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1 **SECTION .2000 REQUIREMENTS FOR DISPOSAL AND RECYCLING OF COAL COMBUSTION**
2 **RESIDUALS (CCR) FACILITIES AND UNITS**

3

4 15A NCAC 13B .2001 is proposed for adoption as follows:

5 15A NCAC 13B .2001 PURPOSE, SCOPE, AND APPLICABILITY FOR COAL COMBUSTION DISPOSAL
6 AND REUSE FACILITIES AND UNITS

7 (a) Purpose. The purpose of Rules .2001 through .2017 of this Section is to regulate the permitting siting, design,
8 construction, operation, closure and post-closure of all Coal Combustion Residual (CCR) solid waste landfill facilities
9 and units. Rule .2018 of this Section describes the performance standards for Coal Combustion Products (CCP) reuse
10 facilities.

11 (b) Scope. Rules .2001 through .2017 of this Section describe the performance standards, application requirements,
12 and permitting procedures for new and existing CCR disposal facilities. Rule .2018 of this Section describes the
13 performance standards for CCP reuse facilities. Rules of this Section are intended to:

- 14 (1) establish the State standards for disposal and reuse facilities and units to provide for effective
15 practices and protect the public health and environment; and
- 16 (2) coordinate other State Rules applicable to disposal or reuse.

17 (c) Applicability. Owners and operators of CCR and CCP facilities and units shall conform to the requirements of
18 Rules .2001 through .2018 of this Section.

19 (d) Owners and operators of a CCR disposal facility or a CCP reuse facility shall comply with any other applicable
20 Federal, State and Local laws, rules, regulations, or other requirements.

21

22 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2002 is proposed for adoption as follows:

2 **15A NCAC 13B .2002 DEFINITIONS FOR CCR FACILITIES**

3 This Rule contains definitions for terms that appear throughout the Rules pertaining to CCR units, Rules .2001 through
4 .2018 of this Section; additional definitions appear in the specific Rules to which they apply.

5 (1) "100-year flood" means a flood that has a one-percent or greater chance of recurring in any given
6 year or a flood of a magnitude equaled or exceeded once in 100 years on average over a significantly
7 long period.

8 (2) "Active life" or "in operation" means the period of operation beginning with the initial placement
9 of CCR in the CCR unit and ending at completion of closure activities in accordance with Rule
10 .2013 of this Section.

11 (3)

12 (4) "Aquifer" means a geological formation, group of formations, or portion of a formation capable of
13 yielding groundwater.

14 (5) "Areas susceptible to mass movement" means those areas of influence (i.e., areas characterized as
15 having an active or substantial possibility of mass movement) where the movement of earth material
16 at, beneath, or adjacent to the CCR unit(s), because of natural or man-induced events, results in
17 the downslope transport of soil and rock material by means of gravitational influence. Areas of mass
18 movement include, but are not limited to, landslides, avalanches, debris slides and flows,
19 soil fluctuation, block sliding, and rock fall.

20 (6) "Base liner system" means the liner system installed on the CCR unit's foundation to control the
21 flow of leachate.

22 (7) "Beneficial" and "benefit" means projects promoting public health and environmental protection,
23 offering equivalent success relative to other alternatives, and preserving natural resources.

24 (8) "Boiler slag" means the molten bottom ash collected at the base of slag tap and cyclone type furnaces
25 that is quenched with water. It is made up of hard, black, angular particles that have a smooth, glassy
26 appearance.

27 (9) "Bottom ash" means the agglomerated, angular ash particles formed in pulverized coal furnaces that
28 are too large to be carried in the flue gases and collect on the furnace walls or fall through open
29 grates to an ash hopper at the bottom of the furnace.

30 (10) "Cap system" means a liner system installed over the CCR unit(s) to minimize infiltration of
31 precipitation and contain the wastes.

32 (11) "CCR fugitive dust" means solid airborne particulate matter that contains or is derived from CCR,
33 emitted from any source other than a stack or chimney.

34 (12) "CCR landfill" or "landfill" means an area of land or an excavation that receives CCR and which is
35 not a surface impoundment, an underground injection well, a salt dome formation, a salt bed
36 formation, an underground or surface coal mine, or a cave. For purposes of this subpart, a CCR

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- 1 landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice
2 that does not meet the definition of a beneficial use of CCR.
- 3 (13) “CCR Leachate” or “leachate” means any liquid, including any CCR suspended components in
4 liquid, that has percolated through or drained from CCR.
- 5 (14) “CCR pile” or “pile” means any non-containerized accumulation of solid, non-flowing CCR that is
6 placed on the land. CCR that is beneficially used offsite is not a CCR pile.
- 7 (15) “CCR unit” means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR
8 unit, or a combination of more than one of these units, based on the context of the paragraph(s) in
9 which it is used. This term includes both new and existing units, unless otherwise specified.
- 10 (16) “Closed” means placement of CCR in a CCR unit has ceased, and the owner or operator has
11 completed closure of the CCR unit in accordance with Rule .2013 of this Section and has initiated
12 post-closure care in accordance with Rule .2013 of this Section.
- 13 (17) “Coal combustion products (CCP)” means fly ash, bottom ash, boiler slag, or flue gas
14 desulfurization materials that are beneficially used, including use for structural fill.
- 15 (18) “Coal combustion residuals (CCR)” has the same meaning as defined in NCGS 130A- 290.
- 16 (19) “Coal combustion residuals surface impoundment” means a topographic depression, excavation, or
17 diked area that is (i) primarily formed from earthen materials; (ii) without a base liner approved for
18 use by Article 9 of Chapter 130A of the General Statutes or rules adopted thereunder for a
19 combustion products landfill or coal combustion residuals landfill, industrial landfill, or municipal
20 solid waste landfill; and (iii) designed to hold accumulated coal combustion residuals in the form of
21 liquid wastes, wastes containing free liquids, or sludges, and that is not backfilled or otherwise
22 covered during periods of deposition. "Coal combustion residuals surface impoundment" shall only
23 include impoundments owned by a public utility, as defined in NCGS 62-3. "Coal combustion
24 residuals surface impoundment" includes all of the following:
- 25 (a) An impoundment that is dry due to the deposited liquid having evaporated, volatilized, or
26 leached.
- 27 (b) An impoundment that is wet with exposed liquid.
- 28 (c) Lagoons, ponds, aeration pits, settling ponds, tailings ponds, and sludge pits, when these
29 structures are designed to hold accumulated coal combustion residuals.
- 30 (d) A coal combustion residuals surface impoundment that has been covered with soil or other
31 material after the final deposition of coal combustion residuals at the impoundment.
- 32 (20) “Dike” means an embankment, berm, or ridge of either natural or man-made materials used to prevent
33 the movement of liquids, sludges, solids, or other materials.
- 34 (21) “Displacement” means the relative movement of any two sides of a fault measured in any direction.
- 35 (22) “Disposal” means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid
36 waste as defined in section 1004(27) of the Resource Conservation and Recovery Act into or on any land
37 or water so that such solid waste, or constituent thereof, may enter the environment or be emitted into

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- 1 the air or discharged into any waters, including groundwaters. For purposes of this subpart, disposal does
2 not include the storage or the beneficial use of CCR.
- 3 (23) “Encapsulated beneficial use” means a beneficial use of CCR that binds the CCR into a solid matrix that
4 minimizes its mobilization into the surrounding environment.
- 5 (24) “New CCR landfill” means a CCR landfill that has not been permitted to receive waste, physical
6 construction program had begun prior to October 19, 2015.
- 7 (25) “Facility” means all contiguous land, and structures, other appurtenances, and improvements on the land,
8 used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility
9 may consist of several treatments, storage, or disposal operational units (e.g., one or more landfills,
10 surface impoundments, or combinations of them).
- 11 (26) “Factor of safety (Safety factor)” means the ratio of the forces tending to resist the failure of a structure
12 to the forces tending to cause such failure as determined by accepted engineering practice.
- 13 (27) “Fault” means a fracture or fracture zone along which there has been displacement of the two sides
14 relative to one another parallel to the fracture.
- 15 (28) “Floodplain” means the lowland and relatively flat areas adjoining inland and coastal waters, including
16 flood-prone areas of offshore islands, that are inundated by the 100-year flood.
- 17 (29) “Flue gas desulfurization material (FGD)” means the material produced through a process used to reduce
18 sulfur dioxide emissions from the exhaust gas system of a coal-fired boiler. The physical nature of these
19 materials varies from a wet sludge to a dry powdered material, depending on the process, and their
20 composition comprises either sulfites, sulfates, or a mixture thereof.
- 21 (30) “Fly ash” means the very fine, powdery material, composed mostly of silica with nearly all particles
22 spherical in shape, which is a product of burning finely ground coal in a boiler to produce electricity and
23 is removed from the plant exhaust gases by air emission control devices.
- 24 (31) “Free liquids” means liquids that readily separate from the solid portion of a waste under ambient
25 temperature and pressure.
- 26 (32) “Groundwater” means water below the land surface in a zone of saturation.
- 27 (33) “Holocene” means the most recent epoch of the Quaternary period, extending from the end of the
28 Pleistocene Epoch to the present.
- 29 (34) “Hydraulic conductivity” means the rate at which water can move through a permeable medium (i.e.,
30 the coefficient of permeability).
- 31 (35) “In operation” means the same as active life.
- 32 (36) “Industrial solid waste” means solid waste generated by manufacturing or industrial processes that is not
33 a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to,
34 waste resulting from the following manufacturing processes: electric power generation;
35 fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and
36 steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic
37 chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic

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- 1 products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and
2 water treatment. This term does not include mining waste.
- 3 (37) “Karst terranes” means areas where karst topography, with its characteristic surface and subterranean
4 features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock.
5 Characteristic physiographic features present in karst terranes include, but are not limited to, dolines,
6 sinkholes, sinking streams, caves, large springs, and blind valleys.
- 7 (38) “Landfill facility” means all contiguous land and structures, waste management unit(s), other
8 appurtenances, and improvements on the land within the legal description of the site included in or
9 proposed for the Solid Waste Permit.
- 10 (39) “Landfill unit” means a discrete area of land or an excavation that receives a particular type of waste
11 such as industrial or municipal solid waste, and is not a land application unit, surface impoundment,
12 injection well, or waste pile, as defined under 40 CFR Part 257.
- 13 (40) “Lateral expansion” means a horizontal expansion of the waste boundaries of an existing CCR unit(s).
- 14 (41) “Licensed Geologist” means an individual who is licensed to practice geology in accordance with NCGS
15 89E.
- 16 (42) “Liner system” means an engineered environmental control system which can incorporate filters,
17 drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures.
- 18 (43) “Liquefaction factor of safety” means the factor of safety (safety factor) determined using analysis under
19 liquefaction conditions.
- 20 (44) “Liquid waste” means any waste material that is determined to contain "free liquids" as defined by
21 Method 9095 (Paint Filter Liquids Test), S.W. 846.
- 22 (45) “Lithified earth material” means all rock, including all naturally occurring and naturally formed
23 aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma
24 or by induration of loose sediments. This term does not include man-made materials, such as fill,
25 concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth
26 surface.
- 27 (46) “Maximum horizontal acceleration in lithified earth material” means the maximum expected horizontal
28 acceleration at the ground surface as depicted on a seismic hazard map, with a 98% or greater probability
29 that the acceleration will not be exceeded in 50 years, or the maximum expected horizontal acceleration
30 based on a site specific seismic risk assessment.
- 31 (47) “Minerals” means soil, clay, coal, phosphate, metallic ore, and any other solid material or substance of
32 commercial value found in natural deposits on or in the earth.
- 33 (48) “Open pit mine” means an excavation made at the surface of the ground for the purpose of extracting
34 minerals, inorganic and organic, from their natural deposits, which excavation is open to the surface.
- 35 (49) “Operator” means the person(s) responsible for the overall operation of a CCR unit.
- 36 (50) “Overfill” means a new CCR landfill constructed over a closed CCR surface impoundment.
- 37 (51) “Owner” means the person(s) who owns a CCR unit or part of a CCR unit.

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- 1 (52) “Poor foundation conditions” mean those areas where features exist which indicate that a natural or
2 human induced event may result in inadequate foundation support for the structural components of an
3 existing or new CCR unit. For example, failure to maintain static and seismic factors of safety would
4 cause a poor foundation condition.
- 5 (53) “Professional Engineer” means an individual who is licensed to practice engineering in accordance with
6 NCGS 89C.
- 7 (54) “Project engineer” means the official representative of the permittee who is licensed to practice
8 engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying
9 that activities related to the quality assurance of the construction of the solid waste management unit
10 conforms to the Division approved plan, the permit to construct and the rules specified in this Section.
11 All certifications shall bear the seal and signature of the professional engineer and the date of
12 certification.
- 13 (55) “Qualified person” means a person or persons trained to recognize specific appearances of structural
14 weakness and other conditions which are disrupting or have the potential to disrupt the operation or
15 safety of the CCR unit by visual observation and, if applicable, to monitor instrumentation.
- 16 (56) “Receptor” means any human, plant, animal, or structure which is, or has the potential to be, affected by
17 the release or migration of contaminants. Any well constructed for the purpose of monitoring
18 groundwater and contaminant concentrations shall not be considered a receptor.
- 19 (57) “Registered Land Surveyor” means an individual who is licensed to practice surveying in accordance
20 with NCGS 89C.
- 21 (58) “Representative sample” means a sample of a universe or whole (e.g., waste pile, lagoon, and
22 groundwater) which can be expected to exhibit the average properties of the universe or whole. See
23 EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,
24 Chapter 9 (available at
25 <http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>) for a
26 discussion and examples of representative samples.
- 27 (59) “Run-off” means any rainwater, leachate, or other liquid that drains overland from any part of a CCR
28 landfill or lateral expansion of a CCR landfill.
- 29 (60) “Sand and gravel pit or quarry” means an excavation for the extraction of aggregate, minerals or metals.
30 The term sand and gravel pit and/or quarry does not include subsurface or surface coal mines.
- 31 (61) “Seismic factor of safety” means the factor of safety (safety factor) determined using analysis under
32 earthquake conditions using the peak ground acceleration for a seismic event with a 2% probability of
33 exceedance in 50 years, equivalent to a return period of approximately 2,500 years, based on the U.S.
34 Geological Survey (USGS) seismic hazard maps for seismic events with this return period for the region
35 where the CCR surface impoundment is located.

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- 1 (62) “Seismic impact zone” means an area having a 2% or greater probability that the maximum expected
2 horizontal acceleration, expressed as a percentage of the earth’s gravitational pull (g), will exceed 0.10
3 g in 50 years.
- 4 (63) “Solid waste management” or “management” means the systematic administration of the activities which
5 provide for the collection, source separation, storage, transportation, processing, treatment, or disposal
6 of solid waste.
- 7 (64) “Static factor of safety” means the factor of safety (safety factor) determined using analysis under the
8 long-term, maximum storage pool loading condition, the maximum surcharge pool loading condition,
9 and under the end-of construction loading condition.
- 10 (65) “Structural components” mean liners, leachate collection and removal systems, final covers, run-on and
11 run-off systems, inflow design flood control systems, and any other component used in the construction
12 and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents
13 of the unit are not released into the environment.
- 14 (66) “Structural fill” means an engineered fill with a projected beneficial end use constructed using coal
15 combustion products that are properly placed and compacted. For purposes of this Part, the term includes
16 fill used to reclaim open pit mines and for embankments, greenscapes, foundations, construction
17 foundations, and for bases or sub-bases under a structure or a footprint of a paved road, parking lot,
18 sidewalk, walkway, or similar structure.
- 19 (67) “Unstable area” means a location that is susceptible to natural or human induced events or forces capable
20 of impairing the integrity, including structural components of some or all of the CCR unit that are
21 responsible for preventing releases from such unit. Unstable areas can include poor foundation
22 conditions, areas susceptible to mass movements, and karst terrains.
- 23 (68) “Uppermost aquifer” means the geologic formation nearest the natural ground surface that is an aquifer,
24 as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility’s
25 property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the
26 aquifer rises during the wet season.
- 27 (69) “Use” or “reuse” of coal combustion products means the procedure whereby coal combustion products
28 are directly used as either an ingredient in an industrial process to make a product, unless distinct
29 components of the coal combustion products are recovered as separate end products or in as an effective
30 substitute for a commercial product or natural resource
- 31 (70) “Washout” means the carrying away of solid waste by waters of the base flood.

32

33 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2003 is proposed for adoption as follows:

2 **15A NCAC 13B .2003 GENERAL APPLICATION REQUIREMENTS AND PROCESSING FOR CCR**
3 **FACILITIES**

4 (a) Applicability. Owners or operators of a proposed or existing CCR unit or facility shall submit an application
5 document as detailed in Rule .2005 of this Section in accordance with the criteria and scheduling requirements
6 set forth as follows:

7 (1) New facility. Owners or operators proposing to establish a CCR disposal facility or unit in accordance with
8 the following criteria shall submit a Site Study and subsequently an application for a permit to construct as
9 set forth in Paragraph (a) of Rule .2005 of this Section. This rule does not apply to new CCR surface
10 impoundments which are prohibited by GS 130A-309.210(a) A new facility permit application is required
11 when:

- 12 (A) The owner or operator proposes to establish a new disposal facility not previously
13 permitted by the Division.
14 (B) The owner or operator proposes to expand the landfill facility in order to expand the CCR
15 disposal unit(s) boundary approved in accordance with Subparagraph (a)(1) of Rule .2006
16 of this Section.

17 (2) Amendment to the permit. For any subsequent phase of landfill development the owner or operator
18 shall prepare an application to amend the permit to construct in accordance with Paragraph (b) of
19 Rule .2005 of this Section..

