d) Assessment Monitoring. After obtaining the results from the initial sampling event required in Subparagraph (b)(2) of this Rule, the owner and operator shall perform assessment monitoring in accordance with the following:

(1)~~(7)~~ ~~After obtaining the results from the initial and subsequent sampling events,~~ For each assessment monitoring event, including the sampling required in Subparagraph (b)(2) of this Rule, the owner or operator ~~must~~ shall submit an assessment monitoring report to the Division ~~which must~~ that complies with Rule .0544(b)(6) of this Section and, if required by G.S. 89E, the report shall be certified by a licensed geologist. ~~Licensed Geologist.~~

(2) Within 14 days of receipt of analytical results, the owner or operator shall submit notice to the Division in writing and place the notice in the operating record identifying the 40 CFR 258 Appendix II constituents that have not previously been detected and reported to the Division.

(3) Within 90 days, and no less than semiannually thereafter until the Division approves a return to detection monitoring in accordance with Subparagraphs (6) or (7) of this Paragraph, the owner or operator shall sample all of the monitoring wells for the unit in the detection monitoring system established in Rule .0544 of this Section for all constituents listed in 40 CFR 258 Appendix I and for those constituents in Appendix II not listed in Appendix I that have been detected. Any well with a reported groundwater standard exceedance shall be sampled for all constituents in 40 CFR 258 Appendix II at least annually unless otherwise approved in accordance with Subparagraphs (4) or (5) of this Paragraph. A report from each sampling event shall be submitted to the Division as specified in Subparagraph (1) of this Paragraph and placed in the facility operating record.

(4) 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 not listed in Rule .0544(b)(1)(D) of this Section if it can be shown that the constituents proposed for deletion are not expected to be in or derived from the waste contained in the unit.

(5) The Division may approve an appropriate alternate frequency or subset of wells for repeated sampling and analysis for 40 CFR 258 Appendix II constituents, not listed in Appendix I, required during the active life and post-closure care of the unit considering all of the following factors:

(A) lithology of the aquifer and unsaturated zone;

(B) hydraulic conductivity of the aquifer and unsaturated zone;

(C) groundwater flow rates;

(D) minimum distance of travel;

(E) resource value of the aquifer; and

(F) nature, fate, and transport of any detected constituents.

(6)~~(8)~~ The owner or operator may ~~demonstrate~~ demonstrate, in accordance with Rule .0544(b)(7) of this Section, that a source other than a C&DLF caused the exceedance of the groundwater quality standards established in accordance with 15A NCAC 02L .0202 or groundwater protection standards established in accordance with Paragraph (c) of this Rule, or the exceedance resulted from error in sampling, analysis, or natural variation in groundwater quality. ~~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,~~ made for each exceedance, the owner or operator may discontinue assessment monitoring, and may return to detection monitoring in accordance with Rule .0544(b)(1)(D) of this Section when approval is given by the Division in writing. if the constituents are at or below background values and groundwater quality standards established in accordance with 15A NCAC 02L .0202 or groundwater protection standards established in accordance with

Paragraph (c) of this Rule, or approval is given by the Division according to Subparagraph ~~(9)~~(7) of this Paragraph. Until a successful demonstration is made, the owner or operator ~~must~~ shall comply with Paragraph (b) of this Rule.

~~(7)~~~~(9)~~ The Division ~~may~~ shall give approval to the owner or operator to return to detection monitoring in accordance with Rule .0544(b)(1)(D) of this Section ~~if:~~ if all of the following are met:

(A) the ~~The~~ concentrations of the constituents are shown to be at or below background values and groundwater quality standards established in accordance with 15A NCAC 02L ~~.0202~~ .0202, or the groundwater protection standard established in accordance with Paragraph (c) of this Rule, for two consecutive sampling events;

(B) the ~~The~~ plume is not migrating horizontally or vertically; and

(C) the ~~The~~ plume has not exceeded the compliance boundary.

~~(8)~~~~(10)~~ After completion of Paragraphs (a) and (b) of this Rule and if ~~If~~ one or more constituents are ~~consistently~~ detected for two consecutive semiannual sampling events above background, the groundwater quality standards established in 15A NCAC 02L .0202, or ~~and~~ the ~~approved~~ groundwater protection ~~standards,~~ standards established in accordance with Paragraph (c) of this Rule, the owner or operator ~~must~~ shall initiate within 90 days an Assessment of Corrective ~~Measures.~~ Measures in accordance with Paragraph (e) of this Rule and shall continue to monitor in accordance with the approved assessment monitoring program.

(e)~~(c)~~ Assessment of Corrective Measures. ~~Assessment~~ If the assessment of corrective measures is required ~~upon completion of Paragraphs (a) and (b) of this Rule~~ in accordance with Subparagraph (d)(8) of this Rule, the ~~as determined by the Division. The~~ assessment of corrective measures ~~must~~ shall include an analysis of the effectiveness of potential corrective ~~actions~~ measures in meeting all of the requirements and objectives of the remedy as described under this Rule. ~~The~~ An assessment of corrective measures document shall be completed within 120 days, or as approved by the Division, and ~~must~~ shall address the following:~~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~~ local permit requirements or other environmental or public health requirements that may ~~substantially~~ affect implementation of the remedy(s).

(f)~~(d) The~~ Within 120 days of completion of the assessment of corrective measures in accordance with Paragraph (e) of this Rule, the owner and operator ~~must~~ shall 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~~ shall provide a public notice of the meeting at least 30 days prior to the meeting. The notice ~~must~~ shall include the time, place, date, and purpose of the public meeting. ~~meeting required by this Paragraph of this Rule.~~ A copy of the

public notice ~~must~~ shall be forwarded to the Division at least five days prior to publication. The owner and operator ~~must~~ shall mail a copy of the public notice to those persons requesting notification. Public notice ~~must~~ shall be in accordance with Rule .0533(c)(4) of this Section.

~~(e)~~(g) Selection of Remedy. Based on the results of the Assessment of Corrective Actions, the owner and operator ~~must~~ shall select a remedy ~~that, at a minimum, meets the standards listed in Subparagraph (2) of this Paragraph~~ as follows:

(1) Within 30 days of selecting a remedy, the permittee ~~must~~ shall submit an application to modify the permit describing the selected remedy to the Division for evaluation and approval. The application ~~must~~ shall be subject to the processing requirements set forth in Rule .0533(c) of this ~~Section.~~ Section. The application ~~must~~ shall include the demonstrations necessary to comply with the financial assurance requirements in accordance with Rule .0546 of this ~~Section.~~ Section and Section .1800 of this Subchapter.

(2) Remedies ~~must:~~ shall:

(A) be protective of human health and the environment;

(B) attain the approved ~~ground water~~ groundwater protection ~~standards;~~ standards in accordance with Rule .0544(b)(12);

(C) control the source(s) of releases ~~so as~~ to reduce or eliminate, to the maximum extent practicable, further releases of 40 CFR 258 Appendix II 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)~~(m) of this Rule.

(3) In selecting a remedy that meets the standards of Subparagraph (2) of this Paragraph, ~~(e)(2) of this Rule,~~ the owner and operator ~~must~~ shall 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~~ shall specify as part of the selected remedy a schedule for initiating and completing remedial activities included in a corrective action plan. This schedule ~~must~~ shall 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~~ shall 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~~ groundwater 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~~ groundwater 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~~ groundwater removal and treatment costs; the costs and availability of alternative water supplies; and

(G) practical capability of the owner and operator. ~~operator; and~~

~~(H) other relevant factors.~~

~~(f)~~(h) 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~~ the groundwater 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;~~ receptors; or

(2) ~~The~~ the constituent or constituents are present in ~~ground-water~~ groundwater 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 of concern are migrating or are likely to migrate in concentrations that would exceed the approved ~~ground-water~~ groundwater protection standards;

(3) ~~Remediation~~ remediation of the release is technically impracticable; or

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

~~(g)~~(i) A determination by the Division pursuant to this Paragraph ~~must~~ shall 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,~~ groundwater, to prevent exposure to the ~~ground-water,~~ groundwater, or to remediate ~~ground-water~~ groundwater to concentrations that are technically practicable and reduce threats to human health or the environment.

~~(h)~~(j) Implementation of the Corrective Action Program. Based on the approved schedule for initiation and completion of remedial activities, the owner and operator ~~must~~ shall:

(1) within 120 days after the approval of the selected remedy or as approved by the Division, submit a Corrective Action Plan that ~~Establish and implement~~ establishes and implements a corrective action ~~ground-water~~ groundwater monitoring program that:

(A) ~~at a minimum,~~ meets the requirements of an assessment monitoring program under Paragraphs (a), (b), and (d)~~(a) and (b)~~ of this Rule;

(B) indicates the effectiveness of the corrective action remedy; and

(C) demonstrates compliance with ~~ground-water~~ groundwater quality standards or IMACS established in accordance with 15A NCAC 02L .0202 and groundwater protection standards established in accordance with Paragraph (c) of this Rule pursuant to Paragraph ~~(i)~~(o) of this Rule.

(2) ~~Implement~~ implement the approved corrective action remedy; and

(3) ~~Take~~ take any interim measures necessary to ensure the protection of human health and the environment. Interim measures ~~must~~ shall be consistent with the objectives of and contribute to the performance of any remedy that may be required. The following factors ~~must~~ shall 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~~ groundwater that may occur if remedial action is not initiated; ~~initiated expeditiously~~;

(E) weather conditions that may cause ~~hazardous~~ constituents of concern to migrate or be released;

(F) risks of fire or explosion, or potential for exposure to ~~hazardous~~ constituents of concern resulting from ~~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.

(k) The owner or operator shall submit a Corrective Action Evaluation Report to the Division in electronic portable document format no less than once every five calendar years until the owner and operator are released from the corrective action program in accordance with Paragraph (q) of this Rule. The report shall contain:

(1) a description of the corrective measure remedies that have been implemented or completed since the initiation of the corrective action program;

(2) an evaluation of the effectiveness of the corrective action program;

(3) the information required in Rule .1804(a)(1) of this Subchapter.

(l)~~(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)~~ (f)(2)of this Rule are not being achieved through the remedy selected. In such cases, the owner and operator ~~must~~ shall implement other methods or ~~techniques, as approved by the Division that could practicably achieve compliance with the requirements,~~ techniques to comply with Paragraph (g) of this Rule unless the Division determines that active remediation is not necessary in accordance with ~~the owner or operator makes the determination under~~ Paragraph ~~(f)~~ (h) of this Rule.

(m)~~(j)~~ If the owner or operator determines that compliance with requirements of Subparagraph ~~(e)(2)~~ (g)(2) of this Rule cannot be practically achieved with any currently available methods, the owner and operator ~~must:~~ shall:

(1) obtain certification of a ~~Licensed Geologist or Professional Engineer~~ licensed professional engineer or licensed geologist, if required by G.S. 89C or 89E, and approval from the Division that compliance with the requirements under Subparagraph ~~(e)(2)~~ (g)(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~~ Paragraph are satisfied. The approved report ~~must~~ shall be placed in the operating record prior to implementing the alternative measures.

(n)~~(k)~~ All solid wastes that are managed pursuant to a remedy required under Paragraph ~~(e)~~(g) of this Rule, or an interim measure required under Paragraph ~~(e)~~(g) of this Rule, ~~must~~ shall be managed in a manner:

(1) that is protective of human health and the environment, and

(2) that complies with applicable ~~state~~ State and federal requirements.

(o)~~(l)~~ Remedies selected pursuant to Paragraph ~~(e)~~(g) of this Rule shall be considered complete when:

(1) the owner and operator complies with the groundwater quality and ~~ground water~~ groundwater protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance;

(2) compliance with the ~~ground water~~ groundwater quality and groundwater 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)~~(g)(2) of this Rule; and

(3) all actions required to complete the remedy have been satisfied.

(p)~~(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 (o)~~(l)~~ of this Rule. If required by G.S. 89C or 89E, a licensed professional engineer or licensed geologist shall prepare and sign these documents. This report shall also ~~must~~ be signed by the owner or operator. ~~owner and by a Licensed Geologist or Professional Engineer.~~ Upon approval by the Division, this report ~~must~~ shall be placed in the operating record.

(q)~~(n)~~ When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph (o)~~(l)~~ of this Rule, the owner and operator shall be released from the requirements for financial assurance for the corrective action program under Rule .0546 of this ~~Section.~~ Section and Section .1800 of this Subchapter. Nothing in this Paragraph shall release the owner or operator from the requirements for financial assurance for closure, post-closure care, or potential assessment and corrective action in accordance with Rule .0546 of this Section and Section .1800 of this Subchapter.

History Note: *Authority G.S. 130A-294;*
Eff. January 1, ~~2007.~~2007;
Readopted Eff. July 1, 2020.

15A NCAC 13B .0547 is proposed for readoption as a repeal as follows:

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~~

~~(c) 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)(c) 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;*
Eff. January 1, ~~2007.~~2007;
Repealed Eff. July 1, 2020.

15A NCAC 13B .1601 is proposed for readoption with substantive changes as follows:

SECTION .1600 - REQUIREMENTS FOR MUNICIPAL SOLID WASTE LANDFILL FACILITIES (MSWLFS)

15A NCAC 13B .1601 ~~PURPOSE, SCOPE,~~ PURPOSE AND APPLICABILITY

(a) ~~Purpose.~~ The ~~purpose~~ rules of this Section ~~is to regulate~~ shall govern the permitting procedures, siting, design, construction, performance standards, operation, ~~closure~~ closure, and post-closure of all municipal solid waste landfill (MSWLFs) facilities and units. ~~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)~~(b) ~~Applicability.~~ Owners and operators of ~~new and existing~~ landfill facilities that include ~~including~~ a MSWLF unit(s) shall conform to the requirements of this Section as follows:

(1) ~~Municipal solid waste landfill~~ MSWLF units ~~which~~ that did not receive solid waste after October 9, 1991 are exempt from the rules of this Section and shall comply with the Conditions of the Solid Waste Permit, the Conditions of Permit, and Rule .0510 of this Subchapter. ~~.0510.~~

(2) MSWLF units that received solid waste after October 9, 1991 but stopped receiving waste before October 9, 1993 are exempt from the rules of this Section with the exception of Rule .1627(c)(1) of this Section, and shall comply with the Solid Waste Permit, the Conditions of Permit, and Rule .0510 of this Subchapter. ~~.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.~~

(3)~~(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. MSWLF units that received waste on or after October 9, 1993, and are permitted by the Division after August 1, 2007 are subject to the requirements of this Section and the requirements pursuant to G.S. 130A-295.6 and S.L. 2007-550.

~~(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.~~

~~(v) Waste received at the MSWLF unit shall cease prior to April 9, 1994.~~

~~(vi) 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.~~

~~(4) 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.~~

(c) ~~(d) The owner or operator~~ Owners or operators of a MSWLF facility shall comply with any other applicable ~~Federal and State~~ federal, State, and local laws, rules, regulations, or other requirements.

(d) Incorporation by Reference. References to Title 40 of the U.S. Code of Federal Regulations (CFR) in this Section are incorporated by reference including subsequent amendments or editions and can be obtained free of charge at www.ecfr.gov.