20 (3) Substantial amendment to the permit. A permit issued in accordance with Paragraph (c) of this Rule
21 approves a facility plan for the life of the CCR facility and a set of plans for the initial phase of
22 landfill development. The owner or operator shall prepare an application in accordance with
23 Paragraph (c) of Rule .2005 of this Section and submit the application when there is:

- 24 (A) an increase in waste tonnage per year of greater than 10% occurs; or
25 (B) the facility waste boundaries expand from the property in the site suitability approval; or
26 (C) a proposed transfer of ownership of the CCR facility;

27 (4) Modifications to the permit. An owner or operator proposing changes to the plans approved in the
28 permit shall request prior approval from the Division in accordance with Paragraph (d) of Rule .2005
29 of this Section.

30 (5) Permit for Closure and Post-Closure of a CCR surface impoundment- An existing CCR surface
31 impoundment that closes in accordance with 130A-309.214(a)(3)(c) shall prepare an application in
32 accordance with Paragraph (c) of Rule .2005 of this Section

33 (b) Application format guidelines. All applications and plans required by Rules .2001 through .2018 of this Section
34 shall be prepared in accordance with the following guidelines:

35 (1) The initial application shall:

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- 1 (A) contain a cover sheet stating the project title and location, permit number, the applicant's
2 name and address, and the engineer's name, address, signature, date of signature and seal;
3 and
4 (B) contain a statement defining the purpose of the submittal signed and dated by the applicant.
5 (2) The text of the application shall:
6 (A) contain a table of contents or index outlining the body of the application and the
7 appendices;
8 (B) be paginated consecutively; and
9 (C) identify revised text by noting the date of revision on the page.
10 (3) Drawings. The engineering drawings for all landfill facilities shall be submitted using the following
11 format.
12 (A) The sheet size with title blocks shall be scalable such that if printed 1 inch equals 100 foot
13 increments on a plan sized sheet (22 inches by 34 inches).
14 (B) The cover sheet shall include the project title, permit number, applicant's name, sheet index,
15 legend of symbols, and the engineer's name, address, signature, date of signature, and seal.
16 (C) Where the requirements do not explicitly specify a minimum scale, maps and drawings
17 shall be prepared at a scale that adequately illustrates the subject requirement(s).
18 (4) Number of copies. An applicant shall submit at a minimum a copy in pdf format or a format
19 acceptable to the Division. The Division shall request additional copies as necessary. The Division
20 shall require submittal of relevant documents in electronic format.
21 (c) Permitting and Public Information Procedures.
22 (1) Purpose and Applicability.
23 (A) Purpose. During the permitting process the Division shall provide for public review of and
24 comment permit documents containing the applicable design and operating conditions.
25 The Division shall provide for consideration of comments received and notification to the
26 public of the permit design.
27 (B) Applicability. Applications for a Permit to Construct for a new facility, for a substantial
28 amendment to the permit for an existing facility, or for a modification to the permit
29 involving corrective remedy selection required by Paragraphs (d) through (h) of Rule .2015
30 of this Section shall be subject to the requirements of Subparagraphs (c)(2) through (c)(9)
31 of this Rule. Applications submitted in accordance with Subparagraphs (a)(2) and (a)(4) of
32 this Rule are not subject to the requirements of this Paragraph.
33 (2) Draft Permits.
34 (A) Once an application is complete, the Division shall decide whether the permit should be
35 issued or denied.

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- 1 (B) If the Division decides to deny the permit, the Division shall send a notice to deny to the
2 applicant. Reasons for permit denial shall be in accordance with Rule .0203(e) of this
3 Subchapter.
- 4 (C) If the Division decides the permit should be issued, the Division shall prepare a draft
5 permit.
- 6 (D) A draft permit shall contain (either expressly or by reference) all applicable terms and
7 conditions for the permit.
- 8 (E) All draft permits shall be subject to the procedures of Subparagraphs (3) through (9) of this
9 Paragraph, unless otherwise specified in those Subparagraphs.
- 10 (3) Fact Sheet.
- 11 (A) The Division shall prepare a fact sheet for every draft permit.
- 12 (B) The fact sheet shall include a brief description of the type of facility or activity which is
13 the subject of the draft permit. It shall also include a description of the area to be served
14 and of the volume and characteristics of the waste stream, and a projection of the useful
15 life of the landfill. The fact sheet shall contain a brief summary of the basis for the draft
16 permit conditions, including references to applicable statutory or regulatory provisions and
17 appropriate supporting references to the permit application. The fact sheet shall describe
18 the procedures for reaching a decision on the draft permit. It shall include the beginning
19 and ending dates of the comment period under Subparagraph (4) of this Paragraph, the
20 address where comments will be received, the procedures for requesting a public hearing
21 and any other procedures by which the public may participate in the decision. The fact
22 sheet shall contain the name and telephone number of a person to contact for additional
23 information.
- 24 (C) The Division make it available to the public for review or copying on the Division web
25 site.
- 26 (4) Public Notice of Permit Actions and Public Hearings.
- 27 (A) The Division shall give public notice of each of a draft new or substantial amendment
28 permit has been prepared; a public hearing has been scheduled under Subparagraph (6) of
29 this Paragraph; or a notice of intent to deny a permit has been prepared under Part (2)(B)
30 of this Paragraph.
- 31 (C) The Division shall give written notice of denial to the applicant.
- 32 (D) Public notices may describe more than one permit or permit action.
- 33 (E) Public notice of the preparation of a draft permit or a notice of intent to deny a permit shall
34 allow at least 45 days for public comment.
- 35 (F) The Division shall give public notice of a public hearing at least 15 days before the hearing.
36 Public notice of the hearing may be given at the same time as public notice of the draft
37 permit and the two notices may be combined.

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- 1 (G) Public notice of activities described in Part (A) of this Subparagraph shall be given by
2 publication on the Division website, and by any other method deemed necessary or
3 appropriate by the Division to give actual notice of the activities to persons potentially
4 affected.
- 5 (H) General Public Notices. All public notices issued under this Part shall at minimum contain
6 the following: 1) name, address and phone number of the office processing the permit
7 action for which notice is being given; 2) name and address of the owner and operator
8 applying for the permit; 3) a brief description of the business conducted at the facility or
9 activity described in the permit application including the size and location of the facility
10 and type of waste accepted; 4) a brief description of the comment procedures required by
11 Subparagraphs (5) and (6) of this Paragraph, including a statement of procedures to request
12 a public hearing, unless a hearing has already been scheduled, and other procedures by
13 which the public may participate in the permit decision; 5) name, address, and telephone
14 number of a Division staff from whom interested persons may obtain further information;
15 6) a description of the time frame and procedure for making an approval or disapproval
16 decision of the application; and 7) any additional information considered necessary or
17 proper as required by the Division.
- 18 (I) Public Notices for Public Hearing. In addition to the general public notice described in Part
19 (4)(A) of this Paragraph, the public notice of a public hearing shall contain the date, time,
20 and place of the public hearing; a brief description of the nature and purpose of the public
21 hearing, including the applicable rules and procedures; and a concise statement of the
22 issues raised by the persons requesting the hearing.
- 23 (5) Public Comments and Requests for Public Hearings. During the public comment period any
24 interested person may submit written comments on the draft permit and may request a public hearing
25 if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall
26 state the nature of the issues proposed to be raised in the hearing. The Division shall consider all
27 comments in making a final permit decision. The Division shall respond to all comments as provided
28 in Subparagraph (9) of this Paragraph.
- 29 (6) Public Hearings.
- 30 (A) The Division shall hold a public hearing on a draft permit(s) when a hearing is requested.
31 The Division may also hold a public hearing at its discretion whenever such a hearing
32 might clarify one or more issues involved in the permit decision. Public hearings held
33 pursuant to this Rule shall be at a location convenient to the nearest population center to
34 the subject facility. Public notice of the hearing shall be given as specified in Subparagraph
35 (4) of this Paragraph.
- 36 (B) Any person may submit oral or written statements and data concerning the draft permit.
37 The public comment period under Subparagraph (4) of this Paragraph is extended to the

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1 close of any public hearing conducted under this Subparagraph. The hearing officer may
2 also extend the public comment period by so stating at the hearing, when information is
3 presented at the hearing which indicates the importance of extending the period to receive
4 additional comments, to allow potential commentors to gather more information, to allow
5 time for submission of written versions of oral comments made at the hearing, or to allow
6 time for rebuttals of comments made during the hearing.

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

10 (7) Reopening of the Public Comment Period.

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

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

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

23 (8) Permit Decision.

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

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

31 (9) Response to Comments.

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

DRAFT CCR RULE

1 15A NCAC 13B .2004 is proposed for adoption as follows:

2 **15A NCAC 13B .2004 GENERAL REQUIREMENTS FOR CCR FACILITIES AND UNITS**

3 (a) Applicability. Permits issued by the Division for CCR facilities and units shall be subject to the general
4 requirements set forth in this Rule.

5 (b) Terms of the Permit. The Solid Waste Management Permit shall incorporate requirements necessary to comply
6 with this Subchapter and the North Carolina Solid Waste Management Act including the provisions of this Paragraph.

7 (1) Division Approved Plan. Permits shall incorporate a Division approved plan.

8 (2) Permit provisions. All CCR facilities and units shall conform to the specific conditions set forth in
9 the permit and the following general provisions.

10 (A) Duty to Comply. The permittee shall comply with all conditions of the permit, unless
11 otherwise authorized by the Division. Any permit noncompliance, except as otherwise
12 authorized by the Division, constitutes a violation of the Act and is grounds for
13 enforcement action or for permit revocation, modification or suspension.

14 (B) Duty to Mitigate. In the event of noncompliance with the permit, the permittee shall take
15 all reasonable steps to minimize releases to the environment, and shall carry out such
16 measures as are reasonable to prevent adverse impacts on human health or the environment.

17 (C) Duty to Provide Information. The permittee shall furnish to the Division any relevant
18 information that the Division may request to determine whether cause exists for modifying,
19 revoking or suspending the permit, or to determine compliance with the permit. The
20 permittee shall also furnish to the Division, upon request, copies of records required to be
21 kept under the conditions of the permit.

22 (D) Recordation Procedures. The permittee shall comply with the requirements of Rule .0204
23 of this Subchapter "Recordation of Land Disposal Permits" in order for a new permit to be
24 effective.

25 (E) Need to Halt or Reduce Activity. It shall not be a defense for a permittee in an enforcement
26 action to claim that it would have been necessary to halt or reduce the permitted activity in
27 order to maintain compliance with the conditions of the permit.

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

32 (G) Not Transferable. The permit is not transferable.

33 (H) Construction. If construction is not commenced within 18 months from the issuance date
34 of the permit to construct, or an amendment or substantial amendment to the permit, then
35 the permit shall expire. The applicant may re-apply for the permit, which shall be subject
36 to statutes and rules in effect on the date of the re-application.

DRAFT CCR RULE

- 1 (I) Proper Operation and Maintenance. The permittee shall at all times properly operate and
2 maintain all facilities and systems of treatment and control (and related appurtenances)
3 which are installed or used by the permittee to achieve compliance with the conditions of
4 the permit. Proper operation and maintenance includes effective performance, adequate
5 funding, adequate operator staffing and training, and adequate laboratory and process
6 controls, including appropriate quality assurance procedures. This provision requires the
7 operation of back-up or auxiliary facilities or similar systems only when necessary to
8 achieve compliance with the conditions of the permit.
- 9 (J) Inspection and Entry. The permittee shall allow the Division or an authorized
10 representative to enter the permittee's premises where a regulated unit(s) or activity is
11 located or conducted, or where records are kept under the conditions of the permit. The
12 Division or its authorized representative shall have access in order to copy any records
13 required to be kept under the conditions of the permit. The permittee shall allow the
14 Division or its authorized representative to inspect any facilities, equipment (including
15 monitoring and control equipment), practices or operations regulated by the Division. For
16 the purposes of assuring permit compliance or as otherwise authorized by the Act, the
17 permittee shall allow the Division or its authorized representative to sample or monitor, at
18 any location under the operation or control of the permittee, the following: any materials,
19 substances, parameters, soil, groundwater, surface water, gases or ambient air. The
20 permittee shall allow the Division or its authorized representative to take photographs for
21 the purpose of documenting items of compliance or noncompliance at permitted facilities,
22 or where appropriate to protect legitimate proprietary interests, require the permittee to
23 take such photographs for the Division.
- 24 (K) Waste Exclusions. Waste to be excluded from disposal in a CCR landfill is listed in Rule
25 .2012 of this Section. Permit conditions may include additional exclusions as they become
26 necessary in order to protect the public health and the environment or to ensure proper
27 landfill operation.
- 28 (L) Additional Solid Waste Management Activities. Construction and operation of additional
29 solid waste management activities at the landfill facility shall not impede operation or
30 monitoring of the CCR unit(s). Any proposed additional activities shall be submitted to the
31 Division for review, approval, and permitting, as applicable, before construction and
32 operation.

33
34 *Authority NCGS 130-294; NCGS 130A-309.207*
35
36

DRAFT CCR RULE

1 15A NCAC 13B .2005 is proposed for adoption as follows:

2 **15A NCAC 13B .2005 APPLICATION REQUIREMENTS FOR CCR FACILITIES**

3 (a) Permit for a new facility. The owner and operator of a new CCR facility or unit shall meet the requirements of
4 Rule .2006 of this Section prior to submitting an application for a permit to construct.

5 (1) Permit to Construct. The owner and operator of a new facility shall provide a complete application
6 for a permit to construct which shall contain the following:

7 (A) a facility plan that describes the comprehensive development of the CCR facility for the
8 life of the site prepared in accordance with Rule .2007 of this Section;

9 (B) an engineering plan for the initial phase of landfill development prepared in accordance
10 with Rule .2009 of this Section;

11 (C) a construction quality assurance plan prepared in accordance with Rule .2011 of this
12 Section;

13 (D) an operation plan prepared in accordance with Rule .2012 of this Section;

14 (E) a closure and post-closure plan prepared in accordance with Rule .2013 of this Section; and

15 (F) monitoring plans prepared in accordance with Paragraph (a) of Rule .2014 of this Section.

16 (2) Permit to Operate. The owner and operator shall meet the pre-operative requirements of the permit
17 to construct in order to qualify the constructed CCR unit for a permit to operate. Construction quality
18 assurance documentation shall be submitted in a timely and organized manner in order to facilitate
19 the Division's review.

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

21 (1) an updated engineering plan prepared in accordance with Rule .2009 of this Section;

22 (2) an updated construction quality assurance plan prepared in accordance with Rule .2011 of this
23 Section;

24 (3) an updated operation plan prepared in accordance with Rule .2012 of this Section;

25 (4) an updated closure and post-closure plan prepared in accordance with Rule .2013 of this Section;
26 and

27 (5) an updated monitoring plan prepared in accordance with Rule .2014 of this Section.

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

30 (1) a facility plan that describes the comprehensive development of the CCR facility prepared in
31 accordance with Rule .2007 of this Section; and

32 (2) local government approval in accordance with Subparagraph (d) ~~(e)(11)~~ of Rule .2006 of this
33 Section.

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

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1 (e) A permit for closure/post closure of a CCR surface impoundment. A complete application for a permit for
2 closure/post closure of a CCR surface impoundment shall contain:

- 3 (1) an engineering plan prepared in accordance with Rule .2009 of this Section;
- 4 (2) a construction quality assurance plan prepared in accordance with Rule .2011 of this Section;
- 5 (3) an operation plan prepared in accordance with Rule .2012 of this Section;
- 6 (4) a closure and post-closure plan prepared in accordance with Rule .2013 of this Section.

7

8

9 *Authority NCGS 130-294; NCGS 130A-309.207*

10

DRAFT CCR RULE

1 15A NCAC 13B .2006 is proposed for adoption as follows:

2 **15A NCAC 13B .2006 SITE STUDY FOR CCR FACILITIES**

3 (a) Purpose. As required under Rule .2005 of this Section, the owner or operator shall prepare a site study which
4 meets the requirements of this Rule. The Division shall review the site study for a proposed new facility prior to
5 consideration of an application for a permit to construct. Following review of the site study, the Division shall notify
6 the applicant that either:

- 7 (1) the site is deemed suitable and the applicant is authorized to prepare an application for a permit to
8 construct in accordance with Rule .2005 of this Section; or
9 (2) the site is deemed unsuitable for establishing a CCR unit(s) and shall specify the reasons that would
10 prevent the CCR unit(s) from being operated in accordance with NCGS 130A Article 9, or this
11 Subchapter, and any applicable federal laws and regulations.

12 (b) Scope. The site is the land which is proposed for the landfill facility. The site study presents a characterization of
13 the land, incorporating various investigations and requirements pertinent to suitability of a CCR facility. The scope of
14 the site study includes criteria associated with the public health and welfare, and the environment. The economic
15 feasibility of a proposed site is not within the scope of this study. The information in the site study shall accurately
16 represent site characteristics and shall be prepared by qualified environmental professionals as set forth in
17 Subparagraph (58) of Rule .2002 of this Subchapter. New CCR unit(s) and lateral expansions shall comply with the
18 siting criteria set forth in Paragraph (c) of this Rule, Subparagraphs (4) through (10). In order to demonstrate
19 compliance with specific criteria for each of the respective location restrictions, documentation or approval by
20 agencies other than the Division of Waste Management, Solid Waste Section may be required. The scope of
21 demonstrations including design and construction performance shall be addressed in the site study.

22 (c) The site study prepared for a CCR facility shall include the information required by this Paragraph.

- 23 (1) Characterization study. The site characterization study area includes the landfill facility and a 2000-
24 foot perimeter measured from the proposed boundary of the landfill facility. The study shall include
25 an aerial photograph taken within one year of the original submittal date, a report, and a local map.
26 The map and photograph shall be at a scale of at least one inch equals 400 feet. The study shall
27 identify the following:
- 28 (A) the entire property proposed for the disposal site and any on-site easements;
 - 29 (B) existing land use and zoning;
 - 30 (C) the location of residential structures and schools;
 - 31 (D) the location of commercial and industrial buildings, and other potential sources of
32 contamination;
 - 33 (E) the location of potable wells and public water supplies;
 - 34 (F) historic sites;
 - 35 (G) state nature and historic preserves;

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- 1 (H) the existing topography and features of the disposal site including: general surface water
2 drainage patterns and watersheds, 100-year floodplains, perennial and intermittent streams,
3 rivers, and lakes; and
- 4 (I) the classification of the surface water drainage from landfill site in accordance with 15A
5 NCAC 02B .0300.
- 6 (2) Proposed Facility Plan. A conceptual plan for the development of the facility including drawings
7 and a report shall be prepared which includes the drawings and reports described in Subparagraphs
8 (d)(1), (e)(1), (e)(2), and (e)(3) of Rule .2007 of this Section.
- 9 (3) Site Hydrogeologic Report. The study shall be prepared in accordance with the requirements set
10 forth in Paragraph (a) of Rule .2008 of this Section.
- 11 (4) Floodplain Location Restrictions. CCR units or constructed embankments used to construct a CCR
12 unit shall not be located in floodplains unless the owners or operators demonstrate that the unit will
13 not restrict the flow of the flood, reduce the temporary water storage capacity of the floodplain, or
14 result in washout of solid waste so as to pose a hazard to human health and the environment.
- 15 (5) Wetlands Location Restriction. New CCR units and lateral expansions shall not be located in
16 wetlands, unless the owner or operator can make the following demonstrations to the Division:
- 17 (A) Where applicable under Sections 401 and 404 of the Clean Water Act, the presumption
18 that a practicable alternative to the proposed landfill facility is available which does not
19 involve wetlands is clearly rebutted.
- 20 (B) The construction and operation of the CCR unit(s) will not cause or contribute to violations
21 of any applicable State water quality standards and will not violate any applicable toxic
22 effluent standard or prohibition under Section 307 of the Clean Water Act.
- 23 (C) The construction and operation of the CCR unit(s) will not jeopardize the continued
24 existence of endangered or threatened species or result in the destruction or adverse
25 modification of a critical habitat, protected under the Federal Endangered Species Act of
26 1973. The construction and operation of the CCR unit(s) will not violate any requirement
27 under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a
28 marine sanctuary.
- 29 (D) The construction and operation of the CCR unit(s) will not cause or contribute to significant
30 degradation of wetlands.
- 31 (E) The owner or operator shall demonstrate the integrity of the CCR unit(s) and its ability to
32 protect ecological resources by addressing the following factors: (1) erosion, stability, and
33 migration potential of native wetland soils, muds and deposits used to support the CCR
34 unit; (2) erosion, stability, and migration potential of dredged and fill materials used to
35 support the CCR unit; the volume and chemical nature of the waste managed in the CCR
36 unit; (3) impacts on fish, wildlife, and other aquatic resources and their habitat from release
37 of the solid waste; (4) the potential effects of catastrophic release of waste to the wetland

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- 1 and the resulting impacts on the environment; and (5) any additional factors, as necessary,
2 to demonstrate that ecological resources in the wetland are sufficiently protected to the
3 extent required under Sections 401 and 404 of the Clean Water Act.
- 4 (F) The owner or operator shall demonstrate that steps have been taken to attempt to achieve
5 no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to
6 wetlands to the maximum extent practicable in accordance with Part (c)(5)(A) - (D) of this
7 Rule, then minimizing unavoidable impacts to the maximum extent practicable, and finally
8 offsetting remaining unavoidable wetland impacts through all appropriate and practicable
9 compensatory mitigation actions (e.g., restoration of existing degraded wetlands or
10 creation of man-made wetlands).
- 11 (G) The owner or operator shall also demonstrate that sufficient information is available to
12 make a reasonable determination with respect to each of the demonstrations required by
13 this Rule.
- 14 (H) For purposes of this Rule, wetlands means those areas that are defined in 40 CFR
15 232.2(r).
- 16 (6) Fault Areas. New CCR units and lateral expansions shall not be located within 200 feet (60 meters)
17 of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to
18 the Division that an alternative setback distance of less than 200 feet (60 meters) will prevent
19 damage to the structural integrity of the CCR unit and will be protective of human health and the
20 environment.
- 21 (7) Seismic Impact Zones. New CCR units and lateral expansions shall not be located in seismic
22 impact zones, unless the owner or operator demonstrates to the Division that all containment
23 structures, including liners, leachate collection systems, and surface water control systems, are
24 designed to resist the maximum horizontal acceleration in lithified earth material for the site.
- 25 (8) Unstable Area Location Restrictions. New CCR units and lateral expansions shall not be located in
26 an unstable area unless the owners and operators of new CCR unit(s) and lateral expansions
27 proposed for location in an unstable area demonstrate that engineering measures have been
28 incorporated in the CCR unit's design to ensure that the integrity of any structural components of
29 the CCR unit will not be disrupted. The owner and operator shall consider the following factors, at
30 a minimum, when determining whether an area is unstable:
- 31 (A) On-site or local soil conditions that may result in significant differential settling;
32 (B) On-site or local geologic or geomorphologic features; and
33 (C) On-site or local human-made features or events (both surface and subsurface).
- 34 (9) Cultural Resources Location Restrictions. New CCR units and lateral expansions shall not damage
35 or destroy a property of archaeological or historical significance which has been listed or determined
36 eligible for a listing in the National Register of Historic Places. To aid in making a determination as
37 to whether the property is of archeological or historical significance, the State's Historic Preservation

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1 Office in the Department of Cultural Resources may request the owner and operator to perform a
2 site-specific survey which shall be included in the Site Study.

3 (10) State Nature and Historic Preserve Location Restrictions. New CCR units and lateral expansions
4 shall not have an adverse impact, considering the purposes for designation of the Preserve lands and
5 the location, access, size and operation of the landfill, on any lands included in the State Nature and
6 Historic Preserve.

7 (11) Water Supply Watersheds Location Restrictions;

8 (A) New CCR units and lateral expansions shall not be located in the critical area of a water
9 supply watershed, or in the watershed for a stream segment classified as WS-I, or in
10 watersheds of other water bodies which indicate that no new landfills are allowed in
11 accordance with the rules codified at 15A NCAC 02B Section .0200 entitled
12 "Classifications and Water Quality Standards Applicable to Surface Waters of North
13 Carolina."

14 (B) New CCR units and lateral expansions which proposes to discharge leachate to surface
15 waters and shall obtain a National Pollution Discharge Elimination System (NPDES)
16 Permit from the Division of Environmental Management pursuant to Section 402 of the
17 United States Clean Water Act, shall not be located within watersheds classified as WS-II
18 or WS-III, or in watersheds of other water bodies which indicate that no new discharging
19 landfills are allowed, in accordance with the rules codified at 15A NCAC 02B Section
20 .0200.

21 (12) Endangered and Threatened Species Location Restrictions. New CCR units and lateral expansions
22 shall not jeopardize the continued existence of endangered or threatened species or result in the
23 destruction or adverse modification of a critical habitat, protected under the Federal Endangered
24 Species Act of 1973.

25 (13) Local government approvals for CCRs.

26 (d) Notwithstanding (1) through (5) below, no local government approval or franchise shall be required for a CCR
27 unit used only to dispose of waste generated by a coal-fired generating unit, or generated at its facility or generated at
28 a facility located in North Carolina that is owned by the investor-owned utility, that is owned or operated by an
29 investor-owned utility subject to the requirements of NCGS143-215.107D.

30 (1) If the permit applicant is a unit of local government in which jurisdiction the proposed CCR site is
31 located, the approval of the governing board shall be required. Approval may be in the form of
32 either a resolution or a vote on a motion. A copy of the resolution or the minutes of the meeting
33 where the vote was taken shall be submitted to the Division as part of the site study.

34 (2) A permit applicant other than the unit of local government with jurisdiction over the proposed
35 landfill site shall obtain a franchise in accordance with G.S 130A-294(b1)(3) from each unit of local
36 government in whose jurisdiction the site is located. A copy of the franchise shall be submitted to
37 the Division as part of the site study.

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1 (3) Prior to issuance of approval or a franchise, the jurisdictional local government(s) where the landfill
2 is to be located shall hold at least one public meeting to inform the community of the proposed waste
3 management activities as described in the proposed facility plan prepared in accordance with
4 Subparagraph (2) of this Paragraph. The local government where the landfill is to be located shall
5 provide a public notice of the meeting at least 30 days prior to the meeting. For purposes of this
6 Part, public notice shall include a legal advertisement placed in a newspaper or newspapers serving
7 the county and provision of a news release to at least one newspaper serving the county. Public
8 notice shall include time, place, and purpose of the meetings required by this Part. The application
9 for a franchise or other documentation as required by the appropriate local government(s), shall be
10 placed at a location that is accessible by the public. This location shall be noted in the public notice.
11 The permit applicant shall notify the property owners of all property that shares a common border
12 with the proposed facility by means of a U.S. Postal Service registered letter, return receipt
13 requested. The notice shall give the date, time and place of the public meeting, and shall describe
14 the facility plan for the landfill, including the areal location and final elevation of all waste disposal
15 units, the type and amount of waste to be disposed at the landfill, any other waste management
16 activities to be conducted at the facility, and the proposed location of the entrance to the facility.
17 Mailings shall be postmarked a minimum of 30 days prior to the public meeting which is being
18 noticed. The applicant shall provide documentation of the content and mailing of the notices in the
19 site study.

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

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

27 (e) The owner or operator of the CCR unit shall comply with the recordkeeping, notification and the Internet
28 requirements specified in Rule .2017(d) of this Section.

29
30 *Authority NCGS 130-294; NCGS 130A-309.207*

DRAFT CCR RULE

1 15A NCAC 13B .2007 is proposed for adoption as follows:

2 **15A NCAC 13B .2007 FACILITY PLAN FOR CCR LANDFILLS**

3 (a) Purpose. As required under Rule .2005 of this Section, a permit applicant shall prepare a facility plan which meets
4 the requirements of this Rule.

5 (b) Scope.

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

14 (2) The areal limits of the CCR unit(s), total capacity of the CCR unit(s), and the proposed waste stream
15 shall be consistent with the Division's approval set forth in accordance with Rule .2006 (a)(1) of this
16 Section for a new facility.

17 (c) Use of Terms. The terminology used in describing areas of the CCR unit(s) shall be defined as follows and shall
18 be used consistently throughout a permit application.

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

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

22 (3) A "subcell" is a subdivision of a cell, which describes leachate and stormwater management, if
23 required, for active or inactive areas of the constructed CCR unit(s).

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

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

27 (A) Delineate the areal limits of all landfill units, and incorporate the buffer requirements set
28 forth in Item (3) of Rule .2010 of this Section;

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

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

32 (D) Define phases of development for the life of the site. The minimum design time for a phase
33 shall be approximately five-years of capacity.

34 (E) Delineate proposed final contours for the CCR unit(s) and facility features for closure; and

35 (F) Delineate physical features including floodplains, wetlands, unstable areas, and cultural
36 resource areas as defined in Rule .2006 of this Section.

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- 1 (2) Landfill Operation. The following information related to the long-term operation of the CCR unit
2 shall be included in facility drawings:
- 3 (A) proposed transitional contours for each phase of development including operational grades
4 for existing phase(s) and construction grading for the new phase; and
- 5 (B) stormwater segregation features and details for inactive landfill subcells, if included in the
6 design or required.
- 7 (3) Survey. A survey locating all property boundaries for the proposed landfill facility certified by an
8 individual licensed to practice land surveying in the State of North Carolina.
- 9 (e) Facility Report. The facility plan shall include the following information:
- 10 (1) Waste stream. A discussion of the characteristics of the wastes received at the facility and facility
11 specific management plans shall incorporate:
- 12 (A) the types of waste specified for disposal;
- 13 (B) average yearly disposal rates in tons and a representative daily rate that is consistent with
14 the local government approval, if required, in accordance with Rule .2006 of this Section;
- 15 (C) the area served by the facility;
- 16 (D) procedures for segregated management at different on-site facilities; and
- 17 (E) equipment requirements for operation of the CCR unit(s).
- 18 (2) Landfill Capacity. An analysis of landfill capacity and soil resources shall be performed.
- 19 (A) The data and assumptions used in the analysis shall be included with the facility drawings
20 and disposal rates specified in the facility plan and representative of operational
21 requirements and conditions.
- 22 (B) The conclusions shall provide estimates of gross capacity of the CCR unit; gross capacity
23 for each phase of development of the CCR unit; the estimated operating life of all CCR
24 units in years; and required quantities of soil for landfill construction, operation, and
25 closure; and available soil resources from on-site. Gross capacity is defined as the volume
26 of the landfill calculated from the elevation of the initial waste placement through the top
27 of the final cover, including any periodic cover.
- 28 (3) Special engineering features.
- 29 (A) Leachate management systems. The performance of and design concepts for the leachate
30 collection system within active areas of the CCR unit(s), chimney drains, and any storm
31 water segregation included in the engineering design shall be described. Normal operating
32 conditions shall be defined. A contingency plan shall be prepared for storm surges or other
33 considerations exceeding design parameters for the storage or treatment facilities.
- 34 (B) Containment and environmental control systems. A general description of the systems
35 designed for proper landfill operation, system components, and corresponding functions
36 shall be provided.
- 37 (C) Other device, components, and structures, if proposed by the applicant, shall be described.

DRAFT CCR RULE

1

2 *Authority NCGS 130-294; NCGS 130A-309.207*

DRAFT CCR RULE

1 15A NCAC 13B .2008 is proposed for adoption as follows:

2 **15A NCAC 13B .2008 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATIONS FOR CCR**
3 **FACILITIES**

4 (a) Site Hydrogeologic Report. A permit applicant shall conduct a hydrogeologic investigation and prepare a report.
5 An investigation is required to assess the geologic and hydrogeologic characteristics of the proposed site to determine
6 the suitability of the site for solid waste management activities, which areas of the site are most suitable for CCR units,
7 and the general groundwater flow paths and rates for the uppermost aquifer. The report shall provide an understanding
8 of the relationship of the site groundwater flow regime to local and regional hydrogeologic features with special
9 emphasis on the relationship of CCR units to groundwater receptors (especially drinking water wells) and to
10 groundwater discharge features. Additionally, the scope of the investigation shall include the general geologic
11 information necessary to address compliance with the pertinent location restrictions described in Rule .2006 of this
12 Section. The Site Hydrogeologic Report shall provide, at a minimum, the following information:

- 13 (1) A report on local and regional geology and hydrogeology based on research of available literature
14 for the area. This information is to be used in planning the field investigation. For sites located in
15 piedmont or mountain regions, this report shall include an evaluation of structurally controlled
16 features identified on a topographic map of the area.
- 17 (2) A report on field observations of the site that includes information on the following:
- 18 (A) topographic setting, springs, streams, drainage features, existing or abandoned wells, rock
19 outcrops, (including trends in strike and dip), and other features that may affect site
20 suitability or the ability to effectively monitor the site; and
- 21 (B) groundwater discharge features. For a proposed site where the owner or operator does not
22 control the property from any landfill unit boundary to the controlling, downgradient,
23 groundwater discharge feature(s), additional borings, geophysics or other hydrogeological
24 investigations may be required to characterize the nature and extent of groundwater flow;
25 and
- 26 (C) the hydrogeological properties of the bedrock, if the uppermost groundwater flow is
27 predominantly in the bedrock. Bedrock for the purpose of this rule is defined as material
28 below auger refusal.
- 29 (3) Borings for which the numbers, locations, and depths are sufficient to provide an adequate
30 understanding of the subsurface conditions and groundwater flow regime of the uppermost aquifer
31 at the site. The number and depths of borings required will depend on the hydrogeologic
32 characteristics of the site. At a minimum, there shall be an average of one boring for each 10 acres
33 of the proposed landfill facility unless otherwise authorized by the Division. All borings intersecting
34 the water table shall be converted to piezometers or monitoring wells in accordance with 15A NCAC
35 02C .0108.