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;
Amended Eff. April 1, ~~1994.~~1994;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1602 is proposed for readoption with substantive changes as follows:

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.~~ The definitions in Article 9 of Chapter 130A of the General Statutes, the definitions in Rule .0101 of this Subchapter, and the following definitions shall apply to the rules of this Section.

(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 groundwater. ~~significant quantities of ground water to wells or springs.~~

(4) "Areas susceptible to mass movement" means those 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(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 may include landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall.

(5)~~(4)~~ "Base liner system" means the liner system installed on the MSWLF unit's foundation to control the flow of leachate.

(6)~~(5)~~ "Cap system" means a liner system installed over the MSWLF unit to minimize infiltration of precipitation and contain the wastes.

(7) “Gas condensate” means the liquid generated as a result of gas recovery processes at a MSWLF unit.

~~(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"~~”Groundwater” means water below the land surface in a zone of saturation.

~~(9) "Hazardous Waste" means a solid waste as defined in G.S. 130A-290 (a)(8). "Hazardous Waste" does not include those solid wastes excluded from regulation pursuant to 40 CFR 261.4, incorporated by reference in 15A NCAC 13A .0006. "Hazardous Waste" does include hazardous waste generated by conditionally exempt small quantity generators as defined in 40 CFR 261.5, incorporated by reference in 15A NCAC 13A .0006.~~

(9)~~(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.~~

(10) "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 may include sinkholes, sinking streams, caves, large springs, and blind valleys.

(11)~~(12)~~ "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 permit issued in accordance with this Section. ~~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.~~

(12)~~(13)~~ "Landfill unit" means a discrete area of land or an excavation that receives a particular type of waste such as construction and demolition, 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.~~257.2. Such a landfill may be publicly or privately ~~owned.~~ owned, and may be located at a construction and demolition solid waste landfill facility, a MSWLF, an industrial landfill facility, or other waste management facility.

~~(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.~~

(13)~~(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.

(14) "Liquid waste" means any waste material that is determined to contain "free liquids" as defined by EPA SW-846 Test Method 9095B (Paint Filter Liquids Test), which is incorporated by reference

including subsequent amendments or editions; and can be obtained free of charge at the US EPA website at www.epa.gov/hw-sw846/sw-846-test-method-9095b-paint-filter-liquids-test.

(15)~~(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 257.2.~~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.~~

(16) "Poor foundation conditions" means those areas where features exist that indicate that a natural or man-induced event may result in a loss or reduction of foundation support for the structural components of a MSWLF unit(s).

(17)~~(20)~~ "Project engineer" means ~~the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who~~ a licensed professional engineer that represents the permittee and 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 associated plans and the ~~Rules specified in~~ rules of this Section. All certifications ~~must~~ shall bear the seal and signature of ~~the~~ a licensed 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.~~

(18) "Seasonal High Water Table" or "SHWT" means the highest level of the uppermost aquifer 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.

(19) "Structural components" means liners, leachate collection systems, final covers, systems that manage rainwater that drains over land from or onto any part of the facility or unit, and any other component used in the construction and operation of the MSWLF facility.

(20) "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 may include poor foundation conditions, areas susceptible to mass movements, and Karst terranes.

(21)~~(23)~~ "Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an ~~aquifer,~~ aquifer as well ~~as,~~ 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.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1603 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1603 GENERAL APPLICATION REQUIREMENTS AND PROCESSING

(a) ~~Applicability.~~ An owner and operator of a MSWLF ~~proposed or existing~~ facility shall submit an application document as detailed in Rule .1617 of this Section ~~according to the~~ in accordance with the following criteria and scheduling requirements: ~~requirements set forth in this Paragraph.~~

(1) New permit.~~facility.~~ An applicant for a new permit ~~owner and operator proposing to establish a MSWLF facility according to~~ as defined by G.S. 130A-294(a3)(1) ~~the following criteria~~ shall submit a ~~Site Study~~ site study and ~~subsequently,~~ subsequently an application for a permit to construct as set forth in Rule .1617(a) of this Section. ~~Paragraph (a) of Rule .1617.~~ The Division shall review all permit applications in accordance with Rule .0203 of this Subchapter. An application for a new permit is subject to the application fees set forth in G.S. 130A-295.8(d2).

~~(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. ~~permit.~~ The owner or operator shall submit an application to amend the permit to construct in accordance with Rule .1617(c) of this Section for the following circumstances:

(A) A subsequent stage of landfill development. A permit to construct issued in accordance with Paragraph (c) of this Rule approves the life-of-site development of the MSWLF unit indicated in the facility plan plus a set of plans, defined in Rule .1604(b)(1) of this Section as the Division Approved Plans, submitted by the applicant for either the entire MSWLF unit or a portion of the MSWLF unit. ~~a facility plan for the life of the MSWLF facility and a set of plans for the initial phase of landfill development.~~ For any subsequent stage of landfill development that the applicant has not included in the plans required by Rule .1604(b)(1) of this Section for any prior stage of landfill development, the ~~The~~ owner ~~and~~ or 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 amended permit application no less than 180 days prior to the date scheduled for commencing construction. ~~application:~~

(B) A change in ownership or corporate structure of a permitted MSWLF facility. The owner or operator shall notify the Division in writing within 30 days of a change in ownership or corporate structure in accordance with G.S. 130A-295.2(g).

~~(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 Rule .1617(d) of this Section.~~Paragraph (c) of Rule .1617.~~

(4) Permit for Closure and Post-Closure Care. The owner or operator shall submit an application for a closure and post-closure care permit to the Division when the facility reaches its final permitted elevations and prior to initiating closure activities for the final permitted MSWLF unit at the facility in accordance with Rule .1617(e) of this Section. Owners or operators that closed all MSWLF units at the facility prior to the readopted effective date of this Rule shall not be required to submit a permit application for closure and post-closure. The Division shall issue a permit for closure and post-closure for these facilities based on the most recent permit application submittal, if a closure and post-closure permit has not already been issued.

~~(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 requirements. ~~guidelines.~~ All applications and plans required by this Section shall be prepared in accordance with the following:~~following guidelines:~~

(1) The ~~initial~~ application shall:

(A) ~~Contain~~ contain a cover sheet, stating the project title and location, the applicant's name, and the engineer's name, address, signature, date of ~~signature~~signature, and seal; ~~and~~

(B) ~~Contain~~ contain a statement defining the purpose of the submittal signed and dated by the applicant; ~~applicant.~~

~~(2) The text of the application shall:~~

~~(A) Be submitted in a three ring binder;~~

(C)~~(B)~~ ~~Contain~~ contain a table of contents or index outlining the body of the application and the appendices;

(D)~~(C)~~ ~~Be~~ be paginated consecutively; and

(E)~~(D)~~ ~~Identify~~ identify any revised text by noting the date of revision on the page.

(2)~~(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.~~

(A)~~(B)~~ ~~The~~ 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.~~seal; and

(B)~~(C)~~ ~~Where the requirements do not explicitly specify a minimum scale,~~ maps and drawings shall be prepared at a scale that ~~which adequately~~ illustrates the subject requirements, and that is legible if printed at a scale of 22 inches by 34 inches. ~~requirement(s).~~

(3)~~(4)~~ Number of copies. An applicant shall submit ~~a minimum of~~ one electronic copy of the application to the Division in portable document format (pdf).~~five copies of each original application document and any revisions to the Division.~~ The Division may request ~~additional copies as necessary.~~ that the applicant submit no more than three paper copies of the application in three-ring binders.

(c) Permitting and public information procedures.

(1) ~~Purpose, Scope~~ Purpose and Applicability.

(A) Purpose. ~~The~~ During the permitting ~~process~~ process, the Division shall provide for public review of and input to permit documents containing the applicable design and operating conditions. ~~conditions and~~ The Division 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.~~

(B)~~(C)~~ Applicability. Applications for a new permit ~~Permit to Construct a new facility~~ as defined in G.S. 130A-294(a3)(1), ~~or permit renewals for an existing facility~~ or for 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)(4)(A)~~ of this Rule are not subject to the requirements of this Paragraph.

(2) Draft Permits.

(A) The Division shall review all permit applications for compliance with the rules of this Section and Rule .0203 of this Subchapter. Once an application is complete, the Division shall either issue a notice of intent to deny the permit to the applicant or prepare a draft permit. ~~tentatively decide whether the permit should be issued or denied.~~

(B) If the Division ~~decides the permit should be denied,~~ issues a notice of intent to deny the permit ~~shall be sent~~ to the ~~applicant. Reasons~~ applicant, the notice shall include the reasons for permit denial ~~shall be~~ in accordance with Rule .0203(e) of this ~~Subchapter.~~ Subchapter and G.S. 130A-294(a)(4)c.

~~(C) If the Division tentatively decides the permit should be issued, a draft permit shall be prepared.~~

(C)~~(D)~~ If the Division prepares a draft permit, the ~~A~~ draft permit shall contain ~~(either expressly or by reference)~~ all applicable terms and conditions for the permit.

(D)~~(E)~~ All draft permits shall be subject to the procedures of Subparagraphs (3) through (9)~~(3), (4), (5), (6), (7) and (8)~~ of this Paragraph, unless otherwise specified in those Subparagraphs.

(3) Fact Sheets. The Division shall prepare a fact sheet for every draft permit, and shall send this fact sheet to the applicant and post the fact sheet on the Division website. The fact sheet shall include:

(A) a brief description of the type of facility or activity that is the subject of the draft permit;

(B) a description of the area to be served, the volume and characteristics of the waste stream, and a projection of the useful life of the landfill;

(C) a brief summary of the basis for the draft permit conditions, including references to statutory or regulatory provisions and supporting references to the permit application;

(D) the beginning and ending dates of the comment period under Subparagraph (4) of this Paragraph;

(E) the address where comments will be received;

(F) the name, phone number, and e-mail address of a person to contact for additional information;

(G) the procedures for requesting a public hearing; and

(H) other procedures by which the public may participate in the decision, such as social media or a web-based meeting, if the Division or the applicant elects to use such procedures.

~~(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 Hearings. ~~Comment Period.~~

(A) 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.

(B) No public notice is required when a request for a permit modification is denied.

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

(D) Public notices may describe more than one permit or permit action.

(E) 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.

(F) The Division shall give public notice of a public hearing at least 15 days before the hearing; and the notice 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 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.

(G) Public notice of activities described in Part (A) of this Subparagraph shall be given by publication on the Division website; by posting in the post office and public places of the municipalities nearest the site under consideration; or publication by a local news organization, and by any other method deemed necessary or appropriate by the Division, such as posting by the Division on other State or local government websites or social media, to give actual notice of the activities to persons potentially affected.

~~(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.~~

(H)~~(i)~~ ~~General Public Notices.~~ All public notices issued under this Part shall contain the ~~following minimum information:~~

~~(I) Name,~~name, address and phone number of the office processing the permit action for which notice is being given;

~~(II) Name~~ name and address of the owner and the operator applying for the permit; ~~permittee or permit applicant and, if different, of the facility or activity regulated by the permit;~~

~~(III) A~~ 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~~ 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~~ unless a hearing has already been scheduled,~~scheduled)~~, and other procedures by which the public may participate in the ~~final~~ permit decision;

~~(V) Name,~~ the name, address, and telephone number of a Division contact ~~person~~ from whom interested persons may obtain further information; and ~~information, including copies of draft permits and fact sheets;~~

~~(VI) A~~ a description of the time frame and procedure for making an approval or disapproval decision of the application. ~~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. 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. ~~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.~~

~~(i)~~ The Division shall hold a public hearing on a draft permit(s) when a hearing is requested. ~~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~~The Division may ~~be~~ set ~~upon~~ the time allowed for oral ~~statements,~~ statements; and may require the submission of statements in writing.~~writing may be required.~~ The Division shall extend 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~~ Division may also extend the comment period by so stating at the ~~hearing.~~ hearing, when information is presented at the hearing which indicates the importance of extending the period to receive additional comments, to allow potential commenters 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. The Division shall publish the end date of the extended comment period on the Division's website.

(C) ~~A tape~~ the Division shall make available to the public a recording or written transcript of the hearing ~~shall be made available to the public.~~ upon request.

(7) Reopening of the Public Comment Period.

(A) ~~If any~~ In response to data, information, or arguments ~~submitted~~ received during the public comment period, ~~period appear to raise substantial new questions concerning a permit action,~~ the Division may ~~take one or more of the following actions:~~

~~(i) Prepare~~ prepare a ~~new~~ revised draft permit ~~permit, appropriately modified,~~ under Subparagraph (2) of this Paragraph;

~~(ii) Prepare~~ prepare ~~a fact sheet or~~ revised fact sheet under Subparagraph (3) of this ~~Paragraph~~ Paragraph, and reopen or extend the comment period under Subparagraph (4) of this Paragraph. ~~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 information that was revised in the draft permit following the original comment period. substantial new questions that caused its reopening. The public notice shall be in accordance with under Subparagraph (4) of this Paragraph and 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 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:shall

(i) Specify specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change.change; and

(ii) Briefly The response shall also briefly describe and respond to all significant comments pertaining to the requirements in on the draft permit raised during the public comment period, or during any public hearing.

(B) The Division shall publish the response to comments on the Division website upon request. 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 this Subchapter.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;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1604 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1604 GENERAL REQUIREMENTS FOR MSWLF FACILITIES

(a) ~~Applicability.~~ Permits issued by the Division for ~~new and existing~~ MSWLF facilities ~~are~~ 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.~~ Plans. Permits issued ~~subsequent to~~after March 9, 1993 shall incorporate ~~a~~ the Division approved plans. ~~plan.~~

(A) The scope of the Division approved plans ~~plan~~ shall ~~be limited to~~ include the information necessary to comply with the requirements set forth in Rule .1617 of this Section.

(B) The Division approved plans ~~are~~ shall be subject to and may be limited by the conditions of the permit.

(C) The Division approved plans for a MSWLF ~~new facility or permit renewal of an existing facility~~ shall be described in the permit and shall include ~~the following:~~

~~(i)~~ the Facility Plan required by Rule .1619 of this Section; ~~plan;~~

~~(ii)~~ the Engineering Plan required by Rule .1620 of this Section; ~~plan and~~ the Construction Quality Assurance Plan required by Rule .1621 of this Section; ~~Plan;~~

~~(iii)~~ the Operation Plan required by Rule .1625 of this Section; ~~plan;~~

the Closure and Post-Closure Plan required by Rule .1629 of this Section; and

~~(iv)~~ the Monitoring Plans required by Rules .1630 through .1637 of this Section. ~~plan; and~~

~~(v) Closure and post-closure plan.~~

(2) Permit provisions. All ~~disposal~~ MSWLF facilities shall conform to the specific conditions set forth in the permit and the following general 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,~~ 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,~~ Division any ~~relevant~~ information which the Division may request to determine whether cause exists for modifying or ~~revoking~~ suspending the ~~this~~ permit, or to determine compliance with the ~~this~~ permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept ~~by~~ under the conditions of this permit.

(D) Recordation Procedures. The permittee shall comply with the requirements of Rule .0204 of this Subchapter ~~in order~~ for a new permit to be effective.

(E) Need to Halt or Reduce Activity.~~Activity Not a Defense. It is not~~ 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 ~~this~~ permit.

(F) Permit Actions. A permit may be modified, ~~revoked and~~ reissued, revoked, suspended, or terminated ~~for cause~~ in accordance with G.S. 130A-23. The filing of a request by the permittee for a permit modification, ~~modification or termination,~~ or a notification of planned changes or anticipated noncompliance, does not stay any existing permit condition.