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- 1 (4) A testing program for the borings which describes the frequency, distribution, and type of samples
2 taken and the methods of analysis (ASTM Standards or test methods approved by the Division) used
3 to obtain, at a minimum, the following information:
- 4 (A) standard penetration - resistance (ASTM D 1586);
 - 5 (B) particle size analysis (ASTM D 422);
 - 6 (C) soil classification: Unified Soil Classification System (USCS) (ASTM D 2487);
 - 7 (D) formation descriptions; and
 - 8 (E) saturated hydraulic conductivity, porosity, effective porosity, and dispersive characteristics
9 for each lithologic unit of the uppermost aquifer including the vadose zone.
- 10 (5) In addition to borings, other techniques may be used to investigate the subsurface conditions at the
11 site, including but not limited to: geophysical well logs, surface geophysical surveys, and tracer
12 studies.
- 13 (6) Stratigraphic cross-sections identifying hydrogeologic and lithologic units, and stabilized water
14 table elevations.
- 15 (7) Water table information, including:
- 16 (A) tabulations of water table elevations measured at the time of boring, 24 hours, and
17 stabilized readings for all borings (measured within a period of time short enough to avoid
18 temporal variations in groundwater flow which could preclude accurate determination of
19 groundwater flow direction and rate);
 - 20 (B) tabulations of stabilized water table elevations over time in order to develop an
21 understanding of seasonal fluctuations in the water table;
 - 22 (C) an estimation of the long-term seasonal high water table based on stabilized water table
23 readings, hydrographs of wells in the area, precipitation and other meteorological data, and
24 streamflow measurements from the site frequent enough to demonstrate infiltration and
25 runoff characteristics, and any other information available; and
 - 26 (D) a discussion of any natural or man-made activities that have the potential for causing water
27 table fluctuations, including but not limited to, tidal variations, river stage changes, flood
28 pool changes of reservoirs, high volume production wells, and injection wells.
- 29 (8) The horizontal and vertical dimensions of groundwater flow including flow directions, rates, and
30 gradients.
- 31 (9) Groundwater contour map(s) to show the occurrence and direction of groundwater flow in the
32 uppermost aquifer and any other aquifers identified in the hydrogeologic investigation. The
33 groundwater contours shall be superimposed on a topographic map. The location of all borings and
34 rock cores and the water table elevations or potentiometric data at each location used to generate the
35 groundwater contours shall be shown on the groundwater contour map(s).
- 36 (10) A topographic map of the site locating soil borings with accurate horizontal and vertical control,
37 which are tied to a permanent onsite benchmark.

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- 1 (11) Information for wells and water intakes within the site characterization study area, in accordance
2 with Rule .2006(c) of this Section including:
- 3 (A) boring logs, construction records, field logs and notes, for all onsite borings, piezometers
4 and wells;
- 5 (B) construction records, number and location served by wells, and production rates, for public
6 water wells; and
- 7 (C) available information for all surface water intakes, including use and production rate.
- 8 (12) Identification of other geologic and hydrologic considerations including but not limited to: slopes,
9 streams, springs, gullies, trenches, solution features, karst terranes, sinkholes, dikes, sills, faults,
10 mines, groundwater discharge features, and groundwater recharge/discharge areas.
- 11 (13) A report summarizing the geological and hydrogeological evaluation of the site that includes the
12 following:
- 13 (A) a description of the relationship between the uppermost aquifer of the site to local and
14 regional geologic and hydrogeologic features,
- 15 (B) a discussion of the groundwater flow regime of the site focusing on the relationship of CCR
16 unit(s) to groundwater receptors and to groundwater discharge features,
- 17 (C) a discussion of the overall suitability of the proposed site for solid waste management
18 activities and which areas of the site are most suitable for CCR units, and
- 19 (D) a discussion of the groundwater flow regime of the uppermost aquifer at the site and the
20 ability to effectively monitor the CCR units in order to ensure early detection of any release
21 of constituents to the uppermost aquifer.
- 22 (b) Design Hydrogeologic Report
- 23 (1) A geological and hydrogeological report shall be submitted in the application for the Permit to
24 Construct. This report shall contain the information required by Subparagraph (2) of this Paragraph.
25 The number and depths of borings required shall be based on the geologic and hydrogeologic
26 characteristics of the landfill facility. At a minimum, there shall be an average of one boring for
27 each acre of the investigative area. The area of investigation shall, at a minimum, be the area within
28 the unit footprint and unit compliance boundary, unless otherwise authorized by the Division. The
29 scope and purpose of the investigation is as follows:
- 30 (A) The investigation shall provide adequate information to demonstrate compliance with the
31 vertical separation and foundation standards set forth in Rule .2010(e) of this Section.
- 32 (B) The report shall include an investigation of the hydrogeologic characteristics of the
33 uppermost aquifer for the proposed phase of CCR development and any leachate
34 management unit(s). The purpose of this investigation is to provide more detailed and
35 localized data on the hydrogeologic regime for this area in order to design an effective
36 water quality monitoring system.
- 37 (2) The Design Hydrogeologic Report shall provide, at a minimum, the following information:

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- 1 (A) the information required in Subparagraphs (a)(4) through (a)(12) of this Rule;
- 2 (B) the technical information necessary to determine the design of the monitoring system as
- 3 required by Paragraph (c) of Rule .2014 of this Section;
- 4 (C) the technical information necessary to determine the relevant point of compliance as
- 5 required by Part (c)(1)(B) of Rule .2014 of this Section;
- 6 (D) rock cores (for sites located in the piedmont or mountain regions) for which the numbers,
- 7 locations, and depths are adequate to provide an understanding of the fractured bedrock
- 8 conditions and groundwater flow characteristics of at least the upper 10 feet of the bedrock.
- 9 Testing for the corings shall provide, at a minimum, rock types, recovery values, rock
- 10 quality designation (RQD) values, saturated hydraulic conductivity and secondary porosity
- 11 values, and rock descriptions, including fracturing and jointing patterns, etc.;
- 12 (E) a groundwater contour map based on the estimated long-term seasonal high water table
- 13 that is superimposed on a topographic map and includes the location of all borings and rock
- 14 cores and the water table elevations or potentiometric data at each location used to generate
- 15 the groundwater contours;
- 16 (F) a bedrock contour map (for sites located in piedmont or mountain regions) illustrating the
- 17 contours of the upper surface of the bedrock that is superimposed on a topographic map
- 18 and includes the location of all borings and rock cores and the top of rock elevations used
- 19 to generate the upper surface of bedrock contours;
- 20 (G) a three dimensional groundwater flow net or several hydrogeologic cross-sections that
- 21 characterize the vertical groundwater flow regime for this area;
- 22 (H) a report on the groundwater flow regime for the area including groundwater flow paths for
- 23 both horizontal and vertical components of groundwater flow, horizontal and vertical
- 24 gradients, flow rates, groundwater recharge areas and discharge areas;
- 25 (I) a report on the soils in the four feet immediately underlying the waste with relationship to
- 26 properties of the soil. Soil testing cited in Subparagraph (a)(4) of this Rule shall be used
- 27 as a basis for this discussion; and
- 28 (J) a certification by a Licensed Geologist that all borings which intersect the water table at
- 29 the site have been constructed and maintained as permanent monitoring wells in
- 30 accordance with 15A NCAC 02C .0108, or that the borings will be properly abandoned in
- 31 accordance with the procedures for permanent abandonment of wells as delineated in 15A
- 32 NCAC 02C .0113. All piezometers within the footprint area shall be overdrilled to the full
- 33 depth of the boring, prior to cement or bentonite grout placement, and the level of the grout
- 34 within the boring shall not exceed in height the elevation of the proposed basegrade.
- 35 (3) This section shall not apply to a permit for closure/postclosure prepared in accordance with
- 36 rule .2005(e).
- 37

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1 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2009 is proposed for adoption as follows:

2 **15A NCAC 13B .2009 ENGINEERING PLAN FOR CCR FACILITIES**

3 (a) Purpose. The engineering plan shall incorporate the detailed plans and specifications relative to the design and
4 performance of the CCR unit's containment and environmental control systems. This plan shall set forth the design
5 parameters and construction requirements for the components of the CCR's systems and shall establish the
6 responsibilities of the design engineer. The engineered components shall be described in Rule .2010 of this Section.
7 As required under Rule .2005 of this Section, the owner or operator shall submit an engineering plan, which meets the
8 requirements of this Rule.

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

12 (c) Scope. An engineering plan shall be prepared for a minimum phase of development that is approximately five
13 years of operating capacity up to a maximum of the life-of-the site consistent with the development phases and design
14 criteria defined in the facility plan. The engineering plan shall contain a report and a set of drawings which consistently
15 represent the engineering design.

16 (d) An engineering report shall contain:

- 17 (1) A summary of the facility design that includes:
 - 18 (A) a discussion of the analytical methods used to evaluate the design,
 - 19 (B) definition of the critical conditions evaluated and assumptions made,
 - 20 (C) a list of technical references used in the evaluation, and
 - 21 (D) completion of any applicable location restriction demonstrations in accordance with Rule
22 .2006 of this Section.
- 23 (2) A description of the materials and construction practices that conforms to the requirements set forth
24 in Rule .2010 of this Section.
- 25 (3) A copy of the Design Hydrogeologic Report prepared in accordance with Paragraph (b) of Rule
26 .2008 of this Section.

27 (e) Engineering drawings shall illustrate:

- 28 (1) existing conditions: site topography, features, existing disposal areas, roads, and buildings;
- 29 (2) grading plans: proposed limits of excavation, subgrade elevations, intermediate grading for partial
30 construction;
- 31 (3) stormwater segregation system, if required: location and detail of features;
- 32 (4) cap system: base and top elevations, landfill gas devices, infiltration barrier, surface water removal,
33 protective and vegetative cover, and details;
- 34 (5) temporary and permanent sedimentation and erosion control plans;
- 35 (6) vertical separation requirement estimates including:
 - 36 (A) Cross-sections, showing borings, which indicate existing ground surface elevations, base
37 grades, seasonal high groundwater level, estimated long-term seasonal high groundwater

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1 level in accordance with Part (b)(2)(E) of Rule .2008 of this Section, and bedrock level in
2 accordance with Part (b)(2)(F) of Rule .2008 of this Section; and

3 (B) A map showing the existing ground surface elevation and base grades. The map shall
4 include labeled boring locations which indicate seasonal high groundwater level, estimated
5 long term high groundwater level in accordance with Part (b)(2)(E) of Rule .2008 of this
6 Section, and bedrock level in accordance with Part (b)(2)(F) of Rule .2008 of this Section.

7 (f) The engineering plan shall also describe and illustrate additional engineering features and details, if proposed by
8 the applicant.

9

10 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2010 is proposed for adoption as follows:

2 **15A NCAC 13B .2010 CONSTRUCTION REQUIREMENTS FOR CCR FACILITIES**

3 (a) This Rule establishes the performance standards and minimum criteria for designing and constructing a CCR
4 unit. Additional standards for the cap system are described in Rule .2013 of this Section. New CCR units and lateral
5 expansions shall comply with the following design and construction criteria.

6 (b) Base liner system description. The base liner system is constructed on the landfill subgrade and shall be
7 designed to efficiently contain, collect and remove leachate generated by the CCR unit. At a minimum, the components
8 of the liner system shall consist of one of the following designs.

9 (i) A composite liner utilizing a compacted clay liner (CCL). The composite liner is one liner that
10 consists of two components; a geomembrane liner installed above and in direct and uniform contact
11 with a compacted clay liner with a minimum thickness of 24 inches (0.61 m) and a permeability
12 of no more than 1.0×10^{-7} cm/sec. The composite liner shall be designed and constructed in
13 accordance with Subparagraphs (b)(8) and (10) of this Rule.

14 (ii) A composite liner utilizing a geosynthetic clay liner (GCL). The composite liner is one liner that
15 consists of three components: a geomembrane liner installed above and in uniform contact with a
16 GCL overlying a compacted clay liner with a minimum thickness of 18 inches (0.46 m) and a
17 permeability of no more than 1.0×10^{-5} cm/sec. The composite liner shall be designed and
18 constructed in accordance with Subparagraphs (b)(8), (9), and (10) of this Rule.

19 (iii) A composite liner utilizing two geomembrane liners. The composite liner consists of three
20 components; two geomembrane liners each with an overlying leachate drainage system designed
21 to reduce the maximum predicted head acting on the lower membrane liner to less than one inch.
22 The lower membrane liner shall overlie a compacted clay liner with a minimum thickness of 12
23 inches (0.31m) and a permeability of no more than 1.0×10^{-5} cm/sec. The composite liner system
24 shall be designed and constructed in accordance with Subparagraphs (b)(8) and (10) of this Rule.

25 (iv) A composite liner for a combustion products landfill to be constructed partially or entirely within
26 areas that have been formerly used for the storage or disposal of combustion products will be
27 constructed in accordance with NCGS 130A-295.4 (b).

28 (v) A composite liner for a converted CCR impoundment to a CCR landfill will be constructed in
29 accordance with NCGS 130A-309.214 (a) (1) a. .

30 (c) Leachate collection system design and operation. The leachate collection system, including all contributing
31 appurtenances such as chimney drains or side slope drains if specified, shall be hydraulically designed to remove
32 leachate from the CCR unit and ensure that the leachate head on the composite liner does not exceed one foot
33 under normal operating conditions. A means of quantitatively assessing the performance of the leachate
34 collection system shall be provided in the engineering plan. The performance analysis shall evaluate the flow
35 capacities of the drainage network necessary to convey leachate to the storage facility or off-site transport
36 location. The engineering evaluation shall incorporate the following criteria:

37 (1) At a minimum, the geometry of the CCR unit and the leachate collection system shall be

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- 1 designed to control and contain the volume of leachate generated by the 24-hour, 25- year storm.
- 2 (2) The performance analysis shall evaluate the leachate collection system for the flow capacities
- 3 during conditions when the maximum impingement rate occurs on the LCS. The LCS flow
- 4 capacity shall be designed to reduce the head on the liner system generated by the 24-hour, 25-
- 5 year storm falling on an empty cell to less than one foot within 72 hours after the storm event.
- 6 (3) The leachate collection system shall be designed to provide a zone of protection at least 24 inches
- 7 separating the composite liner from activities performed on it, or shall be subject to approval
- 8 from the division upon a demonstration of equivalent protection for the liner system.
- 9 (4) The leachate collection system shall be designed to resist clogging and promote leachate
- 10 collection and removal from the CCR unit.
- 11 (5) The leachate collection system shall be operated to remove leachate from the CCR unit in such a
- 12 way as to ensure that the leachate head on the composite liner does not exceed one foot under
- 13 normal operating conditions.
- 14 (6) Leachate management plan. The owner or operator of a CCR unit designed with a leachate
- 15 collection system shall establish and maintain a leachate management plan which includes the
- 16 following: periodic maintenance of the leachate collection system; maintaining records for the
- 17 amounts of leachate generated; semi-annual leachate quality sampling; approval for final leachate
- 18 disposal; and a contingency plan for extreme operational conditions.
- 19 (7) All leachate collection lines shall be designed and constructed to permanently allow cleaning and
- 20 remote camera inspection. Remote camera inspections of the leachate collection lines shall occur
- 21 upon completion of the construction and at least once every five years. Cleaning of leachate
- 22 collection lines found necessary for proper functioning and to address buildup of leachate over
- 23 the liner shall occur. In accordance with § 130A-295.6.(h)(3).
- 24 (8) Any pipes used to transmit leachate shall provide dual containment outside of the disposal unit.
- 25 In accordance with § 130A-295.6.(h)(4).
- 26 (9) The bottom liner of a sanitary landfill shall be constructed without pipe penetrations. In
- 27 accordance with § 130A-295.6.(h)(4).
- 28 (d) Horizontal separation requirements.
- 29 (1) Property line buffer. New CCR unit(s) at a new facility or lateral expansions of an existing unit shall
- 30 establish a minimum 300-foot buffer between the CCR unit and all property lines for monitoring
- 31 purposes.
- 32 (2) Offsite residential structures and wells. All CCR units at a new facility shall establish a minimum
- 33 500-foot buffer between the CCR unit and existing residential structures and wells.
- 34 (3) Surface waters. All CCR units at new facilities and lateral expansions shall establish a minimum
- 35 100-foot buffer between the CCR unit and any stream, river, lake, pond or other waters of the state
- 36 as defined in NCGS 143-212.

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- 1 (4) Existing landfill units. A monitoring zone shall be established between a new CCR unit and any
2 existing units such as MSW, Industrial, CCR, or Land Clearing and Inert Debris (LCID), in order
3 to establish a groundwater monitoring system as set forth in Rule .2014 of this Section.
- 4 (e) Vertical separation requirements. CCR unit(s) shall be constructed so that the post-settlement bottom
5 elevation of waste is a minimum of five feet above the seasonal high groundwater table and the bedrock
6 datum plane contours established in the Design Hydrogeological Report prepared in accordance with
7 Paragraph (b) of Rule .2008 of this Section.
- 8 (f) Survey control. One permanent benchmark of known elevation measured from a U.S. Geological Survey
9 benchmark shall be established and maintained for each 50 acres of developed landfill, or part thereof, at the
10 landfill facility. This benchmark shall be the reference point for establishing vertical elevation control. Any
11 survey performed pursuant to this Sub-Item shall be performed by a Registered Land Surveyor. Latitude and
12 Longitude, expressed in decimal degrees, shall be indicated at the approximate center of the facility. Location
13 coordinates. The North Carolina State Plane (NCSP) coordinates shall be established and one of its points
14 shall be the benchmark of known NCSP coordinates.
- 15 (g) CCR unit subgrade. The landfill subgrade is the in-situ or modified soil layer(s), constructed embankments,
16 and select fill providing the foundation for construction of the unit. The landfill subgrade shall be graded in
17 accordance to the plans and specifications prepared in accordance to Rule .2009 of this Section, which are
18 incorporated into the permit to construct in accordance with Paragraph (b) of Rule .2004 of this Section as
19 follows:
- 20 (1) The owner or operator of the CCR unit shall have the subgrade inspected by a qualified geologist or
21 engineer when excavation is completed.
- 22 (2) The owner or operator of the CCR unit shall notify the Division's hydrogeologist at least 24 hours
23 before subgrade inspection.
- 24 (3) Compliance with the requirements of Sub-Item (2)(b) of this Rule shall be in accordance with
25 Paragraph (b) of Rule .2008 of this Section or by placement of soil in accordance with this Sub-Item
26 and verified in accordance with Rule .2011 of this Section.
- 27 (h) Compacted clay liners. Compacted clay liners are low permeability barriers designed to control fluid
28 migration in a cap liner system or base liner system. The soil materials used in constructing a compacted
29 clay liner may consist of on-site or off-site sources, or a combination of sources; sources may possess
30 adequate native properties or may require bentonite conditioning to meet the permeability requirement.
31 The soil material shall be free of particles greater than three inches in any dimension.
- 32 (A) Construction methods for the compacted clay liner shall be based upon the type and quality of the
33 borrow source and shall be verified in the field by constructing test pad(s). The project engineer
34 shall ensure that the compacted clay liner installation conforms with the Division approved plans
35 including the following minimum requirements:
- 36 (i) A test pad shall be constructed prior to beginning installation of the compacted clay liner
37 and whenever there is a significant change in soil material properties. The area and

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1 equipment, liner thickness, and subgrade slope and conditions shall be representative of
2 full scale construction. Acceptance and rejection criteria shall be verified for the tests
3 specified in accordance with Part (C) of this Subparagraph. For each lift, a minimum of
4 three test locations shall be established for testing moisture content, density, and a
5 composite sample for recompacted lab permeability. At least one Shelby tube sample for
6 lab permeability testing, or another in-situ test that is approved by the Division as
7 equivalent for permeability determination shall be obtained per lift.

8 (ii) Soil conditioning, placement, and compaction shall be maintained within the range
9 identified in the moisture-density-permeability relation developed in accordance with
10 Subparagraph (A) of this Paragraph.

11 (iii) The final compacted thickness of each lift shall be a maximum of six inches.

12 (iv) Prior to placement of successive lifts, the surface of the lift in place shall be scarified or
13 otherwise conditioned to eliminate lift interfaces.

14 (v) The final lift shall be protected from environmental degradation.

15 (B) Certification requirements. The project engineer shall include in the construction quality
16 assurance report a discussion of all quality assurance and quality control testing required in this
17 Subparagraph. The testing procedures and protocols shall be submitted in accordance with Rule
18 .2011 of this Section and approved by the Division. The results of all testing shall be included in
19 the construction quality assurance report including documentation of any failed test results,
20 descriptions of the procedures used to correct the improperly installed material, and statements of
21 all retesting performed in accordance with the Division approved plans including the following
22 requirements:

23 (i) At a minimum, the quality control testing for accepting materials prior to and during
24 construction of a compacted clay liner shall include: particle size distribution analysis,
25 Atterberg limits, triaxial cell laboratory permeability, moisture content, percent bentonite
26 admixed with soil, and the moisture-density-permeability relation. The project engineer
27 shall certify that the materials used in construction were tested according to the Division
28 approved plans.

29 (ii) At a minimum, the quality assurance testing for evaluating each lift of the compacted clay
30 liner shall include: moisture content and density, and permeability testing. For each
31 location the moisture content and density shall be compared to the appropriate moisture-
32 density-permeability relation. The project engineer shall certify that the liner was
33 constructed using the methods and acceptance criteria consistent with test pad
34 construction and tested in accordance with the plans incorporated into the permit to
35 construct in accordance with Rule .2004(b) of this Section.

36 (iii) Any tests resulting in the penetration of the compacted clay liner shall be repaired using
37 bentonite or as approved by the Division.

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- 1 (i) Geosynthetic Clay liners. Geosynthetic clay liners are geosynthetic hydraulic barriers manufactured in sheets
2 and installed by field seaming techniques.
- 3 (1) Geosynthetic clay liners shall consist of natural sodium bentonite clay or equivalent, encapsulated
4 between two geotextiles or adhered to a geomembrane. The liner material and any seaming
5 materials shall have chemical and physical resistance not adversely affected by environmental
6 exposure, waste placement, leachate generation and subgrade moisture composition. Accessory
7 bentonite, used for seaming, repairs and penetration seaming shall be made from the same sodium
8 bentonite as used in the geosynthetic clay liner or as recommended by the manufacturer. The type
9 of geosynthetic clay liner shall be approved by the Division according to the criteria set forth in
10 this Part.
- 11 (A) Reinforced geosynthetic clay liners shall be used on all slopes greater than 10H:IV.
- 12 (B) The geosynthetic clay liner material shall have a demonstrated hydraulic
13 conductivity of not more than 5×10^{-9} cm/sec under the anticipated confining
14 pressure.
- 15 (2) The design engineer shall ensure that the design of the geosynthetic clay liner installation conforms to
16 the requirements of the manufacturer's recommendations and the Division approved plans. The
17 Division approved plans shall provide for and include the following provisions:
- 18 (A) The surface of the supporting soil upon which the geosynthetic clay liner will be
19 installed shall be reasonably free of stones, organic matter, protrusions, loose soil,
20 and any abrupt changes in grade that could damage the geosynthetic clay liner;
- 21 (B) Materials placed on top of the GCL shall be placed in accordance with the plans
22 incorporated into the permit to construct in accordance with Rule .2004(b) of this
23 Section. Equipment used to install additional geosynthetics shall be specified by
24 the design engineer and as recommended by the manufacturer. A minimum of 12
25 inches of separation between the application equipment and the geosynthetic clay
26 liner shall be provided when applying soil materials;
- 27 (C) Materials that become prematurely hydrated shall be removed, repaired, or
28 replaced, as specified by the project engineer and in accordance with the plans
29 incorporated into the permit to construct prepared in accordance with Rule
30 .2004(b) of this Section;
- 31 (D) Field seaming preparation and methods, general orientation criteria, and restrictive
32 weather conditions;
- 33 (E) Anchor trench design;
- 34 (F) Critical tensile forces and slope stability, including seismic design;
- 35 (G) Protection from environmental damage; and

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1 (H) Physical protection from the materials installed directly above the geosynthetic
2 clay liner.

3 (3) Certification requirements.

4 (A) Before beginning installation of the geosynthetic clay liner, the project engineer
5 shall visually inspect the exposed surface to evaluate the suitability of the subgrade
6 and document that the surface is properly prepared and that the elevations are
7 consistent with the approved engineering plans incorporated into the permit to
8 construct in accordance with Rule .2004(b) of this Section.

9 (B) The project engineer shall ensure that the geosynthetic clay installation conforms
10 to the requirements of the manufacturer's recommendations and the plans
11 incorporated into the permit to construct in accordance with Rule .2004(b) of this
12 Section.

13 (C) The project engineer shall include in the construction quality assurance report a
14 discussion of quality assurance and quality control testing to document that
15 material is placed in accordance with plans incorporated into the permit to
16 construct in accordance with Rule .2004(b) of this Section.

17 (D) The project engineer shall include in the construction quality assurance report a
18 discussion of the approved data resulting from the quality assurance and quality
19 control testing required in this Subparagraph.

20 (E) The testing procedures and protocols for field installation shall be submitted in
21 accordance with Rule .2011 of this Section and approved by the Division. The
22 results of all testing shall be included in the construction quality assurance report,
23 including documentation of any failed test results, descriptions of the procedures
24 used to correct the improperly installed material, and performance documentation
25 of all retesting, in accordance with the plans incorporated into the permit to
26 construct in accordance with Rule .2004(b) of this Section, including the
27 following: Quality control testing of the raw materials and manufactured
28 product; Field and independent laboratory destructive testing of geosynthetic clay
29 liner samples; Documentation prepared by the project engineer in accordance with
30 Subpart (b)(9)(C)(i) of this Rule.

31 (j) Geomembrane liners. Geomembrane liners are geosynthetic hydraulic barriers manufactured in sheets and
32 installed by field seaming techniques. Materials required. The liner material and any seaming materials shall have
33 chemical and physical resistance not adversely affected by environmental exposure, waste placement and leachate
34 generation. The type of geomembrane shall be approved by the Division according to the criteria set forth in this
35 Part. High density polyethylene geomembrane liners shall have a minimum thickness of 60 mils. The minimum

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1 thickness of any geomembrane approved by the Division shall be greater than 30 mils.

2 (1) The project engineer shall ensure that the geomembrane installation conforms to the
3 requirements of the manufacturer's recommendations and the Division approved plans
4 including the following:

5 (A) The surface of the supporting soil upon which the geomembrane will be installed shall
6 be reasonably free of stones, organic matter, protrusions, loose soil, and any abrupt
7 changes in grade that could damage the geomembrane;

8 (A) Field seaming preparation and methods, general orientation criteria, and restrictive
9 weather conditions;

10 (B) Anchor trench design;

11 (C) Critical tensile forces and slope stability;

12 (D) Protection from environmental damage; and

13 (E) Physical protection from the materials installed directly above the geomembrane.

14 (2) The project engineer shall include in the construction quality assurance report a discussion of the
15 approved data resulting from the quality assurance and quality control testing required in this
16 Subparagraph. The testing procedures and protocols for field installation shall be submitted in
17 accordance with Rule .2011 of this Section and approved by the Division. The results of all testing
18 shall be included in the construction quality assurance report including documentation of any failed
19 test results, descriptions of the procedures used to correct the improperly installed material, and
20 statements of all retesting performed in accordance with the plans incorporated into the permit to
21 construct in accordance with Rule .2004(b) of this Section, including the following:

22 (A) Quality control testing of the raw materials and manufactured product;

23 (B) At a minimum, test seams shall be made upon each start of work for each seaming
24 crew, upon every four hours of continuous seaming, every time seaming equipment
25 is changed or if significant changes in geomembrane temperature and weather
26 conditions are observed;

27 (C) Nondestructive testing of all seams; and

28 (D) Field and independent laboratory destructive testing of seam samples.

29 (k) Leachate collection pipes. A leachate collection pipe network shall be a component of the leachate collection
30 system and shall be hydraulically designed to convey leachate from the CCR unit to an appropriately sized leachate
31 storage or treatment facility or a point of off-site transport. Leachate collection piping shall comply with the
32 following:

33 (1) Materials required. The leachate collection piping shall have a minimum nominal diameter of six
34 inches. All leachate collection lines shall be designed and constructed to permanently allow cleaning
35 and remote camera inspection.

36 (2) The chemical properties of the pipe and any materials used in installation shall not be adversely
37 affected by waste placement or leachate generated by the landfill.

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- 1 (3) The physical properties of the pipe shall provide adequate structural strength to support the
2 maximum static and dynamic loads and stresses imposed by the overlying materials and any
3 equipment used in construction and operation of the landfill. Specifications for the pipe shall be
4 submitted in the engineering report.
- 5 (4) Leachate collection piping shall be installed according to the plans incorporated into the permit to
6 construct in accordance with Rule .2004(b) of this Section.
- 7 (5) The location and grade of the piping network shall provide access for periodic cleaning.
- 8 (A) The bedding material for the leachate collection pipe shall consist of a coarse aggregate
9 installed in direct contact with the pipe. The aggregate shall be chemically compatible
10 with the leachate generated and shall be placed to provide adequate support to the pipe.
11 The bedding material for main collector lines shall be extended to and in direct contact
12 with the waste layer or a graded soil or granular filter.
- 13 (B) The project engineer shall include in the construction quality assurance report a
14 discussion of the quality assurance and quality control testing to ensure that the material
15 is placed according to the approved plans. The testing procedures and protocols for field
16 installation shall be submitted in accordance with Rule .2011 of this Section and
17 approved by the Division. The results of all testing shall be included in the construction
18 quality assurance report including documentation of any failed test results, descriptions
19 of the procedures used to correct the improperly installed material, and statements of all
20 retesting performed in accordance with plans incorporated into the permit to construct
21 in accordance with Rule .2004(b) of this Section, including all leachate piping installed
22 to transmit leachate shall provide dual containment outside of the disposal unit and
23 bottom liner of a CCR landfill shall be constructed without pipe penetrations.
- 24 (k) Drainage layers. Any soil, granular, or geosynthetic drainage nets used in the leachate collection system
25 shall conform to the following requirements: The chemical properties of the drainage layer materials shall
26 not be adversely affected by waste placement or leachate generated by the CCR unit. The physical and
27 hydraulic properties of the drainage layer materials shall promote lateral drainage of leachate through a
28 zone of relatively high permeability or transmissivity under the predicted loads imposed by overlying
29 materials.
- 30 (1) The drainage layer materials shall be placed in accordance with the approved
31 plans prepared in accordance with Rule .2004(b) of this Section and in a
32 manner that prevents equipment from working directly on the
33 geomembrane.
- 34 (2) The drainage layer materials shall be stable on the slopes specified on the
35 engineering drawings.
- 36 (3) The project engineer shall include in the construction quality assurance report a
37 discussion of the quality assurance and quality control testing to ensure that the

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1 drainage layer material is placed according to the approved plans. The testing
2 procedures and protocols for field installation shall be submitted in accordance
3 with of Rule .2011 of this Section and approved by the Division. The results of
4 all testing shall be included in the construction quality assurance report including
5 documentation of any failed test results, descriptions of the procedures used to
6 correct the improperly installed material, and statements of all retesting
7 performed in accordance with the approved plans prepared in accordance with
8 Rule .2004(b) of this Section.

9 (l) Filter layer criteria. All filter collection layers used in the leachate collection system shall be
10 designed to prevent the migration of fine soil particles into a courser grained material, and permit
11 water or gases to freely enter a drainage medium (pipe or drainage layer) without clogging.

12 (1) Graded cohesionless soil filters. The granular soil material used as a filter shall
13 have no more than five percent by weight passing the No. 200 sieve and no soil
14 particles larger than three inches in any dimension.

15 (2) Geosynthetic filters. Geosynthetic filter materials shall demonstrate adequate
16 permeability and soil particle retention, and chemical and physical resistance
17 which is not adversely affected by waste placement, any overlying material or
18 leachate generated by the landfill.

19 (3) All filter layers shall be installed in accordance with the engineering plan and
20 specifications incorporated into the permit to construct prepared in accordance
21 with Rule .2004(b) of this Section. Geosynthetic filter materials shall not be
22 wrapped directly around leachate collection piping.

23 (4) The project engineer shall include in the construction quality assurance report a
24 discussion of the quality assurance and quality control testing to ensure that the
25 filter layer material is placed according to the approved plans. The testing
26 procedures and protocols for field installation shall be submitted in accordance
27 with Rule .2011 of this Section and approved by the Division. The results of all
28 testing shall be included in the construction quality assurance report including
29 documentation of any failed test results, descriptions of the procedures used to
30 correct the improperly installed material, and statements of all retesting
31 performed in accordance with the approved plans prepared in accordance with
32 Rule .2004(b) of this Section.

33 (n) Special engineering structures. Engineering structures, including cap systems or chimney drains,
34 incorporated in the design and necessary to comply with the requirements of this Section shall be
35 specified in the engineering plan. Material, construction, and certification requirements necessary
36 to ensure that the structure is constructed in accordance with the design and acceptable engineering
37 practices shall be included in the plans prepared in accordance with Rule .2009 of this Section.

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

5 (p) Construction quality assurance (CQA) report. A CQA report shall be submitted in accordance with
6 Rule .2011 of this Section.

7

8 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2011 is proposed for adoption as follows:

2 **15A NCAC 13B .2011 CONSTRUCTION QUALITY ASSURANCE FOR CCR FACILITIES**

3 (a) Purpose of the construction quality control and quality assurance (CQA) plan. The CQA plan shall describe the
4 observations and tests that will be used before, during, and upon completion of construction to ensure that the
5 construction and materials meet the design specifications and the construction and certification requirements set forth
6 in Rule .2010 of this Section. The CQA plan shall also describe the procedures to ensure that the integrity of the
7 landfill systems will be maintained prior to waste placement.

8 (b) For construction of each cell, the CQA plan shall include at a minimum:

9 (1) Responsibilities and authorities. The plan shall establish responsibilities and authorities for the
10 construction management organization. A pre-construction meeting shall be conducted prior to
11 beginning construction of the initial cell, or as required by the permit. The meeting shall include a
12 discussion of the construction management organization, respective duties during construction, and
13 periodic reporting requirements for test results and construction activities;

14 (2) Inspection activities. A description of all field observations, tests and equipment that will be used
15 to ensure that the construction meets or exceeds all design criteria established in accordance with
16 Rules .2009, .2010 and Rule .2013 Paragraph (d) of this Section;

17 (3) Sampling strategies. A description of all sampling protocols, sample size and frequency of sampling
18 shall be presented in the CQA plan;

19 (4) Documentation. A description of reporting requirements for CQA activities; and

20 (5) Progress and troubleshooting meetings. A plan for holding daily and monthly troubleshooting
21 meetings. The proceedings of the meetings shall be documented.

22 (c) Purpose of the CQA report. The CQA report shall contain the results of all the construction quality assurance and
23 construction quality control testing including documentation of any failed test results, descriptions of procedures used
24 to correct the improperly installed material, and results of all retesting performed. The CQA report shall contain as-
25 built drawings noting any deviation from the approved engineering plans and shall also contain a comprehensive
26 narrative including, but not limited to, daily reports from the project engineer, a series of color photographs of major
27 project features, and documentation of proceedings of all progress and troubleshooting meetings.

28 (d) For construction of each cell, the CQA report shall be submitted:

29 (1) after completion of construction in order to qualify the constructed CCR unit for a permit to operate;

30 (2) after completion of construction of the cap system in accordance with the requirements of Rule
31 .2013 of this Section; and

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

33 (4) The CQA report shall bear the seal of the project engineer and a certification that construction was
34 completed in accordance with:

35 (A) the CQA plan,

36 (B) the conditions of the permit to construct,

37 (C) the requirements of this Rule, and

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1 (D) acceptable engineering practices.

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

4

5 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2012 is proposed for adoption as follows:

2 **15A NCAC 13B .2012 OPERATION PLAN AND REQUIREMENTS FOR CCR FACILITIES**

3 (a) The owner or operator of a CCR unit shall maintain and operate the facility in accordance with the operation plan
4 prepared in accordance with this Rule. The operation plan shall be submitted in accordance with Rule .2005 of this
5 Section. Each phase of operation shall be defined by an area which contains approximately five years of disposal
6 capacity.