(G) No Property Rights. The ~~Commission~~ Division does not intend for a permit to convey any property rights of any sort or any exclusive privilege. A permit for a solid waste management facility is ~~not~~ transferable only with prior approval of the Department in accordance with G.S. 130A-294(a1).

(H) 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.

(I) 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 ~~(and related appurtenances)~~ which are installed or used by the permittee to achieve compliance with the conditions of ~~this~~ 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.

(J) Inspection and Entry. The permittee shall allow the Department to ~~Division, or an authorized representative, to:~~

~~(i) Enter~~ enter the permittee's premises where a regulated ~~facility~~ unit or activity is located or conducted, or where records are kept under the conditions of the ~~this permit;~~permit.

~~(ii) Have~~ The Department shall have access to ~~a~~ copy ~~of~~ any records required to be kept under the conditions of the permit.~~this permit;~~

~~(iii) Inspect~~ The permittee shall allow the Department to inspect any facilities, equipment ~~(including~~including practices, operations, or monitoring and control ~~equipment),~~equipment ~~practices or operations~~ that are required or regulated by the facility permit or the rules of this Subchapter. ~~Division;~~

~~(iv) Sample~~ For the purpose of assuring permit compliance or as otherwise authorized by G.S. 130A Article 9, the permittee shall allow the Department to sample or monitor, at any location under the operation or control of the permittee, any materials, substances, wastes, leachate, soil, groundwater, surface water, gases, or gas condensates, or ambient air if the Department gives notice to the permittee 24 hours prior to sampling or monitoring. ~~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~~ The permittee shall allow the Department to take photographs for ~~the purpose of~~ documenting items of compliance or noncompliance at permitted facilities. ~~waste management units, or where appropriate to protect legitimate proprietary interests,~~ At the request of the Department, the permittee shall take such photographs and submit them to the Department. ~~require the permittee to make such photos for the Division.~~

(K) 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~~ the date, place, and time of sampling or measurements;

~~(II) The~~ the individual(s) who performed the sampling or measurements;

~~(III) The~~ the date(s) analyses were performed;

~~(IV) The~~ the individual(s) who performed the analyses;

~~(V) The~~ the analytical techniques, methods, and equipment used; ~~analytical techniques or methods used (including equipment used);~~ and

~~(VI) The~~ the results of such analyses.

(L) 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~~ Results of environmental monitoring required in accordance with this Subchapter shall be reported at the intervals specified in the permit.

~~(iii)~~ The permittee shall ~~report orally~~ give notice to the Division via telephone or e-mail 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 permittee 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~~ the permittee shall submit the corrected ~~such~~ facts or ~~information.~~ information to the Division.

(M) Survey for Compliance.

~~(i)~~ Within 60 days of the permittee's receipt of the Division's written ~~request,~~ request for a survey, the permittee shall ~~cause to be~~ have a survey 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:~~ Division

~~(I)~~ ~~If~~ if there is reason to believe that operations are being conducted in a manner that deviates from the Division approved plans; or

~~(II)~~ ~~As~~ as a periodic verification (but no more than annual) that operations are being conducted in accordance with the Division approved plans.

~~(iii)~~ If required by G.S. 89C, any survey performed pursuant to this Part shall be performed by a licensed professional land surveyor. ~~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 or monitoring of the MSWLF unit(s).~~unit and shall be approved by the Division.~~ Any proposed additional activities shall be submitted to the Division for review, approval, and permitting, as applicable, before construction and operation.

~~(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.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1617 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1617 APPLICATION REQUIREMENTS FOR MSWLF FACILITIES

(a) New permit as defined in G.S. 130A-294(a3)(1)a, c, d and e. ~~Permit for a new facility.~~ An applicant for a new MSWLF permit as defined in G.S. 130A-294(a3)(1)a, c, d and e ~~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~~ a facility plan that describes comprehensive development of the MSWLF facility prepared in accordance with Rule .1619 of this Section;

(B) ~~An~~ an engineering plan that is prepared for the initial phase of landfill development prepared in accordance with Rule .1620 of this Section;

(C) ~~A~~ a construction quality assurance plan prepared in accordance with Rule .1621 of this Section;

(D) ~~An~~ an operation plan prepared in accordance with Rule .1625 of this Section;

(E) ~~A~~ a closure and post-closure plan prepared in accordance with Rule .1629 of this Section; ~~and~~

(F) ~~A water quality~~ monitoring plans ~~plan~~ prepared ~~as set forth in Paragraph (b) of~~ in accordance with Rule ~~.1623.~~ .1623(b) of this Section; and

(G) a corporate ownership organization chart and an environmental compliance history for the applicant in accordance with G.S. 130A-295.3.

(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) New permit as defined in G.S. 130A-294(a3)(1)b. A complete application for a new MSWLF permit as defined in G.S. 130A-294(a3)(1)b shall contain:

(1) a facility plan that describes the comprehensive development of the MSWLF facility prepared in accordance with Rule .1619 of this Section;

(2) local government approval in accordance with Rule .1618(c)(5) of this Section; and

(3) a corporate ownership organization chart and an environmental compliance history for the applicant in accordance with G.S. 130A-295.3.

(c)~~(b)~~ Amendment to the permit. A complete application for an amendment to the permit shall contain:

(1) ~~An~~ an updated engineering plan prepared in accordance with Rule .1620 of this Section;

(2) ~~An~~ an updated construction quality assurance plan prepared in accordance with Rule .1621 of this Section;

(3) ~~An~~ an updated operation plan prepared in accordance with Rule .1625 of this Section;

(4) ~~An~~ an updated closure and post-closure plan prepared in accordance with Rule .1629 of this Section; ~~and~~

(5) ~~A~~ an updated ~~water quality~~ monitoring plan prepared in accordance with Rule .1623(b)(3) of this Section; and ~~as set forth in Paragraph (b) of Rule .1623.~~

(6) an updated corporate ownership organization chart and an updated environmental compliance history for the applicant in accordance with G.S. 130A-295.3.

(d)~~(c)~~ 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 shall identify the requirement(s) proposed for modification and provide ~~complete~~ information ~~in order to demonstrate~~ that demonstrates compliance with the ~~applicable requirements~~ Rules of this Section.

(e) A permit for closure and post-closure. An application for closure and post-closure 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; and

(3) an updated closure plan and updated post-closure plan prepared in accordance with Rule .1629 of this Section.

(4) an updated corporate ownership organization chart for the applicant.

~~(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;~~

~~(4) An operation plan prepared in accordance with Rule .1625 of this Section;~~

~~(5) A closure and post-closure plan prepared in accordance with Rule .1629 of this Section; and~~

~~(6) 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.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1618 is proposed for readoption with substantive changes as follows:

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 that ~~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~~ the site is deemed suitable for establishing a MSWLF unit and the applicant is authorized to prepare an application for a permit to construct in accordance with Rule .1617 of this Section and the site-specific conditions and design requirements stated in the notification, if any; ~~and the General Site Conditions and Design Requirements prescribed by the Division;~~ or

(2) ~~The~~ 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 Resource Conservation and Recovery Act, as amended. ~~Act.~~

(b) Scope. The site ~~is~~ shall be the land ~~which~~ that is proposed for the landfill facility. The site study shall present ~~presents~~ a characterization of the land, incorporating various investigations and requirements pertinent to suitability of a MSWLF facility. The scope of the site study shall include ~~includes~~ criteria associated with the public health and welfare, and the environment. The economic feasibility of a proposed site ~~is not~~ shall not be within the scope of this study. ~~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, if required by G.S. 89C, 89E, or 89F and not under the purview of another licensed profession, ~~and must~~ shall be prepared by licensed professional engineers, licensed geologists, licensed soil scientists, or licensed professional land surveyors. ~~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.~~ MSWLF unit(s) shall comply with the location restrictions set forth in Subparagraphs (c)(4) through (c)(6) of this Rule. 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 shall be addressed in the site study.

(c) The site study prepared for a MSWLF facility shall include the information required by this Paragraph. ~~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~~ 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~~ general topography and features as illustrated on the most recent U.S.G.S. ~~Topographic~~ topographic map, 7.5 Minute Series, horizontal scale of at least one inch equals 2000 feet;

(B) ~~Proposed~~ proposed landfill facility location;

(C) ~~Public~~ public water supply wells, surface water intakes, and service areas;

(D) ~~Residential~~ residential subdivisions;

(E) ~~Waste~~ waste transportation routes; and

(F) ~~Public~~ public use airports and runways.

(2) Local characterization study. The local study area includes the landfill facility and a ~~2000-foot~~ 2,000-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~~ shall identify the following:

(A) ~~The~~ the entire property proposed for the disposal site and any on-site easements;

(B) ~~Existing~~ existing land use and zoning;

(C) ~~The~~ the location of private residences and schools;

(D) ~~The~~ the location of commercial and industrial buildings, and other potential sources of contamination;

(E) ~~The~~ the location of potable wells and available documentation regarding well completion and production rate;

(F) ~~Historic~~ historic sites; and

(G) ~~The~~ 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.

(3) Site Hydrogeologic Report. The study shall be prepared in accordance with the requirements set forth in Rule .1623(a) of this Section.

(4) Location Restrictions. A report shall be prepared demonstrating compliance with the criteria in Rule ~~.1622;~~.1622 of this Section; and the report shall incorporate the proposed facility plan ~~and~~ 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)~~(6)(a)~~ of this Section.

(5) Local government approvals for MSWLFs.~~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.~~ If the permit applicant is a unit of local government and the proposed MSWLF site is located within the permit applicant's jurisdiction, the approval of the local 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 shall 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 MSWLF site shall obtain a franchise in accordance with G.S 130A-294(b1) from each unit of local government in whose jurisdiction the site is located. A copy of the franchise shall be submitted to the Division as part of the site study.

(C)~~(i)~~ Prior to issuance of approval or franchise, ~~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. The local government where the MSWLF is to be located shall provide a public notice of the meeting at least 30 days prior to the meeting.

~~(ii)~~ For the purposes of this ~~Subpart,~~ Part, 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.~~Part.

(D)~~(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.

(E)~~(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.

(F)~~(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~~ with 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.~~

(6) Proposed Facility Plan. A conceptual plan for the development of the facility including drawings and a report ~~must~~ shall be prepared which incorporates the summary findings of the geologic and

hydrogeologic report as set forth in ~~Subparagraph (a)(13) of Rule .1623~~ Rule .1623(a)(13) of this Section and includes the drawings and reports described in Rule .1619 (d)(1), (d)(2), (e)(1), (e)(2), (e)(3), ~~and (e)(5).~~ (e)(5), (e)(6), and (e)(7) of this Section.

~~(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.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1619 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1619 FACILITY PLAN

(a) Purpose. ~~As required under Rule .1617 of this Section, a~~ A permit applicant shall prepare a facility plan which meets the requirements of this Rule.

(b) Scope.

(1) The facility plan shall define ~~defines~~ the comprehensive development of the property proposed for permit or described in the permit of an existing facility. The plan shall include ~~includes~~ a set of drawings and a report ~~which~~ that 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 shall span ~~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 shall define ~~defines~~ the waste stream proposed for management at the MSWLF facility. If different types of landfill units or non-disposal activities ~~facilities~~ are included in the facility design, the plan ~~must~~ shall 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~~ in accordance with Rule .1618(a)(1) of this Section for a new facility.~~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~~ MSWLF unit shall be defined ~~in the facility plan~~ as follows 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 describes ~~provides no more than~~ approximately five years of operating capacity. An applicant may request a permit to construct for any number of phases up to the entire extent of the disposal boundary for the life-of-site.

(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~~ that plot site development shall be prepared on a topographic map representative of existing site conditions; and the map shall locate or delineate 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 a licensed professional land surveyor, if required by G.S. 89C.~~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.~~ Rule .1624(b)(3) of this Section and the maximum allowed disposal area set forth in Rule .1624(b)(17) of this Section.

(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~~ delineate the limits of grading, including borrow and stockpile areas;

(B) ~~Define~~ define phases of development ~~which do not exceed approximately~~ in increments of five years of operating ~~capacity;~~ capacity, up to the entire extent of the disposal boundary for the life-of-site;

(C) ~~Propose~~ propose base grades for the MSWLF unit(s);

(D) ~~Delineate~~ 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~~ propose final contours for the MSWLF unit(s) and facility features for ~~closure.~~ closure that comply with the maximum allowed height requirement of Rule .1624(b)(17) of this Section.

(3) Landfill Operation. The following information related to the long-term operation of the MSWLF units shall be included in facility drawings:

(A) ~~General~~ general grade and flow direction for the drainage layer component of the leachate collection system;

(B) ~~Size,~~size, location, and general grade for the leachate piping system, including on-site pipelines to leachate management facilities;

(C) ~~Proposed~~ 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~~ 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~~ the types of waste specified for disposal;

(B) ~~Average~~ average monthly disposal rates and estimated variance;

(C) ~~The~~ the area served by the facility;

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

(E) ~~Equipment~~ 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 ~~be:~~

~~(i) Consistent~~ consistent with the facility drawings and disposal rates specified in the facility plan; and

~~(ii) Representative~~ representative of operational requirements and conditions.

(B) The conclusions shall provide accurate volumetric estimates ~~of:~~of

~~(i) Total~~ total operating ~~capacity.~~ capacity that does not exceed the maximum allowed capacity defined in Rule .1624(b)(17) of this Section;.

~~(ii) Operating~~ operating capacity for each stage~~phase~~ of development;

~~(iii) In-place~~in-place ratio of waste to soil;

~~(iv) Available~~ available soil resources from on-site or specific off-site sources;

~~(v) Required~~ required quantities of soil for landfill construction, operation, and closure; and

~~(vi) The~~ 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~~ shall ~~consider:~~ consider surge volumes generated by storm events; and

~~(i) Average~~ average monthly values for leachate generation representative of the landfill's environment and operation ~~using:~~using empirically derived estimates, or

~~(I) Empirically derived estimates; or~~

~~(II) For~~ 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, and shall include ~~including:~~

~~(i) Leachate~~ leachate pipeline operating capacity;

~~(ii) Capacity~~ capacity of the storage and if applicable, the treatment facilities; and

~~(iii) Final~~ 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. A description of any special engineering features specific to the landfill that the applicant is proposing shall be provided.

(6) Traffic study. A traffic study and NC Department of Transportation certification shall be prepared as required by G.S. 130A-295.5 and in accordance with the effective date and applicability set forth in S.L. 2007-550.

(7) Study of Environmental Impacts. A study of environmental impacts shall be conducted as required by G.S. 130A-295.6(a).

History Note: *Authority G.S. 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1620 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1620 ENGINEERING PLAN

(a) Purpose. The engineering plan shall incorporate ~~incorporates~~ the detailed plans and specifications relative to the design and performance of the ~~landfill's~~ MSWLF's containment and environmental control systems. The engineering plan shall set~~This plan sets~~ forth the design parameters and construction requirements for the components of the ~~landfill's~~ MSWLF's systems and ~~establishes~~ shall establish the responsibilities of the design engineer. The engineered components ~~are~~ shall be 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~~ that meets the requirements of this Rule.