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

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

12 (A) existing conditions including the known limits of existing disposal areas;

13 (B) progression of construction cells for incremental or modular construction;

14 (C) progression of operation including initial waste placement, daily operations, yearly contour
15 transitions, and final contours;

16 (D) Leachate and stormwater controls for active and inactive subcells, if required;

17 (E) special waste handling areas, such as asbestos disposal area, within the CCR unit;

18 (F) buffer zones, noting restricted use;

19 (G) stockpile and borrow operations; and

20 (H) other solid waste activities, such as tire disposal or storage, yard waste storage, white goods
21 storage, recycling pads, etc.

22 (2) Operation Plan Description. The owner and operator of any CCR unit shall maintain and operate the
23 unit in accordance with the operation plan as described in Paragraphs (c) through (j) of this Rule.

24 (3) The operation plan shall include:

25 (A) The facility's programs set forth in .2012(c), .2012(d), .2012(e), .2012(f), .2012(g), .2012(h),
26 .2012(i), and .2018(e);

27 (B) A Sedimentation and Erosion Control plan which incorporates adequate measures to control
28 surface water run-off and run-on generated from the 24-hour, 25-year storm event;

29 (C) Operation drawings that illustrate annual phases of development which are consistent with the minimum
30 and maximum slope requirements set forth in Rule .2012 (b).

31 (c) Waste Acceptance and Disposal Requirements.

32 (1) A CCR unit shall accept only those solid wastes it is permitted to receive. The unit shall not accept
33 any CCR that has not been properly dewatered. The landfill owner or operator shall notify the
34 Division within 24 hours of attempted disposal of any waste the CCR landfill is not permitted to
35 receive, including waste from outside the area the landfill is permitted to serve.

36 (2) Asbestos waste shall be managed in accordance with 40 CFR 61, which is hereby incorporated by
37 reference including any subsequent amendments and additions. The regulated asbestos waste shall

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1 be covered immediately with soil in a manner that will not cause airborne conditions and shall be
2 disposed of separate and apart from other solid wastes, as shown on Operation drawings:

3 (A) in a defined isolated area within the footprint of the landfill, or

4 (B) in an area not contiguous with other disposal areas. Separate areas shall be designated so
5 that asbestos is not exposed by future land-disturbing activities.

6 (d) Cover material requirements.

7 (1) Except as provided in Subparagraph (3) of this Paragraph, the owners and operators of all CCR units
8 shall cover the solid waste with six inches of earthen material at a frequency needed to prevent
9 dusting or migration of CCR. Cover shall be placed at more frequent intervals if necessary to control
10 disease vectors, fires, odors, blowing litter, and scavenging. A notation of the date and time of the
11 cover placement shall be recorded in the operating record as specified in Paragraph (n) of this Rule.

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

16 (3) Alternative materials or an alternative thickness of cover may be approved by the Division if the
17 owner or operator demonstrates that the alternative material or thickness controls disease vectors,
18 fires, odors, blowing litter, scavenging, and dusting or migration of CCR without presenting a threat
19 to human health and the environment. A CCR owner or operator may apply for approval of an
20 alternative cover material. If approval is given by the Division, approval would extend to all CCR
21 units at one specific facility.

22 (e) Spreading and Compacting requirements.

23 (1) CCR units shall restrict solid waste into the smallest area feasible.

24 (2) CCR shall be compacted as densely as practical into cells or as specified by the design engineer.

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

29 (f) Disease vector control. Owners and operators of all CCR units shall prevent or control on-site populations of
30 disease vectors using techniques appropriate for the protection of human health and the environment. For purposes of
31 this item, "disease vectors" means any rodents, flies, mosquitoes, or other animals or insects, capable of transmitting
32 disease to humans.

33 (g) Air Criteria.

34 (1) The owner or operator of a CCR unit shall adopt measures that will effectively minimize CCR from
35 becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads,
36 and other CCR management and material handling activities.

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- 1 (2) CCR fugitive dust control plan. The owner or operator of the CCR unit shall prepare and operate in
2 accordance with a CCR fugitive dust control plan as specified in paragraphs (b)(1) through (7) of
3 this section. This requirement applies in addition to, not in place of, any applicable standards under
4 the Occupational Safety and Health Act.
- 5 (a) The CCR fugitive dust control plan shall identify and describe the CCR fugitive dust control
6 measures the owner or operator will use to minimize CCR from becoming airborne at the
7 facility. The owner or operator shall select, and include in the CCR fugitive dust control
8 plan, the CCR fugitive dust control measures that are most appropriate for site conditions,
9 along with an explanation of how the measures selected are applicable and appropriate for
10 site conditions. Examples of control measures that may be appropriate include: Locating
11 CCR inside an enclosure or partial enclosure; operating a water spray or fogging system;
12 reducing fall distances at material drop points; using wind barriers, compaction, or
13 vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and
14 sweeping roads; covering trucks transporting CCR; reducing or halting operations during
15 high wind events; or applying a daily cover.
- 16 (b) If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill,
17 the CCR fugitive dust control plan shall include procedures to emplace CCR as conditioned
18 CCR. Conditioned CCR means wetting CCR with water to a moisture content that will
19 prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning
20 may be accomplished with an appropriate chemical dust suppression agent.
- 21 (c) The CCR fugitive dust control plan shall include procedures to log citizen complaints
22 received by the owner or operator involving CCR fugitive dust events at the facility.
- 23 (d) The CCR fugitive dust control plan shall include a description of the procedures the owner
24 or operator will follow to periodically assess the effectiveness of the control plan.
- 25 (3) Annual CCR fugitive dust control report. The owner or operator of a CCR unit shall prepare an
26 annual CCR fugitive dust control report that includes a description of the actions taken by the owner
27 or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any
28 corrective measures taken. The fugitive dust control plan will be for the state fiscal year, which is
29 July 1 through June 30, and shall be placed in the facility's operating record by August 1 of each
30 year.
- 31 (4) The owner or operator of the CCR unit shall comply with the recordkeeping, notification and the
32 Internet requirements specified in Rule .2017(f) of this Section.
- 33 (5) The CCR landfill shall be adequately secured by means of gates, chains, berms, fences and other
34 security measures approved by the Division to prevent unauthorized entry.
- 35 (6) In accordance with NCGS 130A-309.25, an individual trained in landfill operations shall be on duty
36 at the site while the facility is open for public use and at all times during active waste management
37 operations to ensure compliance with operational requirements.

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- 1 (7) The access road to the site and access roads to monitoring locations shall be of all-weather
2 construction and maintained in good condition.
- 3 (8) Signs providing information on disposal procedures the permit number and other pertinent
4 information specified in the permit conditions shall be posted at the site entrance.
- 5 (9) Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and
6 from the discharge area and to maintain efficient operating conditions.
- 7 (h) Erosion and sedimentation control requirements. All sedimentation and erosion control activities must be
8 conducted in accordance with the Sedimentation Control Act NCGS 113A-50, et seq., and rules promulgated under
9 15A NCAC 4. All required sedimentation and erosion control measures must be installed and operable to mitigate
10 excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the
11 facility.
- 12 (i) Drainage control and water protection requirements.
- 13 (1) Surface water shall be diverted from the operational area.
- 14 (2) Surface water shall not be impounded over or in waste.
- 15 (3) Solid waste shall not be disposed of in water.
- 16 (4) Leachate management plan. The owner or operator of a CCR unit designed with a leachate collection
17 system must establish and maintain a leachate management plan in accordance with 15A NCAC 13B
18 .2010(c).
- 19 (5) CCR units shall not:
- 20 (A) Cause a discharge of pollutants into waters of the United States, including wetlands, that
21 violates any requirements of the Clean Water Act, including the National Pollutant
22 Discharge Elimination System (NPDES) requirements, pursuant to Section 402.
- 23 (B) Cause the discharge of a nonpoint source of pollution to waters of the United States,
24 including wetlands, that violates any requirement of an area-wide or State-wide water
25 quality management plan that has been approved under Section 208 or 319 of the Clean
26 Water Act, as amended.
- 27 (j) Stormwater Discharges. All owners or operators of stormwater point source discharges associated with activities
28 categorized as landfills which are permitted by the North Carolina Division of Waste Management under the
29 provisions and requirements of North Carolina General Statute 130A-294, must conduct all stormwater discharges
30 in compliance with the provisions of North Carolina General Statute 143-215.1, other lawful standards and
31 regulations promulgated and adopted by the North Carolina Environmental Management Commission and the
32 Federal Water Pollution Control Act.
- 33 (k) Survey for Compliance. Within 60 days of the permittee's receipt of the Division's written request, the permittee
34 shall cause to be conducted a survey of active or closed portions of unit or units at the facility in order to determine
35 whether operations are being conducted in accordance with the approved design and operational plans. The permittee
36 shall report the results of such survey, including a map produced by the survey, to the Division within 90 days of
37 receipt of the Division's request.

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- 1 (1) A survey shall be required by the Division:
 - 2 (A) If there is reason to believe that operations are being conducted in a manner that deviates
 - 3 from the plan listed in the effective permit, or
 - 4 (B) As a verification that operations are being conducted in accordance with the plan listed in
 - 5 the effective permit.
- 6 (2) Any survey performed pursuant to this Paragraph shall be performed by a registered land surveyor
- 7 duly authorized under North Carolina law to conduct such activities.
- 8 (l) All CCR units shall be examined by a qualified person as follows at intervals not exceeding seven days, inspect
- 9 for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the
- 10 potential to disrupt the operation or safety of the CCR unit; and
- 11 (m) Existing and new CCR units shall be inspected on an annual basis by a qualified professional engineer to ensure
- 12 that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally
- 13 accepted good engineering standards. The owner or operator of the CCR unit shall complete the initial inspection for
- 14 existing CCR units no later than 90 days after the effective date of this rule and for a new unit no later than 12 months
- 15 following the date of initial receipt of CCR in the CCR unit. The inspection shall, at a minimum, include:
 - 16 (1) A review of available information regarding the status and condition of the CCR unit, including, but not
 - 17 limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and
 - 18 results of previous annual inspections); and
 - 19 (2) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.
 - 20 (3) The qualified professional engineer shall prepare a report following each inspection that addresses
 - 21 changes in geometry of the structure since the previous annual inspection; the approximate volume of CCR
 - 22 contained in the unit at the time of the inspection; any appearances of an actual or potential structural
 - 23 weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to
 - 24 disrupt the operation and safety of the CCR unit; and other change(s) which may have affected the stability
 - 25 or operation of the CCR unit since the previous annual inspection.
- 26 (n) If a deficiency or release is identified during an inspection, the owner or operator shall remedy the deficiency or
- 27 release as soon as feasible and prepare documentation detailing the corrective measures taken.
- 28 (o) The owner or operator of the CCR unit shall comply with the recordkeeping, notification and the Internet
- 29 requirements specified in Rule .2017(f) of this Section.

30
31 *Authority NCGS 130-294; NCGS 130A-309.207*

DRAFT CCR RULE

1 15A NCAC 13B .2013 is proposed for adoption as follows:

2 **15A NCAC 13B .2013 CLOSURE AND POST-CLOSURE REQUIREMENTS FOR CCR FACILITIES**

3 (a) Purpose. This Rule establishes criteria for the closure of all CCR units and subsequent requirements for post-
4 closure compliance. The owner and operator shall develop specific plans for the closure and post-closure of the CCR
5 facility or units that comply with these rules, and submit them to the Division for review and approval.

6 (b) Scope.

7 (1) Closure. Standards shall be established for the scheduling and documenting of closure of all CCR
8 units and design of the cap system. Construction requirements for the cap system shall incorporate
9 requirements from Rules .2010 and .2011 of this Section.

10 (2) Post-closure. Standards are shall be established for the monitoring and maintenance of the CCR
11 unit(s) following closure.

12 (c) Criteria for conducting the closure of CCR units.

13 (1) Written closure plan—

14 (A) Content of the plan. The owner of a CCR unit shall prepare a written closure plan that
15 describes the steps necessary to close the CCR unit at any point during the active life of
16 the CCR unit consistent with recognized and generally accepted good engineering

17 (B) area of the CCR unit ever requiring a final cover as required practices. The written
18 closure plan shall include, at a minimum, the information specified in paragraphs
19 .2013(c)(1)(A)(i) through (vi) of this section.

20 (i) A narrative description of how the CCR unit will be closed in accordance with
21 this section.

22 (ii) If closure of the CCR unit will be accomplished through removal of CCR from
23 the CCR unit, a description of the procedures to remove the CCR and
24 decontaminate the CCR unit in accordance with paragraph (3) of this section.

25 (iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a
26 description of the final cover system, designed in accordance with paragraph (4)
27 of this section, and the methods and procedures to be used to install the final
28 cover. The closure plan shall also discuss how the final cover system will
29 achieve the performance standards specified in paragraph (4) of this section.

30 (iv) An estimate of the maximum inventory of CCR ever on-site over the active life
31 of the CCR unit.

32 (v) An estimate of the largest by paragraph (4) of this section at any time during the
33 CCR unit's active life.

34 (vi) A schedule for completing all activities necessary to satisfy the closure criteria
35 in this section, including an estimate of the year in which all closure activities
36 for the CCR unit will be completed. The schedule should provide sufficient
37 information to describe the sequential steps that will be taken to close the CCR

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1 unit, including identification of major milestones such as coordinating with and
 2 obtaining necessary approvals and permits from other agencies, the dewatering
 3 and stabilization phases of CCR surface impoundment closure, or installation of
 4 the final cover system, and the estimated timeframes to complete each step or
 5 phase of CCR unit closure. When preparing the written closure plan, if the
 6 owner of a CCR unit estimates that the time required to complete closure will
 7 exceed the timeframes specified in paragraph .2013(c)(5)(A) of this section, the
 8 written closure plan shall include the site-specific information, factors and
 9 considerations that would support any time extension sought under paragraph
 10 .2013(c)(5)(B) of this section.

11 (C) Timeframes for preparing the initial written closure plan—

- 12 (i) New CCR landfills and new CCR surface impoundments, and any lateral
 13 expansion of a CCR unit. No later than the date of the initial receipt of CCR in
 14 the CCR unit, the owner shall prepare an initial written closure plan consistent
 15 with the requirements specified in paragraph .2013(c)(1)(A) of this section.
- 16 (ii) The owner has completed the written closure plan when the plan, including the
 17 certification required by paragraph .2013(c)(1)(D) of this Section, has been
 18 placed in the facility's operating record as required by Rule .2017(h)(4) of this
 19 Section.
- 20 (iii) Amendment of a written closure plan. The owner may amend the initial or any
 21 subsequent written closure plan developed pursuant to paragraph .2013(c)(1)(A)
 22 of this section at any time.
- 23 (iv) The owner shall amend the written closure plan whenever:
- 24 a. There is a change in the operation of the CCR unit that would
 25 substantially affect the written closure plan in effect; or
- 26 b. Before or after closure activities have commenced, unanticipated events
 27 necessitate a revision of the written closure plan.
- 28 (v) The owner shall amend the closure plan at least 60 days prior to a planned
 29 change in the operation of the facility or CCR unit, or no later than 60 days after
 30 an unanticipated event requires the need to revise an existing written closure
 31 plan. If a written closure plan is revised after closure activities have commenced
 32 for a CCR unit, the owner shall amend the current closure plan no later than 30
 33 days following the triggering event.

34 (D) The owner of the CCR unit shall obtain a written certification from a qualified
 35 professional engineer that the initial and any amendment of the written closure plan
 36 meets the requirements of this section.

37 (2) Closure by removal of CCR. An owner may elect to close a CCR unit by removing and

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1 decontaminating all areas affected by releases from the CCR unit. CCR removal and
2 decontamination of the CCR unit are complete when constituent concentrations throughout the
3 CCR unit and any areas affected by releases from the CCR unit have been removed and
4 groundwater monitoring concentrations do not exceed the groundwater protection standard
5 established pursuant to .2015(b)(3) assessment monitoring for constituents listed in appendix III
6 and IV and any site-specific groundwater analytes as required by the permit.

7 (3) Closure performance standard when leaving CCR in place

8 (A) The owner of a CCR unit shall ensure that, at a minimum, the CCR unit is closed in a
9 manner that will:

10 (i) Control, minimize or eliminate, to the maximum extent feasible, post-closure
11 infiltration of liquids into the waste and releases of CCR, leachate, or
12 contaminated runoff to the ground or surface waters or to the atmosphere;

13 (ii) Preclude the probability of future impoundment of water, sediment, or slurry;

14 (iii) Include measures that provide for major slope stability to prevent the sloughing
15 or movement of the final cover system during the closure and post-closure care
16 period;

17 (iv) Minimize the need for further maintenance of the CCR unit; and

18 (v) Be completed in the shortest amount of time consistent with recognized and
19 generally accepted good engineering practices.

20 (B) Drainage and stabilization of CCR surface impoundments. The owner of a CCR surface
21 impoundment shall meet the requirements of paragraphs .2013(3)(B)(i) and (ii) of this
22 section prior to installing the final cover system required under paragraph .2013(c)(3)(C)
23 of this section.

24 (i) Free liquids shall be eliminated by removing liquid wastes or solidifying the
25 remaining wastes and waste residues.

26 (ii) Remaining wastes shall be stabilized sufficient to support the final cover system.

27 (C) Final cover system. If a CCR unit is closed by leaving CCR in place, the owner shall
28 install a final cover system that is designed to minimize infiltration and erosion, and at a
29 minimum, meets the requirements of paragraph .2013(3)(C)(i) of this section, or the
30 requirements of the alternative final cover system specified in paragraph .2013(3)(C)(ii)
31 of this section.