(b) Responsibilities of the design engineer. The engineering plan shall meet the requirements of this Rule and, if required by G.S. 89C, the ~~The engineering~~ plan shall be prepared by a licensed professional engineer. ~~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~~ 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 the proposed area of development ~~a phase of development not to exceed~~ that provides no less than ~~approximately~~ five years of operating ~~capacity,~~ capacity and no more than the total facility capacity, consistent with the development phases and design criteria defined in the facility plan. The ~~original and subsequent~~ plans ~~must~~ shall incorporate the design of leachate management and other environmental control facilities. The engineering plan shall contain a report and a set of drawings ~~which~~ that ~~consistently~~ represent the engineering ~~design.~~design in accordance with Paragraph (d) of this Rule.

(d) An engineering report ~~must~~ shall contain:

(1) An analysis of the facility design that conforms to:

(A) ~~The~~ the standards for the foundation and the base liner system set forth in Rule .1624 of this Section;

(B) ~~The~~ the standards for the cap system set forth in ~~Paragraph (c) of Rule .1627~~ Rule .1627(c) of this Section; and

(C) ~~The~~ 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~~ a discussion of the analytical methods used to evaluate the design;

(B) ~~Definition~~ definition of the critical conditions evaluated and assumptions made;

(C) ~~A~~ a list of technical references used in the evaluation; and

(D) ~~Completion~~ 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.~~Paragraph.

(4) A copy of the Design Hydrogeologic Report prepared in accordance with ~~Paragraph (b) of Rule .1623.~~Rule .1623(b) of this Section.

(e) Engineering drawings ~~must~~ shall ~~clearly~~ illustrate:

(1) ~~Existing~~ existing conditions: site topography, features, existing disposal areas, roads, and buildings;

(2) ~~Grading~~ grading plans: proposed limits of excavation, subgrade elevations, boring locations, and intermediate grading for partial construction;

(3) ~~Base~~ base liner system: grades for top of composite liner, slopes, anchor configuration, and liner penetration locations and details;

(4) ~~Leachate~~ leachate collection system: base elevations, piping system grade and inverts, cleanouts, valves, sumps, top of protective cover elevations, and details;

(5) ~~Stormwater~~ stormwater segregation system: location and detail of features;

(6) ~~Cap~~ cap system: base and top elevations, landfill gas devices,~~collection,~~ infiltration barrier, surface water removal, protective and vegetative cover, and details;

(7) ~~Temporary~~ temporary and permanent sedimentation and erosion control plans;

(8) ~~Vertical~~ 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~~ additional engineering features and ~~details.~~ details if present.

History Note: *Authority G.S, 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1621 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1621 CONSTRUCTION QUALITY ASSURANCE PLAN

(a) ~~Purpose.~~ The construction quality control and quality assurance (CQA) plan ~~must~~ shall 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 .1624 of this Section. The CQA plan ~~must~~ shall 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: ~~include, but not be limited to:~~

(1) 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.

(2) Inspection activities. A description of all field observations, tests, equipment, and 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. ~~Section must be presented in the CQA plan.~~

(3) Sampling strategies. A description of all sampling protocols, sample size, methods for determining sample ~~locations~~ locations, and frequency of sampling; ~~sampling must be presented in the CQA plan.~~

(4) Documentation. A description of reporting ~~Reporting~~ requirements for CQA activities; and ~~activities must be described in detail in the CQA plan.~~

(5) Progress and troubleshooting meetings. ~~meetings, daily and monthly, must be addressed in the plan~~ A description of planned progress and troubleshooting meetings, including the frequency, shall be included in the CQA Plan. The meetings shall occur no less than twice per week, and the ~~contents~~ proceedings of the meetings ~~must~~ shall be documented.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1622 is proposed for readoption with substantive changes as follows:

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~~ Documentation ~~or~~ of approval by agencies other than the Division of ~~Solid~~ Waste Management may be ~~required.~~required to demonstrate compliance with specific criteria. 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. For purposes of this Rule, "airport" means a public-use airport open to the public without prior permission and without restrictions within the physical capacities of the available facilities.

(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.

[Note: The Federal Aviation Administration (FAA) enacted a prohibition on locating a new MSWLF near certain airports. Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Ford Act), Pub. L. 106–181 (49 U.S.C. 44718 note) prohibits the ''construction or establishment'' of new MSWLFs after April 5, 2000 within six miles of certain smaller public airports. See guidance in FAA Advisory Circular 150/ 5200–34, dated August 26, 2000. For further information, please contact the FAA.]

~~(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) Landfill units at facilities with permit or facility plan approval by the Division prior to June 1, 2006 ~~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~~ the carrying away of solid waste by flood waters. ~~so as to pose a hazard to human health and the environment.~~

(b) Landfill units permitted after August 1, 2007 shall meet the requirements of G.S. 130A-295.6(c)(1) in accordance with the effective date and applicability requirements of S.L.2007-550. ~~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. For purposes of this Rule, “wetland” or “wetlands” mean those areas that are defined in 40 CFR 232.2(r). MSWLF units permitted after August 1, 2007 shall meet the requirements of G.S. 130A-295.6(c)(2) in accordance with the effective date and applicability requirements of S.L.2007-550.

~~(a)~~ Landfill facilities permitted by the Division prior to June 1, 2006 ~~New MSWLF units and lateral expansions~~ shall not be located in wetlands, unless the owner or operator demonstrates the following for Division approval.~~can make the following demonstrations to the Division:~~

(a)~~(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.

(b)~~(ii)~~ The construction and operation of the MSWLF unit will ~~not:~~not

~~(A) Cause~~ cause or contribute to violations of any applicable State water quality ~~standard;~~ standard, and will not

~~(B) Violate~~ violate any applicable toxic effluent standard or prohibition under Section 307 of the Clean Water Act.~~Act;~~

(c)~~(C) Jeopardize~~ The construction and operation of the MSWLF unit 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, and will not ~~1973; and~~

~~(D) Violate~~ violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

(d)~~(iii)~~ The MSWLF unit will not cause or contribute to ~~significant~~ degradation of wetlands.

(e) The owner or operator shall demonstrate the integrity of the MSWLF unit and its ability to protect ecological resources by addressing the following factors:

(i)~~(A)~~ Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the MSWLF unit;

(ii)~~(B)~~ Erosion, stability, and migration potential of dredged and fill materials used to support the MSWLF unit;

(iii)~~(C)~~ The volume and chemical nature of the waste managed in the MSWLF unit;

(iv)~~(D)~~ Impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;

(v)~~(E)~~ The potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and

(vi)~~(F)~~ Any additional factors ~~factors, as necessary,~~ to demonstrate that ecological resources in the wetland are protected ~~sufficiently protected.~~

~~(iv) To~~ to the extent required under Section 404 of the Clean Water Act or applicable State wetlands laws. ~~laws,~~

(f) The owner or operator shall 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 Sub-Items (a) through (d) of this Item,~~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.~~wetlands); and~~

(g)~~(v)~~ The owner or operator shall also demonstrate that ~~Sufficient~~ sufficient information is available to make a reasonable determination with respect to each of the demonstrations required by this Rule.~~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~~units, existing MSWLF units, and lateral expansions~~ ~~located~~ proposed for location 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 ~~factors, at a minimum,~~ when determining whether an area is unstable:

(a)~~(i)~~ ~~On-site~~ on-site or local soil conditions that may result in significant differential settling;

(b)~~(ii)~~ ~~On-site~~ on-site or local geologic or geomorphologic features; and

(c)~~(iii)~~ ~~On-site~~ 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 fluction, 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.~~

(7) Cultural Resources. A ~~new~~ MSWLF unit ~~or lateral expansion~~ shall not damage or destroy ~~an archaeological or historical property.~~ property of natural or historical significance that has been listed on the National Register of Historic Places or included on the Study List for the Register. The Department of Natural and Cultural Resources shall determine archeological or historical significance. To ~~aid in making~~ make a determination as to whether the property is of archeological or historical significance, the Department of Natural and Cultural Resources may request that the owner or operator ~~to~~ perform a site-specific survey ~~which~~ that shall be included in the Site Study.

(8) State Nature and Historic Preserve. A ~~new~~ MSWLF unit ~~or lateral expansion~~ shall not have an adverse ~~impact~~ 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.

(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, 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 .0200.~~2B .0200 "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."~~

(b) Any ~~new~~ MSWLF unit ~~or lateral expansion, which shall~~ that proposes to discharge leachate to surface waters ~~at the landfill facility and must~~ shall obtain a National Pollution Discharge Elimination System (NPDES) Permit from the Division of Water Resources ~~Environmental Management~~ pursuant to Section 402 of the United States Clean Water Act, and shall 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 .0200.~~2B .0200 "Classifications and Water Quality Standards Applicable To Surface Waters Of North Carolina."~~

(10) 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.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1623 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1623 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATIONS FOR MSWLF FACILITIES

(a) Site Hydrogeologic Report. In accordance with Rule .1618(c)(3) of this Section, a permit applicant shall conduct a hydrogeologic investigation and prepare a report. An investigation ~~is required to~~ shall assess the geologic and hydrogeologic characteristics of the proposed site to ~~determine:~~ 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~~groundwater flow paths and rates for the uppermost aquifer. The report shall provide an understanding of the relationship of the site ~~ground-water~~groundwater flow regime to local and regional hydrogeologic features ~~features,~~ with special emphasis on the relationship of MSWLF units to ~~ground-water~~groundwater receptors (especially drinking water wells) and to ~~ground-water~~groundwater 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,~~ provide 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~~ topographic setting, springs, streams, drainage features, existing or abandoned wells, rock ~~outcrops,~~ outcrops ~~(including~~ including trends in strike and dip,~~dip),~~ and other features that may affect site suitability or the ability to effectively monitor the site; and

(B) ~~Ground-water~~groundwater discharge features. For a proposed landfill unit where the owner or operator does not control the property from any landfill unit boundary to the controlling, downgradient, groundwater discharge features, additional borings, geophysical surveys, or other hydrogeological investigations shall be required to characterize the nature and extent of groundwater flow; and ~~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).~~

(C) the hydrogeological properties of the bedrock, if the water table of the uppermost aquifer on any portion of the site is in the bedrock. For the purpose of this Rule, bedrock means 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~~groundwater 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~~ There shall be no less than an average of one boring for each ~~ten~~ 10 acres of the proposed landfill facility.~~facility, unless otherwise authorized by the Division.~~ All borings intersecting the water table shall be converted to piezometers or monitoring ~~wells.~~ wells in accordance with 15A NCAC 02C .0108. Boring logs, field logs and notes, and well construction records for all onsite borings, wells, and piezometers shall be placed in the operating record, and shall also be provided to the Division upon request. Field logs and notes shall be legible; and may be typewritten.

(4) A testing program for the borings that ~~which~~ describes the frequency, distribution, and type of samples taken and the methods of analysis, such as ASTM Standards at https://www.astm.org, ~~(ASTM Standards or test methods approved by the Division)~~ used to ~~obtain, at a minimum,~~ used to obtain the following information:

(A) ~~Standard~~ standard penetration - ~~resistance;~~ resistance using a method such as ASTM D 1586;

(B) ~~Particle~~ particle size ~~analysis;~~ analysis using a method such as ASTM D 6913;

(C) ~~Soil~~ soil classification: Unified Soil Classification ~~System;~~ System using a method such as such as ASTM D 2487;

(D) ~~Formation~~ formation descriptions; and

(E) ~~Saturated~~ saturated hydraulic conductivity, porosity, ~~and~~ effective ~~porosity~~ porosity, and dispersive characteristics for each lithologic unit of the uppermost ~~aquifer.~~ aquifer including the vadose zone.

(5) In addition to borings, other investigation techniques may be used to ~~investigate~~ obtain an understanding of the subsurface conditions at the site, ~~including but not limited to:~~ including 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~~ tabulations of water table elevations measured at the time of boring, 24 hours, and stabilized readings for all ~~borings (measured~~ borings, measured within a period of time short enough to avoid temporal variations in ~~ground water~~groundwater flow which could preclude accurate determination of ~~ground water~~groundwater flow direction and rate;~~rate);~~

(B) ~~Tabulations~~ tabulations of stabilized water table elevations over time ~~in order~~ to develop an understanding of seasonal fluctuations in the water table;

(C) ~~An~~ 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 and climatological data, and any other information available; and

(D) ~~A~~ 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, and injection ~~wells, etc.~~wells.

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

(9) ~~Ground-water~~Groundwater contour map(s) to show the occurrence and direction of ~~ground-water~~groundwater flow in the uppermost aquifer, and any other aquifers identified in the hydrogeologic investigation. The ~~ground-water~~groundwater 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~~groundwater contours shall be shown on the ~~ground-water~~groundwater contour map(s).

(10) A topographic map of the site locating soil borings with accurate horizontal and vertical control which are tied to a permanent onsite bench mark.

~~(11) Boring logs, field logs and notes, well construction records, and piezometer construction records.~~

(11) Information for public potable wells and public water supply surface water intakes, within the local study area in accordance with Rule .1618(c)(2) of this Section, including:

(A) available information and records for well construction, number and location served by wells, and production rates for public potable water wells; and

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

(12) 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~~groundwater discharge features, and ~~ground-water~~groundwater recharge/discharge areas.

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

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

(B) ~~A~~a discussion of the ~~ground-water~~groundwater flow regime of the site ~~focussing~~ focusing on the relationship of MSWLF units to ~~ground-water~~groundwater receptors and to ~~ground-water~~groundwater discharge ~~features,~~ features;

(C) ~~A~~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.~~units; and

(D) ~~A~~a discussion of the ~~ground-water~~ groundwater 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 of concern to the uppermost aquifer.

(b) Design Hydrogeologic Report. A geological and hydrogeological report shall be included in the engineering plan that is required to be submitted in the application for the Permit to Construct in accordance with Rule .1617(a)(1) of this Section.

(1) ~~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 to characterize the geologic and hydrogeologic conditions of the landfill facility shall be based on the geologic and hydrogeologic characteristics of the landfill facility, ~~facility. At a minimum,~~ and there shall be no less than an average of one boring for each acre of the area of investigation, unless otherwise authorized by the Division. ~~Division, where the~~ The area of investigation shall be defined by the Division's review of the Site Study. ~~Study and by the~~ The scope and purpose of the investigation shall be 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~~ Rule .1624(b)(4) and (b)(7) of this Section, and ~~Paragraph (e) of Rule .1680~~ Rule .1680(e) of this Section.

(B) The investigation shall provide detailed and localized data ~~report shall include an investigation~~ of the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of ~~landfill~~ MSWLF development and any leachate ~~surface impoundment or leachate disposal facility.~~ management unit(s) or 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,~~ provide the following information:

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

(B) ~~All~~ all technical information necessary to determine the design of the monitoring system as required by Rule .1631(c) of this Section; ~~Section.~~

(C) ~~All~~ all technical information necessary to determine the relevant point of compliance as required by Rule .1631(a)(2)(B) of this Section;~~Section.~~

(D) for sites located in the piedmont or mountain regions, rock cores of no less than the upper 10 feet of the bedrock ~~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~~groundwater flow characteristics of ~~at least the upper 10 feet of the bedrock.~~ the area of investigation. Testing for the rock corings shall provide ~~provide, at a minimum,the following information:~~

~~(i) Rock~~ rock types;

~~(ii) Recovery~~ recovery values;

~~(iii) Rock Quality Designation~~ rock quality designation (RQD) values;

~~(iv) Saturated~~ saturated hydraulic conductivity and secondary porosity values; and

~~(v) Rock~~ rock descriptions, including fracturing and jointing patterns; ~~patterns, etc.~~

(E) ~~A ground water~~ a groundwater 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~~groundwater ~~contours.~~ contours;

(F) ~~A~~ for sites located in piedmont or mountain regions, 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.~~contours;

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

(H) A report on the ~~ground water~~groundwater flow regime for the area including ~~ground water~~groundwater flow paths for both horizontal and vertical components of ~~ground water~~groundwater flow, horizontal and vertical gradients, flow rates, and ~~ground water~~groundwater recharge areas and discharge areas; ~~areas, etc.~~

(I) A certification by a ~~Licensed Geologist~~ 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).~~that 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 and temporary piezometers will be abandoned prior to landfill construction in accordance with the procedures for permanent abandonment of wells as delineated in 15A NCAC 02C .0113. At the time of abandonment, all piezometers within the landfill unit footprint area shall be overdrilled to the full depth of the boring or to the top of bedrock, whichever is encountered first, prior to cement or bentonite grout placement. The level of the grout within the boring shall not exceed in height the elevation of the proposed base grade.

(3) A Water Quality Monitoring Plan shall be submitted in the application for the Permit to Construct in accordance with Rule .1617(a)(1) of this Section, and shall include ~~be submitted that contains the following information.~~

(A) ~~A ground water monitoring plan including~~ information on the proposed ~~ground water~~groundwater monitoring system(s), sampling and analysis requirements, and

detection monitoring requirements that fulfills the requirements of Rules .1630 through .1637 of this Section; ~~Section.~~

~~(i) The Division may require the use of alternative monitoring systems in addition to ground-watergroundwater monitoring wells at sites:~~ In addition to groundwater monitoring wells, the use of alternative monitoring systems may be:

~~(I)~~ required by the Division at sites where ~~Where~~ the owner or operator does not control the property from any landfill unit to the ~~ground-water~~groundwater discharge feature(s); or

~~(II)~~ allowed by the Division at sites ~~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.~~ The number, spacing, and depths of groundwater monitoring points shall be determined based upon site-specific technical information that shall include an investigation of aquifer thickness, groundwater flow rate, and groundwater flow direction, including seasonal and temporal fluctuations in groundwater 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.

~~(B) A surface water monitoring plan in accordance with Rule .0602 of Section .0600.~~

(B) information on the surface water monitoring including:

(i) sample locations for surface water features on or bordering the facility property, including no less than one upstream and one downstream sample location;

(ii) sampling and analytical methods for surface water samples;

(iii) surface water samples shall be analyzed for constituents that include those constituents listed in .1633(a) of this Section;

(iv) the monitoring frequency shall be no less than semiannual during the active life of the facility, and no less than semiannual during the closure and post-closure periods;

(v) responsibility for sample collection and analysis shall be defined as a part of the water quality monitoring plan; and

(vi) information used for the development of the surface water monitoring system shall include drainage patterns and other hydrological conditions in the area; proximity of surface water to the facility; uses that are being or may be made of any surface water that may be affected by the facility; any other factors that relate to the potential for surface water impacts from the facility.

Surface water standards established under 15A NCAC 02B .0200 shall not be exceeded. If a surface water standard is not established under 15A NCAC 02B for any detected constituent or parameter, the owner or operator shall obtain a determination from the Division on establishing a surface water standard using EPA Nationally Recommended Water Quality Criteria which can be viewed at https://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/surface-water-standards.

(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 of concern ~~(from~~ from any point in a MSWLF unit or leachate surface ~~impoundment)~~ impoundment to the uppermost ~~aquifer,~~ aquifer or surface waters, ~~so as~~ to be protective of public health and the environment.

(D) The final water quality monitoring plan shall be prepared under the responsible charge of and bear the seal of a licensed professional engineer or licensed geologist, if required by G.S. 89C or 89E.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1624 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1624 CONSTRUCTION REQUIREMENTS FOR MSWLF FACILITIES

(a) This Rule shall establish ~~establishes~~ the performance standards and ~~minimum~~ criteria for designing and constructing a ~~new~~ MSWLF unit.~~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)~~ (i) of this Part ~~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)~~ (ii) and (iii) of this Part ~~Rule,~~ the owner or operator shall demonstrate through a model that the proposed design will ensure that maximum contaminant ~~concentration~~ levels (MCL) promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR 141 ~~(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)~~ (ii) and (iii) of this ~~Rule~~ Part is proposed, the Division shall require site-specific, two-phase modeling as described in Subpart (iv)~~(b)(1)(A)(iv)~~ of this Part.~~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)~~ (8) and (10) of this Paragraph.~~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),~~ (8), (9), and (10) of this Paragraph.~~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)~~ (8) and (10) of this Paragraph.~~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;~~ Subpart (i) of this Part; and

(II) the design will ensure that ~~concentration values listed in Table 1~~ maximum contaminant levels (MCL), promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR 141, 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),~~ (2), (11), (12) and (13) of this ~~Rule.~~Paragraph.

(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~~ shall be provided in the engineering plan. The performance analysis ~~must~~ shall 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 shall have a buffer of no less than 300 feet ~~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 shall have a buffer of no less than 500 feet ~~at a new facility shall establish a minimum 500 foot buffer~~ between the MSWLF unit and ~~existing~~ private residences and ~~wells.~~ wells existing at the time that the Division issues a notification of site suitability in accordance with Rule .1618(a)(1) of this Section.

(C) Surface waters. ~~All~~ MSWLF units ~~at new facilities shall establish a minimum 50 foot~~ shall have a buffer of no less than 50 feet between the MSWLF unit and any stream, river, ~~or~~ lake, pond, or other waters of the state as defined in G.S. 143.212 unless the owner or operator can ~~demonstrate:~~demonstrate

~~(i) To~~ to the Division that the alternative management of the water and any discharge will adequately protect the public health and environment; and

~~(ii) That~~ that the construction activities will conform to the requirements of Sections 404 and 401 of the Clean Water Act.

(D) ~~Existing~~ Other landfill units. ~~An adequate buffer distance~~ A buffer shall be established between a proposed ~~new~~ MSWLF unit and any existing landfill units to establish a ~~ground water~~groundwater monitoring system to allow monitoring of each unit separately 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.~~

(E) Additional requirements for landfills permitted after August 1, 2007. MSWLF units permitted after August 1, 2007 shall also comply with the additional horizontal separation requirements of G.S. 130A-295.6(b) and (d) in accordance with S.L. 2007-550.

(4) 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~~ no less than four feet above the seasonal high ~~ground~~ water table and the bedrock datum plane contours established in the Design Hydrogeological Report prepared in accordance with Rule .1623(b) of this Section. For MSWLF units at a landfill facility permitted by the Division after August 1, 2007, the vertical separation requirements of G.S. 130A-295.6(f) apply in accordance with S.L. 2007-550.

(5) 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. Any survey performed pursuant to this Subparagraph shall be performed by a licensed professional land surveyor if required by G.S. 89C.

(6) 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.

(7) 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.

(A) 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 this Subparagraph. ~~Subparagraph (b)(7) of this Rule.~~

(B) Construction requirements.

(i) The landfill subgrade shall be graded in accordance with the approved plans and specifications that are incorporated into the permit to construct in accordance with Rule .1604(b) of this Section.

(ii) The owner or operator of the MSWLF units shall ~~may be required by the permit to~~ notify the Division via e-mail no less than 24 hours before conducting the subgrade inspection required by Part (C) of this Subparagraph. ~~Division's hydrogeologist and inspect the subgrade when excavation is completed or if bedrock or other unpredicted subsurface conditions are encountered during excavation.~~

(C) Certification requirements. At a minimum, the subgrade surface shall be inspected in accordance with the following requirements:

(i) 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;

(ii) The subgrade shall be proof-rolled using procedures and equipment specified by the design or project engineer; and

(iii) 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.

(8) Compacted clay liners. Compacted clay liners are low permeability barriers designed to control fluid migration in a cap liner system or base liner system.

(A) 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.

(B) 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:

(i) 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~~ 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 Part (C) of this Subparagraph. ~~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)~~.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)~~ .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 ~~incorported~~ incorporated into the permit to ~~consturct~~ construct in accordance with Rule .1604(b)~~.1604 (b)~~ of this Section, including ~~the following:~~

~~(I) Quality~~ quality control testing of the raw materials and manufactured product;

~~(II) Field~~ field and independent laboratory destructive testing of geosynthetic clay liner samples; and

~~(III) Documentation~~ documentation prepared by the project engineer in accordance with Subpart ~~(b)(9)(C)(i)~~(i) of this Part. ~~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~~ quality control testing of the raw materials and manufactured product;

(ii) ~~At~~ 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~~ nondestructive testing of all seams; ~~and~~

(iv) ~~Field~~ field and independent laboratory destructive testing of seam ~~samples.~~ samples; and

(v) evaluation of the entire liner for leaks as required by G.S,130A-295.6(h)(1) using technology such as electronic leak detection.

(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.~~ cleaning and inspection in accordance with G.S. 130A-295.6(h)(3).

(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.~~ watertight or provide dual containment in accordance with G.S. 130-295.6(h)(4) at landfill facilities permitted by the Division after August 1, 2007.

(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 of 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~~ Structures and measures shall be designed and maintained to manage the rainwater that drains over land from or onto any part of the facility or unit ~~run off~~ generated by the 24-hour, 25-year storm event, and conform to the requirements of the Sedimentation ~~Pollution~~ Control Law (15A NCAC 04C).~~4).~~

(16) Construction quality assurance (CQA) report.

(A) A CQA report shall be submitted:

(i) ~~After~~ after completing landfill construction ~~in order~~ to qualify the constructed MSWLF unit for a permit to operate;

(ii) ~~After~~ after completing construction of the cap system in accordance with the requirements of Rule ~~.1629;~~ .1629 of this Section; and

(iii) ~~According~~ according to the reporting schedule developed in accordance with Rule .1621 of this Section.

(B) The CQA report shall ~~include, at a minimum,~~ include 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~~ plans, and shall also contain a comprehensive narrative including ~~but not limited to~~ daily reports from the project ~~engineer~~ engineer, ~~and~~ a series of color photographs of major project ~~features.~~ features, and documentation of proceedings of all progress and troubleshooting meetings.

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

(i) ~~The~~ the CQA plan;

(ii) ~~The~~ the conditions of the permit to construct; and

(iii) ~~The~~ the requirements of this Rule.~~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.

(17) Maximum capacity, disposal area, and height for landfills permitted after August 2007. MSWLF units shall meet the requirements of G.S. 130A-295.6(i) regarding maximum allowed capacity, disposal area and height in accordance with the effective date and applicability of S.L. 2007-550.

~~Table 1~~

~~CHEMICAL~~	~~MCL(mg/l~~
~~Arsenic~~	~~0.05~~
~~Barium~~	~~1.0~~
~~Benzene~~	~~0.005~~
~~Cadmium~~	~~0.01~~
~~Carbon Tetrachloride~~	~~0.005~~
~~Chromium (hexavalent)~~	~~0.05~~
~~2,4 Dichlorophenoxy acetic acid~~	~~0.1~~
~~1,4 Dichlorobenzene~~	~~0.075~~
~~1,2 Dichloroethane~~	~~0.005~~
~~1,1 Dichloroethylene~~	~~0.007~~
~~Endrin~~	~~0.0002~~
~~Fluoride~~	~~4~~
~~Lindane~~	~~0.004~~
~~Lead~~	~~0.05~~
~~Mercury~~	~~0.002~~
~~Methoxychlor~~	~~0.1~~
~~Nitrate~~	~~10.0~~
~~Selenium~~	~~0.01~~
~~Silver~~	~~0.05~~
~~Toxaphene~~	~~0.005~~
~~1,1,1 Trichloromethane~~	~~0.2~~
~~Trichloroethylene~~	~~0.005~~
~~2,4,5 Trichlorophenoxy acetic acid~~	~~0.01~~
~~Vinyl Chloride~~	~~0.002~~

History Note: *Authority G.S. 130A-294;*
Eff. October 9, 1993;
Temporary Amendment Eff. July 8, 1998;
Amendment Eff. April 1, ~~1999.~~1999;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1625 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1625 OPERATION PLAN FOR MSWLF FACILITIES

(a) The owner or operator of a MSWLF unit shall maintain and operate the facility ~~according to~~ in accordance with 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~~ proposed area of landfill ~~development.~~ development consistent with the engineering plan submitted in accordance with Rule .1620 of this Section. The operation plan shall be submitted in accordance with Rule .1617 of this Section and ~~The plan~~ shall include the following: ~~drawings and a report clearly defining the information proposed for the Division approved plan~~

(1) Operation drawings. Drawings shall be prepared for each proposed area ~~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~~ existing conditions, including the known limits of existing disposal areas;

(B) ~~Progression~~ progression of construction cells for incremental or modular construction;

(C) ~~Progression~~ progression of operation, including initial waste placement, daily operations, transition contours, and final contours;

(D) ~~Leachate~~ leachate and stormwater controls for active and inactive subcells;

(E) ~~Special~~ special waste areas within the MSWLF unit;

(F) ~~Buffer~~ buffer zones, noting restricted use; and

(G) ~~Stockpile~~ stockpile and borrow operations.

(H) other solid waste activities, such as tire disposal or storage, yard waste storage, white goods storage, and recycling pads.

(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.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1626 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1626 OPERATIONAL REQUIREMENTS FOR MSWLF FACILITIES

The owner or operator of any MSWLF unit ~~must~~ shall 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 only those solid wastes ~~which~~ that 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~~ MSWLF is not permitted to receive, including waste from outside the area the MSWLF ~~landfill~~ is permitted to serve.

(b) The following wastes are prohibited from disposal at a MSWLF unit:

(i) ~~Hazardous~~ hazardous waste as defined ~~within 15A NCAC 13A,~~ in G.S. 130A-290(a)(8), including hazardous waste from ~~conditionally exempt~~ very small quantity ~~generators.~~ generators as defined by 40 CFR 260.10, incorporated by reference at 15A NCAC 13A .0102(b);

(ii) ~~Polychlorinated biphenyls~~ polychlorinated biphenyl (PCB) wastes as defined in 40 CFR ~~761.~~761;

(iii) ~~Liquid~~ 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(M).~~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~~ Asbestos waste shall be covered upon receipt, with soil or compacted waste ~~waste, in a manner that will not cause~~ to prevent airborne conditions. ~~conditions and must~~ Asbestos waste shall be disposed of using methods that prevent unintended exposure of asbestos by future land-disturbing activities, such as disposal in a marked area separate and apart from other solid ~~wastes:~~ wastes, or recording the latitude and longitude coordinates of the asbestos area within the existing landfill footprint. The disposal methods shall be described in the operations plan required by Rule .1625 of this Section.

~~(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~~ if it is used as a soil conditioner and incorporated into or applied onto the vegetative growth layer ~~but, in no case greater~~ at no more than six inches in depth; or

(ii) ~~Co-disposed~~ if it is being co-disposed if the facility meets all design requirements contained within Rule .1624 of this Section,~~.1624,~~ and approved within the permit, or has been previously approved as a permit condition.