32 (i) The final cover system shall be designed and constructed to meet the criteria in
33 paragraphs .2013(3)(C)(i)a. through .2013(3)(C)(i)d. of this section. The design
34 of the final cover system shall be included in the written closure plan required
35 by paragraph (b) of this section.

36 a. The permeability of the final cover system shall be less than or equal to
37 the permeability of any bottom liner system or natural subsoils present,

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- 1 or a permeability no greater than 1×10^{-5} cm/sec, whichever is less.
- 2 b. The infiltration of liquids through the closed CCR unit shall be
- 3 minimized by the use of an infiltration layer that contains a minimum
- 4 of 18 inches of earthen material.
- 5 c. The erosion of the final cover system shall be minimized by the use of
- 6 an erosion layer that contains a minimum of six inches of earthen
- 7 material that is capable of sustaining native plant growth.
- 8 d. The disruption of the integrity of the final cover system shall be
- 9 minimized through a design that accommodates settling and
- 10 subsidence.
- 11 (ii) The owner may select an alternative final cover system design, provided the
- 12 alternative final cover system is designed and constructed to meet the criteria in
- 13 paragraphs .2013(c)(5)(C)(ii)a. through .2013(c)(5)(C)(ii)d. of this section. The
- 14 design of the final cover system shall be included in the written closure plan
- 15 required by paragraph (b) of this section.
- 16 a. The design of the final cover system shall include an infiltration layer
- 17 that achieves an equivalent reduction in infiltration as the infiltration
- 18 layer specified in paragraphs .2013 (c)(3)(C)(i)a. and .2013
- 19 (c)(3)(C)(i)b of this section.
- 20 b. The design of the final cover system shall include an erosion layer that
- 21 provides equivalent protection from wind or water erosion as the
- 22 erosion layer specified in paragraph (d)(3)(i)(C) of this section.
- 23 c. The disruption of the integrity of the final cover system shall be
- 24 minimized through a design that accommodates settling and
- 25 subsidence.
- 26 (iii) The owner of the CCR unit shall obtain a written certification from a qualified
- 27 professional engineer that the design of the final cover system meets the
- 28 requirements of this section.
- 29 (4) Initiation of closure activities. Except as provided for in paragraph .2013(c)(4)(D) of this section,
- 30 the owner of a CCR unit shall commence closure of the CCR unit no later than the applicable
- 31 timeframes specified in either paragraph .2013(c)(4)(A) or .2013(c)(4)(B) of this section.
- 32 (A) The owner shall commence closure of the CCR unit no later than 30 days after the date
- 33 on which the CCR unit either:
- 34 (i) Receives the known final receipt of waste, either CCR or any non-CCR waste
- 35 stream; or
- 36 (ii) Removes the known final volume of CCR from the CCR unit for the purpose of
- 37 beneficial use of CCR.

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- 1 (B) –
- 2 (i) Except as provided by paragraph .2013(c)(4)(B)(ii) of this section, the owner
- 3 shall commence closure of a CCR unit that has not received CCR or any non-
- 4 CCR waste stream or is no longer removing CCR for the purpose of beneficial
- 5 use within two years of the last receipt of waste or within two years of the last
- 6 removal of CCR material for the purpose of beneficial use.
- 7 (ii) Notwithstanding paragraph .2013(c)(4)(i) of this section, the owner of the CCR
- 8 unit may secure an additional two years to initiate closure of the idle unit
- 9 provided the owner provides written documentation that the CCR unit will
- 10 continue to accept wastes or will start removing CCR for the purpose of
- 11 beneficial use. The documentation shall be supported by, at a minimum, the
- 12 information specified in paragraphs .2013(c)(4)(B)(ii)a. and .2013(c)(4)(B)(ii)b.
- 13 of this section. The owner may obtain two- year extensions provided the owner
- 14 continues to be able to demonstrate that there is reasonable likelihood that the
- 15 CCR unit will accept wastes in the foreseeable future or will remove CCR from
- 16 the unit for the purpose of beneficial use. The owner shall place each completed
- 17 demonstration, if more than one- time extension is sought, in the facility's
- 18 operating record in accordance with Rule .2017(h)(1) of this Section prior to the
- 19 end of any two-year period.
- 20 a. Information documenting that the CCR unit has remaining storage or
- 21 disposal capacity or that the CCR unit can have CCR removed for the
- 22 purpose of beneficial use; and
- 23 b. Information demonstrating that that there is a reasonable likelihood that
- 24 the CCR unit will resume receiving CCR or non-CCR waste streams in
- 25 the foreseeable future or that CCR can be removed for the purpose of
- 26 beneficial use. The narrative shall include a best estimate as to when
- 27 the CCR unit will resume receiving CCR or non-CCR waste streams.
- 28 The situations listed in paragraphs .2013(c)(4)(B)(ii)b.1. through
- 29 .2013(c)(4)(B)(ii)b.4. of this section are examples of situations that
- 30 would support a determination that the CCR unit will resume receiving
- 31 CCR or non-CCR waste streams in the foreseeable future.
- 32 1. Normal plant operations include periods during which the
- 33 CCR unit does not receive CCR or non-CCR waste streams,
- 34 such as the alternating use of two or more CCR units whereby
- 35 at any point in time one CCR unit is receiving CCR while
- 36 CCR is being removed from a second CCR unit after its
- 37 dewatering.

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2. The CCR unit is dedicated to a coal-fired boiler unit that is temporarily idled (e.g., CCR is not being generated) and there is a reasonable likelihood that the coal-fired boiler will resume operations in the future.
 3. The CCR unit is dedicated to an operating coal-fired boiler (i.e., CCR is being generated); however, no CCR are being placed in the CCR unit because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR unit will again be used in the foreseeable future.
 4. The CCR unit currently receives only non-CCR waste streams and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR unit will again receive non-CCR waste streams in the future.
- (iii) In order to obtain additional time extension(s) to initiate closure of a CCR unit beyond the two years provided by paragraph .2013(c)(4)(B)(i) of this section, the owner of the CCR unit shall include with the demonstration required by paragraph .2013(c)(4)(B)(ii) of this section the following statement signed by the owner or an authorized representative:
- I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.
- (C) For purposes of this subpart, closure of the CCR unit has commenced if the owner has ceased placing waste and completes any of the following actions or activities:
- (i) Taken any steps necessary to implement the written closure plan required by paragraph (b) of this section;
 - (ii) Submitted a completed application for any required state or agency permit or permit modification; or
 - (iii) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit.

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1 (5) Completion of closure activities.

2 (A) The owner shall complete closure of the CCR unit:

3 (i) For existing and new CCR landfills and any lateral expansion of a CCR
4 landfill, within six months of commencing closure activities.

5 (ii) For existing CCR surface impoundments, within five years of
6 commencing closure activities.

7 (B) Extensions of closure timeframes.

8 In order to obtain additional time extension(s) to complete closure of a CCR unit beyond the
9 times provided by paragraph .2013(c)(5)(A) of this section, the owner of the CCR unit shall
10 include with the demonstration required by paragraph .2013(c)(5)(A)(i) of this section the
11 following statement signed by the owner or an authorized representative:

12 I certify under penalty of law that I have personally examined and am
13 familiar with the information submitted in this demonstration and all
14 attached documents, and that, based on my inquiry of those individuals
15 immediately responsible for obtaining the information, I believe that
16 the submitted information is true, accurate, and complete. I am aware
17 that there are significant penalties for submitting false information,
18 including the possibility of fine and imprisonment.

19 (C) Upon completion, the owner of the CCR unit shall obtain a certification from a
20 qualified professional engineer verifying that closure has been completed in
21 accordance with the closure plan specified in paragraph .2013(c)(1) of this
22 section and the requirements of this section.

23 (6) No later than the date the owner initiates closure of a CCR unit, the owner shall prepare a
24 notification of intent to close a CCR unit. The notification shall include the certification by a
25 qualified professional engineer for the design of the final cover system in accordance with
26 .2013(c)(3)(C)(iii), if applicable. The owner has completed the notification when it has been
27 placed in the facility's operating record in accordance with Rule .2017(h)(1) of this Section.

28 (7) Within 30 days of completion of closure of the CCR unit, the owner shall prepare a notification of
29 closure of a CCR unit. The notification shall include the certification by a qualified professional
30 engineer in accordance with Rule .2013(c)(5)(C) of this Section. The owner has completed the
31 notification when it has been placed in the facility's operating record as required by Rule
32 .2017(h)(3) of this Section.

33 (8) Deed notations.

34 (A) Except as provided by paragraph .2013(c)(8)(D) of this section,
35 following closure of a CCR unit, the owner shall record a notation on the deed to
36 the property, or some other instrument that is normally examined during title
37 search.

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- 1 (B) The notation on the deed shall in perpetuity notify any potential purchaser of the
2 property that:
3 (i) The land has been used as a CCR unit; and
4 (ii) Its use is restricted under the post-closure care requirements as provided by
5 .2013(d)(5)(A)(iii).
- 6 (C) Within 30 days of recording a notation on the deed to the property, the owner
7 shall prepare a notification stating that the notation has been recorded. The
8 owner has completed the notification when it has been placed in the facility's
9 operating record in accordance with Rule .2017(h)(9) of this Section.
- 10 (D) An owner that closes a CCR unit in accordance with paragraph .2013(c)(2) of
11 this section is not subject to the requirements of paragraphs .2013(c)(8)(A)
12 through .2013(c)(8)(C) of this section.
- 13 (9) The owner of the CCR unit shall comply with the closure recordkeeping, notification and the
14 Internet requirements specified in Rule .2017(h) of this Section.
- 15 (10) The annual progress reports of closure implementation where the owner or operator shall prepare
16 periodic progress reports summarizing the progress of closure implementation, including a
17 description of the actions completed to date, any problems encountered and a description of the
18 actions taken to resolve the problems, and projected closure activities for the upcoming year.
- 19 (d) Post-closure care requirements.
- 20 (1) Applicability.
- 21 (A) Except as provided by either paragraph .2013(1)(B) or .2013(1)(C) of this section,
22 .2013(d) applies to the owners or operators of CCR landfills, CCR surface
23 impoundments, and lateral expansions of CCR landfills that are subject to the closure
24 criteria under .2013(c).
- 25 (B) An owner or operator of a CCR unit that elects to close a CCR unit by removing
26 CCR as provided by .2013(c)(2) is not subject to the post-closure care criteria
27 under this section.
- 28 (2) Post-closure care maintenance requirements. Following closure of the CCR unit, the owner or
29 operator shall conduct post-closure care for the CCR unit, which shall consist of at least the
30 following:
- 31 (A) Maintaining the integrity and effectiveness of the final cover system, including
32 making repairs to the final cover as necessary to correct the effects of settlement,
33 subsidence, erosion, or other events, and preventing run-on and run-off from eroding
34 or otherwise damaging the final cover;
- 35 (B) If the CCR unit is subject to the design criteria under .2010 maintaining the integrity
36 and effectiveness of the leachate collection and removal system and operating the
37 leachate collection and removal system in accordance with the requirements of .2010;

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- 1 and
- 2 (C) Maintaining the groundwater monitoring system and monitoring the
- 3 groundwater in accordance with the requirements of .2014.
- 4 (3) Post-closure care period.
- 5 (A) Except as provided by paragraph .2013(d)(3)(B) of this section, the owner or operator
- 6 of the CCR unit shall conduct post-closure care for 30 years.
- 7 (B) If at the end of the post-closure care period the owner or operator of the CCR unit
- 8 is operating under assessment monitoring in accordance with .2015, the owner or
- 9 operator shall continue to conduct post-closure care until the owner or operator
- 10 returns to detection monitoring in accordance with .2014.
- 11 (C) Every five (5) years of the post-closure period the CCR unit the owner or operator
- 12 of a closed CCR unit shall submit to the Division a review of all post closure plan
- 13 requirements for that period, prepared by a qualified professional engineer. The
- 14 Division shall review the information provided for compliance with the approved
- 15 written plan, closure permit conditions, applicable statues and rules.
- 16 (4) Written post-closure plan.
- 17 (A) Content of the plan. The owner or operator of a CCR unit shall prepare a written
- 18 post- closure plan that includes, at a minimum, the information specified in
- 19 paragraphs .2013(d)(4)(A)(i) through .2013(d)(4)(A)(iii) of this section.
- 20 (i) A description of the monitoring and maintenance activities required in
- 21 paragraph .2013(d)(2) of this section for the CCR unit, and the frequency at
- 22 which these activities will be performed;
- 23 (ii) The name, address, telephone number, and email address of the person or
- 24 office to contact about the facility during the post-closure care period; and
- 25 (iii) A description of the planned uses of the property during the post-closure
- 26 period. Post-closure use of the property shall not disturb the integrity of the
- 27 final cover, liner(s), or any other component of the containment system, or the
- 28 function of the monitoring systems unless necessary to comply with the
- 29 requirements in this subpart. The Division may approve disturbance if the
- 30 owner or operator of the CCR unit demonstrates that disturbance of the final
- 31 cover, liner, or other component of the containment system, including any
- 32 removal of CCR, will not increase the potential threat to human health or the
- 33 environment. The demonstration shall be certified by a qualified professional
- 34 engineer, and shall be submitted to the Division for approval. The
- 35 demonstration and Division approval shall be placed in the facility operating
- 36 record and on the owners or operator’s publicly accessible Internet site.
- 37 (B) Deadline to prepare the initial written post-closure plan.

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- 1 (i) New CCR landfills and any lateral expansion of a CCR landfills. No later
2 than the date of the initial receipt of CCR in the CCR unit, the owner or
3 operator shall prepare an initial written post-closure plan consistent with the
4 requirements specified in paragraph .2013(d)(4)(A) of this section.
- 5 (ii) The owner or operator has completed the written post-closure plan when the
6 plan, including the certification required by paragraph .2013(d)(4)(D) of this
7 section, has been placed in the facility's operating record in accordance with
8 Rule .2017(i)(4) of this Section.
- 9 (C)Amendment of a written post-closure plan.
 - 10 (i) The owner or operator may amend the initial or any subsequent written post-
11 closure plan developed pursuant to paragraph .2013(d)(4)(A) of this Rule at
12 any time.
 - 13 (ii) The owner or operator shall amend the written closure plan whenever:
 - 14 a. There is a change in the operation of the CCR unit that would
15 substantially affect the written post-closure plan in effect; or
 - 16 b. After post-closure activities have commenced,
17 unanticipated events necessitate a revision of the written
18 post-closure plan.
 - 19 (iii) The owner or operator shall amend the written post-closure plan at least 60
20 days prior to a planned change in the operation of the facility or CCR unit, or
21 no later than 60 days after an unanticipated event requires the need to revise an
22 existing written post-closure plan. If a written post-closure plan is revised after
23 post-closure activities have commenced for a CCR unit, the owner or operator
24 shall amend the written post-closure plan no later than 30 days following the
25 triggering event.
- 26 (D) The owner or operator of the CCR unit shall obtain a written certification from a
27 qualified professional engineer that the initial and any amendment of the written post-
28 closure plan meets the requirements of this section.
- 29 (5) Notification of completion of post-closure care period. No later than 60 days following the
30 completion of the post-closure care period, the owner or operator of the CCR unit shall prepare
31 a notification verifying that post-closure care has been completed. The notification shall include
32 the certification by a qualified professional engineer verifying that post-closure care has been
33 completed in accordance with the closure plan specified in paragraph (d) of this section and the
34 requirements of this section. The owner or operator has completed the notification when it has
35 been placed in the facility's operating record in accordance with Rule .2017(h)(13) of this
36 Section.
- 37 (6) The owner or operator of the CCR unit shall comply with the recordkeeping, notification and

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1 the Internet requirements specified in Rule .2017(h) of this Section.

2 (e) Post-Closure Uses. The owner or operator of the CCR unit shall

3
4 *Authority NCGS 130-294; NCGS 130A-309.207*

5 15A NCAC 13B .2014 is proposed for adoption as follows:

6 **15A NCAC 13B .2014 MONITORING PLANS AND REQUIREMENTS FOR CCR FACILITIES**

7 (a) Applicability - All CCR landfills and lateral expansions of CCR units are subject to the groundwater monitoring
8 and corrective action requirements under Rules .2014 and .2015 of this Section except that Rules .2014 and .2015 do
9 not apply to CCR surface impoundments.

10 (1) New CCR landfills and all lateral expansions of CCR units. Prior to initial receipt of CCR by the CCR
11 unit, the owner or operator shall be in compliance with the groundwater monitoring requirements specified
12 in this Rule. In addition, the owner or operator of the CCR unit shall initiate the detection monitoring program
13 to include obtaining a minimum of eight independent samples for each well, (background and downgradient)
14 during the first year of operation with at least the first sample taken prior to waste placement and subsequent
15 samples taken every 30 -45 days.

16 (2) Once a groundwater monitoring system and groundwater monitoring program has been established at the
17 CCR unit as required by this Rule, the owner or operator shall conduct groundwater monitoring and, if
18 necessary, corrective action throughout the active life and post-closure care period of the CCR unit.

19 (3) In the event of a release from a CCR unit, the owner or operator shall immediately take all necessary
20 measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible,
21 further releases of contaminants into the environment. The owner or operator of the CCR unit shall comply
22 with all applicable requirements in Rule .2015 of this Section.