(f) Owners or operators of all MSWLF units ~~must~~ shall implement a program at the facility for detecting and preventing the disposal of hazardous and liquid wastes. ~~This~~ The program ~~must~~ shall include, in accordance with 40 CFR 258.20:

(i) ~~Random~~ random inspections of incoming loads or other comparable procedures;

(ii) ~~Records~~ records of any inspections;

(iii) ~~Training~~ training of facility personnel to recognize hazardous and liquid wastes; and

(iv) ~~Development of~~ a contingency plan to properly manage any identified hazardous and liquid wastes. The plan ~~must~~ shall address identification, removal, storage and final disposition of the waste.

(g) Waste placement at ~~existing~~ MSWLF units shall be within the areal limits of the base liner system and in compliance with the effective permit. ~~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.~~

(h) Owners or operators of all MSWLF units shall develop and implement a waste screening plan as required by G.S 130A-295.6(g) in accordance with the effective date and applicability requirements of S.L. 2007-550.

(2) Cover material requirements.

(a) Except as provided in Sub-Item (b) of this Item, the owners or operators of all MSWLF units ~~must~~ shall 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~~ or an alternative thickness of cover (other than at least six inches of earthen material) are allowed with prior approval of ~~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. Alternative materials that have been approved for use at any MSWLF by the Division may be used at all MSWLFs in accordance with G.S. 130A-295.6(h1). ~~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~~ that 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~~ no less than one foot of intermediate cover.

(3) ~~Disease vector~~ Vector control.

~~(a)~~ Owners or operators of all MSWLF units ~~must~~ shall 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"~~ "vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

(4) Explosive gases control.

(a) Owners or operators of ~~all~~ MSWLF units ~~must~~ shall ensure that:

(i) ~~The~~ the concentration of explosive gases ~~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~~ the concentration of explosive gases ~~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~~ shall implement a routine ~~methane~~ landfill gas monitoring program to ensure that the standards of Sub-item ~~(4)(a)~~ (a) of this ~~Rule~~ Item are met. ~~The type and frequency of monitoring must be determined based on the following factors:~~

(i) The type of monitoring shall be determined based on soil conditions, ~~Soil conditions;~~

~~(ii) The~~ the hydrogeologic conditions surrounding the facility, ~~facility;~~

~~(iii) The~~ the hydraulic conditions surrounding the facility, ~~facility;~~ and

~~(iv) The~~ the location of facility structures and property boundaries.

(ii) ~~The minimum frequency of monitoring shall be quarterly.~~The concentration of methane in landfill gas shall be monitored at a frequency of no less than quarterly.

(iii) The Division may also require quarterly monitoring of landfill gas for other explosive gases such as hydrogen sulfide if it is necessary to ensure compliance with Sub-item (a) of this Item. If the Division requires monitoring of additional explosive gases, the Division shall provide written notice to the facility of the requirement.

(c) If ~~methane~~ explosive gas levels exceeding the limits specified in Sub-item (a)~~(4)(a)~~ of this ~~Rule~~ Item are detected, the owner or operator ~~must:~~shall:

(i) ~~Immediately~~ upon discovery of detection, notify the Division and take all necessary steps to ensure protection of human health, ~~health and notify the Division, as provided in 40 CFR Part 258.23;~~ such as monitoring of offsite structures for explosive gases;

(ii) ~~Within~~ within seven days of detection, place in the operating record the ~~methane~~ explosive gas levels detected and a description of the steps taken to protect human health; and

(iii) ~~Within~~ within 60 days of detection, implement a remediation plan for the ~~methane~~ 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 shall describe the nature and extent of the problem and the proposed remedy.

(d) Based on the need for an extension demonstrated by the operator, the Division may establish alternative schedules for demonstrating compliance with Sub-item (c)(ii)~~(4)(c)(ii)~~ and (iii) of this Item.~~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~~ shall 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~~ approved 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.~~ Prior to any burning, a request shall be sent to the Division for review. The Division shall approve the burning if the Division determines that the burning is one of the two types of burning described in this Subparagraph. A notation of the date of approval and the name of the Division personnel who approved the burning shall be included in the operating record.

(c) MSWLF units shall maintain equipment on site ~~Equipment shall be provided~~ to control accidental fires and ~~or~~ arrangements shall be made with the local fire protection agency to provide fire-fighting services. ~~services as soon as needed.~~

(d) Fires and explosions that occur at a MSWLF require verbal notice to the Division within 24 hours and written notification ~~shall be submitted~~ within 15 days. Written notification shall 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.

(6) Access and safety requirements.

(a) The MSWLF shall be secured to prevent unauthorized entry by means ~~of~~ such as gates, chains, berms, fences, or natural barriers such as rivers. ~~fences and other security measures approved by the Division to prevent unauthorized entry~~.

(b) In accordance with G.S. 130A-309.25, an individual trained in landfill operations ~~An attendant~~ shall be on duty at the site ~~at all times~~ while ~~it~~ the MSWLF is open for public use and at all times during active waste management operations at the MSWLF to ensure compliance with operational requirements.

(c) The access road to the MSWLF ~~site~~ shall be of all-weather construction and maintained to allow access by Department vehicles or vehicles hauling waste.~~in good condition.~~ The access roads or paths to monitoring locations shall be maintained to allow access by Department staff.

(d) Dust control measures shall be implemented.

(e) Signs providing information on ~~dumping~~disposal procedures, the hours during which the site is open for public use, the permit ~~number~~ number, and ~~the~~ any information specified in the permit conditions to be included on the sign shall be posted at the site entrance.

(f) Signs shall be posted stating the types of waste that shall not be accepted at the MSWLF unit, such as ~~that no~~ hazardous waste, or liquid waste. ~~waste can be received.~~

(g) Traffic signs or markers shall be provided ~~as necessary to promote an orderly traffic pattern~~ to direct traffic 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~~ so that no liquid or hazardous waste ~~is~~ can be contained therein, except fiber drums containing asbestos.

(7) Erosion and sedimentation control requirements.

(a) ~~Adequate sediment~~ Sediment control measures ~~(structures or devices),~~ consisting of vegetative cover, materials, structures, or devices shall be utilized to prevent sediment ~~silt~~ from leaving the MSWLF facility.

(b) ~~Adequate sediment~~ Sediment control measures ~~(structures or devices),~~ consisting of vegetative cover, materials, structures, or devices shall be utilized to prevent on-site ~~erosion.~~ erosion of the MSWLF facility or unit.

(c) Provisions for a vegetative ground cover ~~sufficient~~ to restrain erosion ~~must~~ shall 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~~ A National Pollutant Discharge Elimination System (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)~~ NPDES requirements, pursuant to Section ~~402.~~ 402 of the Clean Water Act.

(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~~ shall not be placed in MSWLF units unless:

(i) ~~The~~ the waste is household waste other than septic waste and waste oil; or

(ii) ~~The~~ 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,~~ the MSWLF unit is designed with a composite liner and leachate collection system as described within Rule .1624 of this ~~Section.~~ Section, and the owner or operator obtains prior approval from the Division.

(b) Containers holding liquid wastes ~~may~~ shall not be placed in the MSWLF unit unless:

(i) ~~The~~ the container is a small container similar in size to that normally found in household waste;

(ii) ~~The~~ the container is designed to hold liquids for use other than storage; or

(iii) ~~The~~ 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~~ shall record and retain at the facility ~~in~~ an operating record that shall contain the following information: ~~information as it becomes available:~~

(i) ~~Inspection~~ inspection records, waste determination records, certifications of training, and training procedures required by ~~in~~ Item (1) of this Rule;

(ii) ~~Amounts~~ amounts by weight of solid waste received at the facility ~~including source of generation;~~ to include, consistent with G.S. 130A-309.09D, county of generation;

(iii) ~~Gas~~ gas monitoring results and any remediation plans required by Item (4) of this Rule;

(iv) ~~Any~~ any demonstration, certification, finding, monitoring, testing, or analytical data required by Rules .1630 thru .1637 of this Section;

(v) ~~Any~~ any monitoring, testing, or analytical data as required by Rule .1627 of this Section; and

(vi) ~~Any~~ any cost estimates and financial assurance documentation required by Rule .1628 of this Section and Section .1800 of this Subchapter. ~~Section.~~

(b) All information contained in the operating record ~~must~~ shall be furnished to the Division according to the permit, ~~upon request to the Division~~ or shall be made available for review by the Division at the time and place of an inspection of the MSWLF or upon request. ~~at all reasonable times for inspection by the Division.~~ The information contained in the operating record may be recorded and retained in paper format or in an electronic format that is accessible and viewable by the Division.

(c) The owner or operator ~~must~~ shall 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 that is subject to be blown by the wind. At the conclusion of each ~~day of operation,~~ operating day, all windblown material resulting from the operation shall be collected and ~~returned to the area~~ disposed of by the owner or operator.

(12) Leachate management plan. The owner or operator of a MSWLF unit designed with a leachate collection system ~~must~~ shall establish and maintain a leachate management plan ~~which~~ that includes the following:

(a) ~~Periodic~~ periodic maintenance of the leachate collection system;

(b) ~~Maintaining~~ maintaining records for the amounts of leachate generated;

(c) ~~Semi-annual~~ semi-annual leachate quality sampling;

(d) ~~Approval~~ approval documentation for final leachate disposal; and

(e) ~~A~~ a contingency plan for extreme operational conditions.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, 1993;
Amended Eff. May 1, ~~2011.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1627 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1627 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR MSWLF FACILITIES

(a) Purpose. This Rule ~~establishes~~ shall establish criteria for the closure of all MSWLF units and subsequent requirements for post-closure compliance. The owner or operator ~~is required to~~ shall develop specific plans for the closure and post-closure of the MSWLF facility or units under Rule ~~.1629.~~.1629 of this Section, and submit them to the Division for review and approval.

(b) Scope.

(1) ~~Closure.~~ This Rule shall establish standards ~~Standards are established~~ for the scheduling and documenting closure of all MSWLF units, and designing the cap system. Construction requirements for the cap system shall incorporate specific requirements from Rule .1624 of this Section.

(2) ~~Post-closure.~~ This Rule shall establish standards ~~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 and constructed to minimize infiltration and erosion. The cap system shall be designed and constructed to:

(A) ~~Have~~ 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~~ 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~~ 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~~ no less than 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~~ demonstrates the following:

(A) ~~The~~ the alternative cap system will achieve ~~an equivalent or greater~~ a reduction in infiltration equivalent to or greater than ~~as~~ the low-permeability barrier specified in Subparagraph (1) of this Paragraph; and

(B) ~~The~~ the erosion layer will provide ~~equivalent or improved~~ protection equivalent to or greater than ~~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 Rule .1624(b)(8), (b)(9), (b)(10), (b)(14), and (b)(15) of this Section ~~Subparagraphs (b)(8), (b)(9) and (b)(15) of Rule .1624~~ and the following requirements:

(A) ~~Post-settlement~~ post-settlement surface slopes shall be a minimum of five percent and a maximum of 25 percent; and

(B) ~~A~~ 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 in writing 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 notice for the landfill facility property at the local county Register of Deeds office; and notify the Division that the notice has been recorded and a copy has been placed in the operating record. The notice may be a notation on the deed to the landfill facility property, or may be some other instrument such as a declaration of restrictions on the property that is ~~normally examined~~ discoverable during a title search for the landfill facility property. ~~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~~ notice shall ~~in perpetuity~~ notify any potential purchaser of the property ~~that:~~ that

~~(i)~~ ~~The~~ the land has been used as a landfill facility; and

~~(ii)~~ future ~~Its~~ use is restricted under the closure plan approved by the Division.

~~(9)~~ The owner or operator may request ~~permission~~ approval from the Division to remove the notice. ~~notation from the deed~~ The Division shall approve removal of the notice if all wastes are removed from the ~~facility.~~ landfill facility property.

~~(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~~ 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 rainwater that drains over land from or onto any part of the facility or unit ~~run-on and run-off~~ from eroding or ~~otherwise~~ damaging the cap system;

(B) ~~Maintaining~~ maintaining and operating the leachate collection system in accordance with the requirements in Rules .1624 and ~~.1626.~~.1626 of this Section. 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~~ monitoring the ~~ground water~~groundwater and surface water in accordance with the requirements of Rules .1631 through .1637 of this Section, and maintaining the ~~ground water~~groundwater monitoring system, ~~if applicable;~~ and monitoring the surface water in accordance with the requirements of Rule .1627(b)(3)(B);~~.0602;~~ and

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

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

(3) Every five years during the post-closure care period and following ~~Following~~ completion of the post-closure care period for each MSWLF unit, the owner or operator shall notify the Division that a certification ~~certification, signed by a registered professional engineer,~~ verifying that post-closure care has been ~~completed~~ conducted in accordance with the post-closure plan, has been placed in the operating record. If required by G.S. 89C, the certification shall be signed by a licensed professional engineer.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1629 is proposed for readoption with substantive changes as follows:

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 to the Division 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 their ~~its~~ active life in accordance with the cap system requirements in Paragraph (c) of this Rule.~~Rule, as applicable.~~ The closure ~~plan, at a minimum, must~~ plan shall include the following information:

(1)~~(A)~~ ~~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 Rule .1627(c) of this Section;~~Paragraph (c) of Rule .1627.~~

(2)~~(B)~~ ~~An~~ 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~~for:~~

~~(i)~~ ~~The~~ the operation plan, for an existing MSWLF unit; or

~~(ii)~~ ~~The~~ the engineering plan or facility plan, for a ~~lateral expansion or new~~ MSWLF ~~unit.~~unit;

(3)~~(C)~~ ~~An~~ an estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility; and

(4)~~(D)~~ ~~A~~ a schedule for completing all activities necessary to satisfy the closure criteria set forth in Rule .1627(c) of this Section.~~Paragraph (c) of Rule .1627.~~

(5) the cost estimate for closure activities as required under Section .1800 of this Subchapter.

~~(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~~shall submit ~~prepare~~ a written post-closure plan to the Division that ~~includes, at a minimum,~~ includes the following information:

(1) ~~A~~ a description of the monitoring and maintenance activities required in Rule .1627(d) of this Section~~Paragraph (d) of Rule .1627~~ for each MSWLF unit, and the frequency at which these activities shall be performed;

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

(3) ~~A~~ 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.~~ environment; and

(4) ~~Financial Assurance. The owner or operator shall submit~~ the cost estimate for post-closure activities required under ~~Rule .1628 of this Section~~ Section .1800 of this Subchapter.~~as a component of the plan.~~

History Note: *Authority 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1630 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1630 APPLICABILITY OF ~~GROUND-WATER~~GROUNDWATER MONITORING REQUIREMENTS

(a) The ~~ground-water~~groundwater 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~~groundwater monitoring, assessment, and corrective action requirements under Rules .1630 through .1637 of this Section ~~according to the following schedule:~~ before waste can be placed in the unit.

~~(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~~groundwater 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~~ Water Quality 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~~ licensed geologist or licensed professional engineer if required by G.S. 89C or 89E. ~~(in accordance with G.S. 89E and 89C, respectively).~~

(e) The groundwater protection requirements of 15A NCAC 02L shall apply to MSWLFs.~~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;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1631 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1631 ~~GROUND-WATER~~GROUNDWATER MONITORING SYSTEMS

(a) A ~~ground-water~~groundwater monitoring system shall be installed that consists of ~~a sufficient number of wells,~~ no less than one background and three downgradient wells installed at ~~appropriate~~ locations and depths that ~~depths, to~~ yield ~~ground-water~~groundwater samples from the uppermost aquifer that:

(1) Represent the quality of the background ~~ground-water~~groundwater that has not been affected by leakage from the unit. ~~Normally, determination~~ Determination of background ~~water~~groundwater quality ~~will~~ shall 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~~ hydrogeologic conditions do not allow the owner or operator to determine which wells are hydraulically upgradient; or

(B) ~~Hydrogeologic~~ hydrogeologic conditions do not allow the owner or operator to place a well in a hydraulically upgradient location; or

(C) ~~Sampling~~ sampling at other wells will provide an indication of background ~~ground-water~~groundwater quality that is as representative as that provided by the upgradient well(s); and

(2) Represent the quality of ~~ground-water~~groundwater 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~~groundwater 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)~~(A) ~~The~~ the hydrogeologic characteristics of the facility and surrounding land;

~~(ii)~~(B) ~~The~~ the volume and physical and chemical characteristics of the leachate;

~~(iii)~~(C) ~~The~~ the quantity, quality, and direction, of flow of ~~ground-water~~groundwater;

~~(iv)~~(D) ~~The~~ the proximity and withdrawal rate of the ~~ground-water~~groundwater users;

~~(v)~~(E) ~~The~~ the availability of alternative drinking water supplies;

~~(vi)~~(F) ~~The~~ the existing quality of the ~~ground-water~~groundwater, including other sources of contamination and their cumulative impacts on the ~~ground-water~~groundwater, and whether the ~~ground-water~~groundwater is currently used or ~~reasonably~~ expected to be used for drinking water;

~~(vii)~~(G) ~~Public~~ public health, safety, and welfare effects; and

~~(viii)~~(H) ~~Practicable~~practicable capability of the owner or operator.

(b) Monitoring wells shall be designed and constructed in accordance with 15A NCAC 02C. ~~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:

(1) ~~Aquifer~~ aquifer thickness, ~~ground-water~~groundwater flow rate, and ~~ground-water~~groundwater flow direction, including seasonal and temporal fluctuations in ~~ground-water~~groundwater flow; and

(2) ~~Unsaturated~~ 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~~ porosities, and effective porosities.

(d) The proposed monitoring system and the water quality monitoring plan required in Paragraph (f) of this Rule ~~plan~~ shall be ~~be:~~

~~(1) Certified by a Licensed Geologist or Professional Engineer to be~~ effective in providing early detection of any release of ~~hazardous~~ constituents of concern ~~(from~~ from any point in a disposal cell or leachate surface ~~impoundment)~~ impoundment to the uppermost aquifer ~~aquifer, so as~~ to be protective of public health and the environment. If required by G.S. 89C or 89E, the proposed monitoring system and water quality monitoring plan shall be certified by a licensed professional engineer or a licensed geologist. ~~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:~~ In addition to groundwater monitoring wells, the use of alternative monitoring systems may be:

(1) ~~Where~~ required by the Division at sites where the owner or operator does not control the property from any landfill unit to the ~~ground-water~~groundwater discharge feature(s); or

(2) ~~Sites~~ allowed by the Division at sites where ~~with~~ hydrogeologic conditions are favorable ~~to~~ for detection monitoring by alternative methods.

(f) The owner or operator shall submit a ~~monitoring system~~ water quality monitoring plan for review and approval by the Division as required by Rules .1603 and .1617 of this Section. The Water Quality Monitoring Plan shall contain information on the groundwater monitoring system(s) and locations, surface water sampling locations, sampling and analysis requirements, and monitoring required under Rules .1630 through .1637 of this Section. The Division shall date and stamp the Water Quality Monitoring Plan "approved" if the plan meets the conditions of this Rule. Upon approval by the Division, a copy of the

approved Water Quality Monitoring Plan shall be placed in the operating record.

(g) Groundwater standards and interim maximum allowable concentrations established under 15A NCAC 02L or groundwater protection standards established in accordance with Rule .1634(b)(3) and (4) of this Section shall not be exceeded in the uppermost aquifer at the compliance boundary.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, ~~1993.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1632 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1632 ~~GROUND-WATER~~GROUNDWATER SAMPLING AND ANALYSIS REQUIREMENTS

(a) ~~A ground-water monitoring program~~ ~~shall include~~ ~~consistent~~ Consistent sampling and analysis procedures ~~that are~~ designed to ensure monitoring results that provide an accurate representation of ~~ground-water~~groundwater quality at the background and downgradient ~~wells.~~ wells shall be described in the water quality monitoring plan approved in accordance with Rule .1631(f) of this Section. ~~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 ~~for:~~

~~(1) Sample~~ sample collection;

~~(2) Sample~~ sample preservation and shipment;

~~(3) Analytical~~ analytical procedures;

~~(4) Chain~~ chain of custody control; and

~~(5) Quality~~ quality assurance and quality control.

(b) The ~~ground-water~~groundwater monitoring program shall include sampling and analytical methods that are appropriate for ~~ground-water~~groundwater sampling and that accurately measure ~~hazardous~~ constituents of concern and other monitoring parameters in ~~ground-water~~groundwater samples.

(c) The sampling procedures and frequency shall be protective of human health and the environment.

(d) ~~Ground-water~~ Each time groundwater is sampled, groundwater elevations shall be measured in each well ~~immediately~~ prior to purging. ~~purging, each time ground-water is sampled.~~ The owner or operator shall determine the rate and direction of ~~ground-water~~ groundwater flow each time ~~ground-water~~ groundwater is sampled. ~~Ground-water~~ Groundwater elevations in wells which monitor the same waste management area shall be measured within a 24-hour period of time ~~short enough~~ to avoid temporal variations in ~~ground-water~~groundwater flow ~~which~~ that could preclude accurate determination of ~~ground-water~~groundwater flow rate and direction. The owner or operator shall determine ~~ground-water~~groundwater elevation and flow as follows:

(1) In order to ~~accurately~~ determine ~~ground-water~~ accurate groundwater elevations for each monitoring well, the wells shall have been surveyed. If required by G.S. 89C, a licensed 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~~ the horizontal location to the nearest 0.1 foot;

(B) ~~The~~the vertical control for the ground surface elevation to the nearest 0.01 foot; and

(C) ~~The~~ 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~~groundwater 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~~groundwater quality in accordance with ~~rules~~ Rule .1631(a)(1) of this Section and ~~.1632(f)~~Paragraphs (f) through (h) of this Rule~~Section~~ for each of the monitoring parameters or constituents required in the particular ~~ground-water~~groundwater monitoring program that applies to the MSWLF unit.

(f) The number of samples collected to establish ~~ground-water~~groundwater 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 quality standards and interim maximum allowable concentrations established in 15A NCAC 02L or the groundwater protection standard as defined in Rule .1634(b)(3) and (4) ~~.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~~groundwater monitoring data for each constituent of concern. ~~hazardous constituent.~~ The statistical test chosen shall be conducted separately for each ~~hazardous~~ constituent of concern 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~~groundwater monitoring data shall comply with the following performance standards:~~standards, as appropriate:~~

(1) The statistical method used to evaluate ~~ground-water~~groundwater monitoring data shall be appropriate for the distribution of chemical parameters or constituents of concern. ~~hazardous constituents.~~ If the distribution of the chemical parameters or ~~hazardous~~ constituents of concern is

shown by the owner or operator ~~(or the Division)~~ 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~~groundwater 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~~groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined by the analyst 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~~groundwater 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 by the analyst after considering the number of samples in the background ~~data base,~~ database, 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 monitoring report in electronic format that includes ~~all~~ information from the sampling ~~event;~~ event including field observations relating to the condition of the monitoring wells, field data, the laboratory analytical data report, ~~data,~~ statistical analysis (if utilized), ~~sampling methodologies,~~ field sampling methods and quality assurance and quality control data, information on ~~ground-water~~groundwater flow direction, calculations of ~~ground-water~~ the groundwater flow ~~rate,~~ rate; and for each ~~well~~ well, any constituents that exceed ~~ground-water~~ groundwater protection standards ~~standards,~~ as defined in Rule .1634(g) ~~1634(g) through (h)~~ of this Section.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, 1993;
Amended Eff. April 1, ~~2011.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1633 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1633 DETECTION MONITORING PROGRAM

(a) Detection monitoring shall be conducted ~~is required~~ at MSWLF units at all ~~ground water~~groundwater monitoring wells that are part of the detection monitoring system as established in the approved water quality monitoring plan. ~~At a minimum, as~~ 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~~ no less than semiannual during the active life of the facility ~~(including closure)~~ and during closure and ~~the~~ post-closure period. To establish baseline, ~~A minimum of~~ no less than four independent samples from each background and downgradient monitoring well ~~(background and downgradient)~~ shall be collected within a six-month period and analyzed for ~~the Appendix I~~ constituents listed in Appendix I of 40 CFR 258, with no less than one sample collected from each new monitoring well before waste placement in each new cell or phase. ~~during the first semiannual sampling event. At least~~ No less than one sample from each background and downgradient monitoring well ~~(background and downgradient)~~ shall be collected and analyzed during subsequent semiannual sampling events.

(c) The Division may approve an alternate frequency, no less than annually, for repeated sampling and analysis for 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) groundwater flow rates;

(4) minimum distance of travel;

(5) resource value of the aquifer; and

(6) nature, fate, and transport of any detected constituents.

(d)~~(c)~~ If the owner or operator determines that there is an exceedance of the ~~ground water protection standards,~~ groundwater quality standards or interim maximum allowable concentration established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with ~~as defined in Paragraph (g) or (h) of Rule.1634~~Rule .1634(b)(3) and (b)(4) of this Section for one or more of the constituents ~~listed in Appendix I~~ required in Paragraph (a) of this Rule at any monitoring well,~~well at the relevant point of compliance,~~ the owner or operator:

(1) ~~Shall,~~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~~groundwater protection standards;

(2) ~~Shall~~ 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~~ 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~~groundwater quality. A report documenting this demonstration shall be ~~approved by~~ submitted to the Division for approval. ~~the Division.~~ If required by G.S. 89C or G.S. 89E, a licensed 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 Rule .1634 of this Section.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, 1993;
Amended Eff. April 1, ~~2011.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1634 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1634 ASSESSMENT MONITORING PROGRAM

(a) Assessment monitoring ~~is~~ shall be required ~~whenever~~ if, in any sampling event, one or more ~~of the~~ constituents listed in 40 CFR 258 Appendix I is detected above ~~in exceedance of~~ the ~~ground water protection standards,~~ groundwater quality standards or interim maximum allowable concentration (IMAC) established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Subparagraphs (b)(3) and (b)(4) ~~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.~~

(b) Assessment Requirements. Within 90 days of triggering an assessment monitoring program in accordance with Rule .1633(c)(2) of this Section, the owner or operator shall conduct an assessment in accordance with the following:

(1) Install additional wells, as necessary, to characterize the nature and extent of the contamination, including no less than one additional groundwater monitoring well at the facility's property boundary or the compliance boundary, as defined in 15A NCAC 02L .0102, in the direction of contaminant migration most likely to show impact based on the established geology and hydrogeology.

~~(3)~~(2) ~~A minimum of~~ collect no less than one groundwater sample from each downgradient monitoring well, including any well installed in accordance with Subparagraph (1) of this Paragraph, ~~shall be collected~~ and ~~analyzed~~ analyze for the constituents listed in 40 CFR 258 Appendix II. ~~If during each sampling event.~~ The Division may delete any of the 40 CFR 258 Appendix II constituents, not also listed in Appendix I, for a MSWLF unit if it can be shown that the constituents proposed for deletion are not expected to be in or derived from the waste contained in the unit. ~~For~~ After the initial sampling event, for any constituent detected in the downgradient wells as ~~the~~ a result of the Appendix II analysis, ~~a minimum of four~~ no less than three additional independent samples from each downgradient monitoring well ~~(background and downgradient)~~ and no less than four independent samples from each background well shall be collected and analyzed to establish ~~background~~ a baseline for the new detected constituents. Once determined, baseline data for the new detected constituents shall be reported to the Division. ~~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.~~

(3) For constituents that do not have a groundwater quality standard or IMAC established in accordance with 15A NCAC 02L .0202, the Division shall establish a groundwater protection standard for each constituent detected in groundwater. The groundwater protection standard shall be the most protective of the following:

(A) for constituents for which a maximum contaminant level (MCL) has been promulgated under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR 141, the MCL for that constituent;

(B) for constituents for which a public water quality standard has been established under the North Carolina Rules Governing Public Water Supplies, 15A NCAC 18C, the public water quality standard for that constituent;

(C) for constituents for which no MCLs or public water quality standards have been promulgated, the background concentration for the constituent established from the monitoring wells required in accordance with Rules .1631(a)(1) and .1632 of this Section; or

(D) for constituents for which the background level is higher than the MCL or public water quality standard or health-based levels identified under Subparagraph (4) of this Paragraph, the background concentration established in accordance with Rules .1631(a)(1) and.1632 of this Section.

(4) The Division may establish an alternative groundwater protection standard for constituents for which no MCL or public water quality standard have been established. These groundwater protection standards shall be appropriate health-based levels that satisfy the following criteria:

(A) the level is derived in a manner consistent with EPA 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; and

(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 groundwater protection standards under this Paragraph, the Division may consider the following:

(A) multiple contaminants in the groundwater;

(B) exposure threats to sensitive environmental receptors; and

(C) other site-specific exposure or potential exposure to groundwater.

(6) The owner or operator may request that the Division approve a background level for the unit that is higher than the standard established in 15A NCAC 02L .0202 or the standard established in Subparagraph (3) of this Paragraph or health-based levels identified under Subparagraph (4) of this Paragraph. The background level shall be established in accordance with Rules .1631(a)(1) and .1632 of this Section. The approved background level shall be the established groundwater protection standard.

(c) Assessment Monitoring. After obtaining the results from the initial sampling event required in Subparagraph (b)(2) of this Rule, the owner or operator shall perform assessment monitoring in accordance with the following:

(1) For each assessment monitoring event, the owner or operator shall submit an assessment monitoring report to the Division that complies with Rule .1632(i) of this Section and, if required by G.S. 89E, the report shall be certified by a licensed geologist. The initial assessment monitoring report shall contain a summary description of assessment activities conducted in accordance with Paragraph (b) of this Rule, including boring logs and well installation records.

(2) Within 30 days of obtaining the results of the sampling event, the owner or operator shall 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.

(3) Within 14 days of receipt of the analytical results, the owner or operator shall submit notice to the Division in writing and place the notice in the operating record identifying the 40 CFR 258 Appendix II constituents that have not previously been detected and reported to the Division.

(4) Within 90 days, and no less than semiannually thereafter until the Division approves a return to detection monitoring in accordance with Paragraphs (d) or (e) of this Rule, the owner or operator shall sample all of the monitoring wells for the unit in the monitoring system established in Rule .1633 of this Section and in Subparagraph (b)(1) of this Rule for all constituents listed in 40 CFR 258 Appendix I, and for those constituents in Appendix II not listed in Appendix I that have been detected. Any well with a reported groundwater standard exceedance shall be sampled for all constituents in 40 CFR 258 Appendix II at least annually unless otherwise approved in accordance with Subparagraph (6) of this Paragraph or Subparagraph (b)(2) of this Rule. A report from each sampling event shall be submitted to the Division and placed in the facility operating record. No less than one sample from each background and downgradient monitoring well shall be collected and analyzed during each of these sampling events.

(5) The owner or operator shall establish and report to the Division the background or baseline concentrations for any constituents detected.

~~(c)~~(6) The Division may ~~specify~~ approve an ~~appropriate~~ alternate ~~frequency~~ frequency, no less than annually, or an alternate subset of wells 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)~~(A) ~~Lithology~~ lithology of the aquifer and unsaturated zone;

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

~~(3)~~(C) ~~Ground-water~~groundwater flow rates;

~~(4)~~(D) ~~Minimum~~ minimum distance of travel;

~~(5)~~(E) ~~Resource~~ resource value of the aquifer; and

~~(6)~~(F) ~~Nature,~~nature, fate, and transport of any detected constituents.

(d) The owner or operator may demonstrate, in accordance with Rule .1633(c)(3) of this Section, that a source other than a MSWLF unit caused the exceedance of the groundwater standards or groundwater protection standards, or the exceedance resulted from error in sampling, analysis, or natural variation in groundwater quality. If a successful demonstration is made for each exceedance, the owner or operator may discontinue assessment monitoring, and may return to detection monitoring in accordance with Rule .1633 of this Section when approval is given by the Division in writing. Until a successful demonstration is made, the owner or operator shall comply with Paragraph (c) of this Rule including initiating an assessment of corrective measures in accordance with Paragraph (f) of this Rule.

(e) The Division shall give approval to the owner or operator to return to detection monitoring in accordance with Rule .1633 of this Section if all of the following are met:

(1) for two consecutive sampling events, the concentrations of the constituents are shown to be at or below groundwater standards or IMACs established in 15A NCAC 02L .0202, groundwater protection standards established in accordance with Subparagraphs (b)(3) and (b)(4) of this Rule, or approved background values using the statistical procedures in Rule .1632(f) through (h);

(2) the plume is not migrating horizontally or vertically; and

(3) the plume has not exceeded the compliance boundary.

(f) If one or more constituents are detected for two consecutive sampling events above background, the groundwater standards established in 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Subparagraphs (b)(3) and (b)(4) of this Rule, the owner or operator shall initiate Assessment of Corrective Measures in accordance with Rule .1635 of this Section within 90 days.

~~(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 semiannual 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 1×10^{-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.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1635 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1635 ASSESSMENT OF CORRECTIVE MEASURES

(a) Within 90 days of finding that one or more Appendix II constituents exceeded, for two consecutive sampling events, either the groundwater standards established in 15A NCAC 02L .0202, the groundwater protection standards established in accordance with Rule .1634(b)(3) and (b)(4) of this Section, or an approved background value, ~~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~~ shall be completed within 120 ~~days.~~days or as approved by the Division.

(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,~~ Section. The assessment of corrective measures shall address ~~addressing at least~~ the following, as provided for in 40 CFR 258:

(1) ~~The~~ 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~~ the time required to begin and complete the remedy;

(3) ~~The~~ the costs of remedy implementation; and

(4) ~~The~~ the institutional requirements such as State and ~~Local~~ local permit requirements or other environmental or public health requirements that may affect implementation of the remedy(s).

(d) ~~The~~ Within 120 days of completion of the assessment of corrective measures as set forth in Paragraph (a) of this Rule, the owner or operator shall discuss the results of the assessment of corrective measures, ~~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 public meeting. ~~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.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1636 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1636 SELECTION OF REMEDY

(a) Based on the results of the assessment of corrective measures in accordance with Rule .1635 of this Section, ~~assessment,~~ the owner or operator shall select a remedy that, ~~at a minimum,~~ meets the standards listed in Paragraph (b) of this Rule.~~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).~~1603(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.~~Rule .1628 of this Section and Section .1800 of this Subchapter.

(b) Remedies shall:

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

(2) ~~Attain~~ attain the approved ~~ground water~~ groundwater quality ~~protection standards;~~ standards or IMACs established in accordance with 15A NCAC 02L .0202, or the groundwater protection standards established in accordance with Rule.1634(b)(3) and (b)(4) of this Section;

(3) ~~Control~~ control the source(s) of releases ~~so as~~ to reduce or eliminate, to the maximum extent practicable, further releases of 40 CFR 258 Appendix II constituents into the ~~environment that may pose a threat to human health or the~~ environment; and

(4) ~~Comply~~ comply with standards for management of wastes as specified in Rule .1637(e) of this Section. ~~.1637(d); and~~

(c) In selecting a remedy that meets the standards of Paragraph (b) of this Rule,~~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~~ magnitude of reduction of existing risks;

(B) ~~Magnitude~~ magnitude of residual risks in terms of likelihood of further releases due to wastes remaining following implementation of a remedy;

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

(D) ~~Short term~~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;

(E) ~~Time~~ time until full protection is achieved;

(F) ~~Potential~~ 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~~long-term reliability of the engineering and institutional controls; and

(H) ~~Potential~~ 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~~ the extent to which containment practices will reduce further releases, ~~releases;~~ and

~~(B) The~~ 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~~ the degree of difficulty associated with constructing the technology;

(B) ~~Expected~~ the expected operational reliability of the technologies;

(C) ~~Need~~ the need to coordinate with and obtain necessary approvals and permits from other agencies;

(D) ~~Availability~~ the availability of necessary equipment and specialists; and

(E) ~~Available~~ the available capacity and location of needed treatment, storage, and disposal services.

(4) ~~Practicable~~ The 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 submitted to the Division for review and approval. ~~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 and extent of contamination;

(2) ~~Practical~~ practical capabilities of remedial technologies in achieving compliance with the approved ~~ground-water~~groundwater protection standards and other objectives of the remedy;

(3) ~~Availability~~ availability of treatment or disposal capacity for wastes managed during implementation of the remedy;

(4) ~~Desirability~~ 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~~ potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

(6) ~~Resource~~ resource value of the aquifer including:

(A) ~~Current~~ current and future uses;

(B) ~~Proximity~~ proximity and withdrawal rate of users;

(C) ~~Ground water~~groundwater quantity and quality;

(D) ~~The~~ the potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to contaminants;

(E) ~~The~~ the hydrogeologic characteristics of the facility and surrounding land;

(F) ~~Ground water~~groundwater removal and treatment costs; and

(G) ~~The~~ the costs and availability of alternative water ~~supplies.~~supplies; and

(7) ~~Practical~~ practical capability of the owner or operator.~~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~~ the groundwater 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~~ the constituent or constituents are present in ~~ground water~~groundwater that:

(A) ~~Is~~ is not currently or ~~reasonably~~ expected to be a source of drinking water; and

(B) ~~Is~~ is not hydraulically connected with water to which the ~~hazardous~~ constituents of concern are migrating or are likely to migrate in concentrations that would exceed the approved ~~ground water~~groundwater protection standards; or

(3) ~~Remediation~~ remediation of the releases is technically impracticable; or

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

(f) A determination by the Division pursuant to Paragraph (e) of this Rule ~~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~~groundwater, to prevent exposure to ~~the ground water~~groundwater, or to remediate ~~ground water~~groundwater 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.~~1993;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1637 is proposed for readoption with substantive changes as follows:

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) within 120 days after the approval of the selected remedy or as approved by the Division, submit a Corrective Action Plan that ~~Establish~~ establishes and ~~implement~~ implements a corrective action ~~ground-water~~groundwater 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~~ indicates the effectiveness of the corrective action remedy; and

(C) ~~Demonstrates~~ demonstrates compliance with groundwater standards or IMACS established in accordance with 15A NCAC 02L .0202 and ~~ground-water~~groundwater protection standards established in accordance with Rule .1634(b)(3) and (b)(4) of this Section pursuant to Paragraph (f)~~(e)~~ of this Rule.

(2) ~~Implement~~ implement the approved corrective action remedy; and

(3) ~~Take~~ take any interim measures necessary to ensure the protection of human health and the environment. Interim measures shall ~~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~~ the time required to develop and implement a final remedy;

(B) ~~Actual~~ actual or potential exposure of nearby populations or environmental receptors to constituents of concern;~~hazardous constituents;~~

(C) ~~Actual~~ actual or potential contamination of drinking water supplies or sensitive ecosystems;

(D) ~~Further~~ further degradation of the ~~ground-water~~groundwater that may occur if remedial action is not initiated;~~initiated expeditiously;~~

(E) ~~Weather~~ weather conditions that may cause ~~hazardous~~ constituents of concern to migrate or be released;

(F) ~~Risks~~ risks of fire or explosion, or potential for exposure to ~~hazardous~~ constituents of concern ~~as a result of~~ resulting from an accident or failure of a container or handling system; and

(G) ~~Other~~ other situations that may pose threats to human health or the environment.

(b) The owner or operator shall submit a Corrective Action Evaluation Report to the Division in electronic portable document format no less than once every five calendar years until the owner or operator are released from the corrective action program in accordance with Paragraph (g) of this Rule. The report shall contain:

(1) a description of the corrective measure remedies that have been implemented or completed since the initiation of the corrective action program;

(2) an evaluation of the effectiveness of the corrective action program;

(3) the information required in Rule .1804(a)(1) of this Subchapter.

~~(b)~~(c) 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 to comply with Rule .1636 of this Section ~~techniques, as approved by the Division, that could practicably achieve compliance with the requirements,~~ unless the ~~owner or operator makes the determination under~~ Division determines that active remediation is not necessary in accordance with Rule .1636(e) of this Section. ~~Paragraph (c) of this Rule.~~

~~(c)~~(d) 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~~ 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 licensed 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~~ 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~~ 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~~ technically practicable;

(B) ~~Consistent~~ consistent with the overall objective of the remedy; and

(4) ~~Submit~~ 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 shall be placed in the operating record prior to implementing the alternative measures. ~~approval prior to implementing the alternative measures. Upon approval by the Division, this report shall be placed in the operating record.~~

~~(d)~~(e) 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~~ that is protective of human health and the environment; and

(2) ~~That~~ that complies with applicable ~~RCRA~~ Resource Conservation and Recovery Act requirements.

~~(e)~~(f) Remedies selected pursuant to Rule .1636 of this Section ~~are~~ shall be considered complete when:

(1) The owner or operator complies with the ~~approved ground water~~groundwater quality and groundwater protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance;

(2) ~~Compliance~~ compliance with the ~~approved ground water~~ groundwater quality and groundwater protection standards has been achieved by demonstrating that concentrations of 40 CFR 258 Appendix II constituents have not exceeded these standards for a period of three consecutive ~~years;~~ years, consistent with performance standards in Rule 1636(b) of this Section; and

(3) ~~All~~ all actions required to complete the remedy have been satisfied.

~~(f)~~(g) 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)~~(d) 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 licensed 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)~~(h) When, upon completion of the certification, the Division determines that the corrective action remedy has been completed in accordance with Paragraph ~~(e)~~(f) of this Rule, the owner or operator shall be released from the requirements for financial assurance for the corrective action program under ~~Rule .1628(d) of this Section.~~ Rule .1628 of this Section and Section .1800 of this Subchapter. Nothing in this Paragraph shall release the owner or operator from the requirements for financial assurance for closure, post-closure care, or potential assessment and corrective action in accordance with Rule .1628 of this Section and Section .1800 of this Subchapter.

History Note: *Authority G.S. 130A-294;*
Eff. October 9, 1993;
Amended Eff. April 1, ~~2011.~~2011;
Readopted Eff. July 1, 2020.

15A NCAC 13B .1680 is proposed for readoption with substantive changes as follows:

15A NCAC 13B .1680 LEACHATE STORAGE REQUIREMENTS

(a) Applicability.

(1) Construction of leachate storage tanks and surface impoundments located at solid waste ~~landfill~~ management facilities ~~after October 9, 1993~~ shall meet the requirements set forth in this Rule.

(2) Liquid treatment and disposal at a solid waste management~~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~~ a description of the liquid to be stored;

(2) ~~The~~ the estimated volume of liquid generated and a proposed recordkeeping system to record actual quantities stored;

(3) ~~A~~ a schedule for liquid removal;

(4) ~~A~~ a description of the final treatment and disposal of the liquid stored;

(5) ~~A~~ a description of the liquid storage facility design;

(6) ~~A~~ a contingency plan for managing unexpected surges in liquid quantities; and

(7) ~~A~~ 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~~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~~ 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 or be lined with a ~~material, or shall be lined with a material,~~ material resistant to the liquid being stored.

(2) ~~All aboveground and onground tanks~~ 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:~~ that shall include level sensors and gauges, high level ~~alarms~~ 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.~~practiced when necessary.~~

(d) Underground tank requirements.

(1) Underground tanks shall be placed a minimum of two feet above the seasonal high ~~ground water~~groundwater 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:~~ that shall include level sensors and gauges, high level ~~alarms~~ 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~~water table and bedrock.

(2) ~~At a minimum, surface~~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;~~.1624 of this Section. ~~or~~

(B) An alternative liner system which is designed and constructed to achieve at least an equivalent containment ~~efficiency.~~efficiency may be used. 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);~~ .1624(b)(8), (b)(9), and (b)(10) of this Section; 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.~~practiced when necessary.~~

(6) A ~~ground-water~~groundwater monitoring system shall be installed and sampled in a manner consistent with the ~~ground-water~~groundwater monitoring requirements for MSWLF units as set forth in Rules .1631 through ~~.1637,~~.1637 of this Section, or using an alternative monitoring system approved by the Division.

(7) 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~~groundwater 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~~groundwater surrounding the impoundment is contaminated, other corrective actions to remediate a contaminant plume may be required by the Department. If the ~~ground water~~groundwater 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.~~1993;
Readopted Eff. July 1, 2020.

From: Grozav, Anca
To: Montie, Jessica; Stanley, Sherri; Sugg, William P; Everett, Jennifer
Cc: Masich, Molly; McGhee, Dana; Hollis, Carrie
Subject: Approval - 15B NCAC 13B .0531-.0545, .0547, .1601-.1627, .1629-.1637, .1680
Date: Tuesday, January 07, 2020 12:44:56 PM
Attachments: image001.png
image002.png
DEQ_2020-01-07.pdf

OSBM has reviewed the DEQ Division of Waste Management's proposed changes to rules 15B NCAC 13B .0531-.0545, .0547, .1601-.1627, .1629-.1637, .1680 in accordance with G.S. 150B-21.4 and with E.O. 70 from 10/21/2010 as amended by E.O. 48 from 4/9/2014. The fiscal note has been approved for publication. Please ensure that the state and local government impacts are included in the Notice of Text and that the NC League of Municipalities and Association of County Commissioners are notified.

The .pdf file of the rule impact analysis (attached) will be posted on our website at the following URL (please allow for some time):
https://files.nc.gov/ncosbm/documents/files/DEQ_2020-01-07.pdf
Please post this link on your agency's website to ensure compliance with G.S. 150B-19.1(c)(5).

Please let me know if you have any questions.

Anca Grozav
Assistant State Budget Officer for Demographic and Economic Analysis
NC Office of State Budget and Management

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