23 (4) Annual groundwater monitoring and corrective action report. For existing CCR landfills ~~and existing~~
24 ~~CCR surface impoundments~~ and annually thereafter, the owner or operator shall prepare an annual
25 groundwater monitoring and corrective action report. For new CCR landfills and all lateral expansions of
26 CCR units, the owner or operator shall prepare the initial annual groundwater monitoring and corrective
27 action report no later than January 31 of the year following the calendar year a groundwater monitoring
28 system has been established for such CCR unit as required by this Rule, and annually thereafter. For the
29 preceding calendar year, the annual report shall document the status of the groundwater monitoring and
30 corrective action program for the CCR unit, summarize key actions completed, describe any problems
31 encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For
32 purposes of this section, the owner or operator has prepared the annual report when the report is placed in the
33 facility's operating record in accordance with Rule .2017(g)(1) of this Section. At a minimum, the annual
34 groundwater monitoring and corrective action report shall contain the following information, to the extent
35 available:

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1 (A) A map, aerial image, or diagram showing the CCR unit and all background (or up-gradient) and
2 downgradient monitoring wells, to include the well identification numbers, that are part of the
3 groundwater monitoring program for the CCR unit;

4 (B) Identification of any monitoring wells that were installed or decommissioned during the
5 preceding year, along with a narrative description of why those actions were taken;

6 (C) In addition to all the monitoring data obtained under Rules .2014 and .2015 of this Section, a
7 summary including the number of groundwater samples that were collected for analysis for each
8 background and downgradient well, the dates the samples were collected, and whether the sample
9 was required by the detection monitoring or assessment monitoring programs;

10 (D) A narrative discussion of any transition between monitoring programs (e.g., the date and
11 circumstances for transitioning from detection monitoring to assessment monitoring in addition to
12 identifying the constituent(s) detected above the current groundwater quality standards in
13 accordance with 15A NCAC 02L .0202 or Interim Maximum Allowable Concentration (IMAC),
14 and

15 (E) Other information required to be included in the annual report as specified in Rules .2014 and
16 .2015 of this Section.

17 (b) A Monitoring Plan shall be submitted that contains the following information and shall apply to all CCR units.
18 The Monitoring Plan shall be prepared in accordance with this Rule.

19 (c) Groundwater monitoring plan. A groundwater monitoring plan, including information on the proposed
20 groundwater monitoring system(s), sampling and analysis requirements, and detection monitoring requirements that
21 fulfills the requirements of Part (1)(A) through (1)(E) of this Paragraph, shall be submitted.

22 (1) A groundwater monitoring system that consists of a sufficient number of wells of at least one background
23 and three downgradient wells, installed at appropriate locations and depths, shall be installed to yield
24 groundwater samples from the aquifer that:

25 (A) Represent the quality of the background ground water that has not been affected by leakage
26 from the unit. Normally, determination of background water quality will be based on sampling of a
27 well or wells that are hydraulically upgradient of the waste management area. However, the
28 determination of background water quality may include sampling of wells that are not hydraulically
29 upgradient of the waste management area where hydrogeologic conditions do not allow the owner
30 and operator to determine which wells are hydraulically upgradient, or hydrogeologic conditions do
31 not allow the owner and operator to place a well in a hydraulically upgradient location, or sampling
32 at other wells will provide an indication of background groundwater quality that is as representative
33 as that provided by the upgradient well(s); and

34 (B) Represent the quality of ground water passing the review boundary and the relevant point of
35 compliance as approved by the Division. A review boundary is established around any disposal
36 system midway between the compliance boundary and the waste boundary as to ensure detection
37 of groundwater contamination in the uppermost aquifer. The relevant point of compliance shall be

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1 established no more than 250 feet from a waste boundary, or shall be at least 50 feet within the
2 facility property boundary, whichever point is closer to the waste boundary. In determining the
3 review boundary and the relevant point of compliance, the Division shall consider
4 recommendations made by the owner and operator based upon consideration of at least the
5 hydrogeologic characteristics of the facility and surrounding land; the quantity, quality, and
6 direction of flow of the ground water; the proximity and withdrawal rate of the groundwater users;
7 the existing quality of the ground water, including other sources of contamination and their
8 cumulative impacts on the ground water, and whether the ground water is currently used or
9 reasonably expected to be used for drinking water; public health, safety, and welfare effects; and
10 practicable capability of the owner and operator.

11 (C) The groundwater monitoring plan shall include consistent sampling and analysis procedures that
12 are designed to ensure monitoring results that provide an accurate representation of groundwater
13 quality at the background and downgradient wells. The plan shall include procedures and techniques
14 for sample collection; sample preservation and shipment; chain-of-custody control; and quality
15 assurance and quality control.

16 (D) Detection groundwater monitoring. The monitoring shall include sampling and analytical
17 methods that are appropriate for groundwater sampling and that accurately measure target
18 constituents and other monitoring parameters in groundwater samples. Detection monitoring is
19 required at CCR units for all groundwater monitoring wells that are part of the detection monitoring
20 system as established in the approved monitoring plan. At a minimum, detection monitoring shall
21 include monitoring for the constituents listed in the approved site-specific Water Quality Monitoring
22 Plan including, but not limited to constituents in Appendix I of 40 CFR Part 258 (inorganics only),
23 Appendix III of the 40 CFR Part 257, Iron, Manganese, specific conductance, temperature and
24 Alkalinity. The monitoring frequency for all detection monitoring constituents shall be at least
25 semiannual during the active life of the facility, and during the closure and post-closure periods. A
26 minimum of one sample from each well (background and downgradient) shall be collected and
27 analyzed for the constituents before waste placement in each cell or phase. At least one sample from
28 each well (background and downgradient) shall be collected and analyzed during subsequent
29 semiannual sampling events. The Classifications and Water Quality Standards Applicable to the
30 Groundwaters of North Carolina (15A NCAC 02L) are incorporated by reference, including
31 subsequent amendments and editions. Copies of this material may be inspected or obtained at the
32 Department of Environmental Quality or on the Department website.

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

35 (2) Each time groundwater is sampled elevations shall be measured in each well immediately prior to purging.
36 Groundwater elevations in wells which monitor the same waste management area shall be measured within
37 a 24-hour period to avoid temporal variations in groundwater flow which could preclude accurate

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1 determination of groundwater flow rate and direction. In order to accurately determine groundwater
2 elevations for each monitoring well, the wells shall have been accurately surveyed by a North Carolina
3 Registered Land Surveyor. The survey of the wells shall conform to at least the following levels of accuracy:
4 horizontal location to the nearest 0.1 foot, vertical control for the ground surface elevation to the nearest 0.01
5 foot, and vertical control for the measuring reference point on the top of the inner well casing to the nearest
6 0.01 foot. In order to determine the rate of groundwater flow, the owner or operator shall provide data for
7 hydraulic conductivity and porosity for the formation materials at each of the well locations.

8 (3) The owner or operator shall establish existing conditions of groundwater quality in hydraulically
9 upgradient or background well(s) for each of the monitoring parameters or constituents required in the
10 particular groundwater monitoring program that applies to the CCR unit.

11 (4) Should the owner or operator choose to perform statistical analysis of groundwater quality data whether
12 for establishing background concentrations or determining if there is an exceedance of the groundwater
13 protection standard, the owner or operator shall select one of the following statistical methods to be used in
14 evaluating groundwater monitoring data for each constituent of concern. The statistical test chosen shall be
15 conducted separately for each constituent of concern in each well. The statistical analysis shall be prepared
16 and include a narrative description of the statistical method selected under the responsible charge of and bear
17 the seal of a Licensed Geologist or Professional Engineer in accordance with NCGS 89E or 89C, respectively.

18 (A) A parametric analysis of variance (ANOVA) followed by multiple comparisons
19 procedures to identify statistically significant evidence of contamination. The method shall
20 include estimation and testing of the contrasts between each compliance well's mean and
21 the background mean levels for each constituent.

22 (B) A parametric analysis of variance (ANOVA) based on ranks followed by multiple
23 comparisons procedures to identify statistically significant evidence of contamination. The
24 method shall include estimation and testing of the contrasts between each compliance
25 well's median and the background median levels for each constituent.

26 (C) A tolerance or prediction interval procedure in which an interval for each constituent is
27 established from the distribution of the background data, and the level of each constituent
28 in each compliance well is compared to the upper tolerance or prediction limit.

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

30 (E) Another statistical test method that meets the performance standards of this Rule. The
31 owner or operator shall submit a justification for an alternative test method to the Division
32 for approval. The justification shall demonstrate that the alternative statistical test method
33 meets the performance standards of this Rule. If approved, the owner or operator shall place
34 a copy of the justification for an alternative test method in the operating record.

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

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1 (A) The statistical method used to evaluate groundwater monitoring data shall be
2 appropriate for the distribution of chemical parameters or constituents of concern. If the
3 distribution of the chemical parameters or constituents of concern is shown by the owner
4 or operator (or the Division) to be inappropriate for a normal theory test, then the data shall
5 be transformed or a distribution-free theory test shall be used. If the distributions for the
6 constituents differ, more than one statistical method shall be considered.

7 (B) If an individual well comparison procedure is used to compare an individual
8 compliance well constituent concentration with background constituent concentrations or
9 a groundwater protection standard, the test shall be done at a Type I error level no less than
10 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I
11 experiment wise error rate for each testing period shall be no less than 0.05; however, the
12 Type I error of no less than 0.01 for individual well comparisons shall be maintained. This
13 performance standard does not apply to tolerance intervals, prediction intervals, or control
14 charts.

15 (C) If a control chart approach is used to evaluate groundwater monitoring data, the specific
16 type of control chart and its associated parameter values shall be protective of human health
17 and the environment. The parameters shall be determined after considering the number of
18 samples in the background data base, the data distribution, and the range of the
19 concentration values for each constituent of concern.

20 (D) If a tolerance interval or a prediction interval is used to evaluate groundwater
21 monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the
22 population that the interval shall contain, shall be protective of human health and the
23 environment. These parameters shall be determined after considering the number of
24 samples in the background data base, the data distribution, and the range of the
25 concentration values for each constituent of concern.

26 (E) The statistical method shall account for data below the limit of detection with one or
27 more statistical procedures that are protective of human health and the environment. Any
28 practical quantitation limit (pql) that is used in the statistical method shall be the lowest
29 concentration level that can be reliably achieved within specified limits of precision and
30 accuracy during routine laboratory operating conditions that are available to the facility.

31 (F) If necessary, as provided for in 40 CFR 258, the statistical method shall include
32 procedures to control or correct for seasonal and spatial variability as well as temporal
33 correlation in the data.

34 (6) Within 120 days of completing a groundwater sampling event, the owner or operator shall submit to the
35 Division a report in electronic format that includes information from the sampling event; including, but not
36 limited to: field observations relating to the condition of the monitoring wells; field data; summary of the
37 laboratory data; field sampling quality assurance and quality control data; information on groundwater flow

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1 direction; groundwater flow rate for each well with constituents that exceed groundwater standards over
2 background levels; and any other pertinent information related to the sampling event.

3 (7) The owner or operator may demonstrate that a source other than the CCR unit or a natural variation in
4 groundwater quality has caused contamination, or an error in sampling or analysis of data has resulted in
5 false reporting of contamination. A report documenting this demonstration shall be certified by a Licensed
6 Geologist or Professional Engineer and shall be submitted to the Division for review. The Division shall date
7 and stamp the demonstration "approved" if the conditions of this Paragraph are met. A copy of the approved
8 report shall also be placed in the operating record. If after 90 days, a successful demonstration is not made,
9 the owner or operator shall initiate an assessment monitoring program as required in 15A NCAC 13B .2015.

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

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

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

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

19 (A) aquifer thickness, groundwater flow rate, and groundwater flow direction, including seasonal
20 and temporal fluctuations in groundwater flow; and

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

24 (10) The Division may require or allow the use of alternative monitoring systems in addition to groundwater
25 monitoring wells:

26 (A) at sites where the owner and operator does not control the property from any landfill unit to the
27 groundwater discharge feature(s); or

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

29 (11) Owners and operators of CCR units shall comply with the groundwater monitoring, assessment and
30 corrective action requirements under Rules .2014 and .2015 of this Section according to the following
31 schedule:

32 (A) new CCR units shall be in compliance with the requirements before waste can be placed in the
33 unit; and

34 (B) lateral expansions to existing CCR units shall be in compliance with the requirements before
35 waste can be placed in the expansion area.

36 (d) Surface water monitoring plan. The Surface Water Monitoring System shall be as follows:

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1 (1) The Division shall require a solid waste management facility to provide such surface water monitoring
2 capability as the Division determines to be necessary to detect the effects of the facility on surface water in
3 the area. In making such a determination, the Division shall consider the following factors:

- 4 (A) the design of the facility, the nature of the process it will use, and the type of waste it will handle;
- 5 (B) liner underdrain systems, commonly know as french drains, discharges;
- 6 (C) drainage patterns and other hydrological conditions in the area;
- 7 (D) proximity of surface water to the facility;
- 8 (E) uses that are being or may be made of any surface water that may be affected by the facility; and
- 9 (F) any other factors that reasonably relate to the potential for surface water effects from the facility.

10 (2) Responsibility for sample collection and analysis shall be defined as a part of the monitoring plan.

11 (e) Gas Monitoring. Gas Monitoring shall be required unless otherwise approved by the Division.

12 (1) Owners and operators of all CCR units shall ensure that:

- 13 (A) the concentration of methane gas or other explosive gases generated by the facility does not
14 exceed 25 percent of the lower explosive limit in on-site facility structures (excluding gas control
15 or recovery system components);
- 16 (B) the concentration of methane gas or other explosive gases does not exceed the lower explosive
17 limit for methane or other explosive gases at the facility property boundary; and
- 18 (C) the facility does not release methane gas or other explosive gases in any concentration that can
19 be detected in offsite structures.

20 (2) Owners and operators of all CCR units shall implement a routine methane monitoring program to ensure
21 that the standards of this Paragraph are met.

22 (A) The type of monitoring shall be determined based on soil conditions, the hydrogeologic
23 conditions under and surrounding the facility, hydraulic conditions on and surrounding the facility,
24 the location of facility structures and property boundaries, and the location of all off-site structures
25 adjacent to property boundaries.

26 (B) The frequency of monitoring shall be quarterly or as approved by the Division.

27 (3) If methane or explosive gas levels exceeding the limits specified in Subparagraph (e)(1) of this Rule are
28 detected, the owner and operator shall:

29 (A) immediately take all steps necessary to ensure protection of human health and notify the
30 Division;

31 (B) within seven days of detection, place in the operating record the methane or explosive gas levels
32 detected and a description of the steps taken to protect human health; and

33 (C) within 60 days of detection, implement a remediation plan for the methane or explosive gas
34 releases, place a copy of the plan in the operating record, and notify the Division that the plan has
35 been implemented. The plan shall describe the nature and extent of the problem and the proposed
36 remedy.

37 (4) Owners or operators shall ensure that

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- 1 (A) The concentration of hydrogen sulfide gas generated by the facility does not exceed 20 parts per
2 million in facility structures (excluding gas control or recovery system components); and
3 (B) The concentration of hydrogen sulfide gas does not exceed 50 parts per million at the facility
4 property boundary.
- 5 (5) Owners or operators shall ensure that
- 6 (A) The concentration of oxygen generated by the facility does not exceed assigned threshold of
7 19.5%-23.5% in facility structures (excluding gas control or recovery system components);
8 (6) Based on the need for an extension demonstrated by the operator, the Division may establish alternative
9 schedules for demonstrating compliance with Parts (3)(B) and (3)(C) of this Paragraph.
10 (7) For purposes of this Item, "lower explosive limit" means the lowest percent by volume of a mixture of
11 explosive gases in air that will propagate a flame at 25° C and atmospheric pressure.
- 12 (f) Leachate Monitoring. The owner or operator of a CCR landfill designed with a leachate collection system shall;
13 (1) conduct semi-annual leachate quality sampling from a Division approved sampling point, and
14 (2) detection monitoring shall include monitoring for the constituents listed in the approved site-specific
15 Water Quality Monitoring Plan.
- 16 (g) A waste acceptability program. Owners and operators of all CCR units shall implement a program at the facility
17 for detecting and preventing the disposal of industrial, hazardous, liquid, municipal solid waste and excluded wastes
18 in accordance with the Operating Plan or the effective permit. This program shall include, at a minimum:
19 (1) random inspections of incoming loads or other comparable procedures;
20 (2) records of any inspections;
21 (3) training of facility personnel to recognize industrial, hazardous, liquid, municipal and excluded waste;
22 and
23 (4) development of a contingency plan to properly manage any identified industrial, hazardous, liquid,
24 municipal or excluded waste. The plan shall address identification, removal, storage and final disposition of
25 the waste.
- 26 (h) The Monitoring Plan shall include any other monitoring plan or program which is necessary according to the
27 Operating Plan or the effective permit.
- 28 (i) Monitoring plans shall be prepared under the responsible charge of and bear the seal of a Licensed Geologist or
29 Professional Engineer in accordance with NCGS 89E or 89C, respectively.
- 30 (j) Monitoring plans shall be certified by a Licensed Geologist or Professional Engineer to be effective in providing
31 early detection of any release of hazardous constituents from any point in a disposal cell or leachate surface
32 impoundment to the uppermost aquifer, air, surface waters, or proximal area, so as to be protective of public health
33 and the environment.
- 34 (k) Monitoring plans shall be submitted to the Division for review. The Division shall date and stamp the monitoring
35 plans "approved" if they meet the conditions of this Rule. A copy of the approved monitoring plan shall be placed in
36 the operating record.

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1 (l) Once established at a CCR facility, all monitoring shall be conducted throughout the active life and post-closure
2 care period for all CCR units.

3 (m) The owner or operator of multiple CCR units may install a multiunit groundwater monitoring system instead of
4 separate groundwater monitoring systems for each CCR unit. The multiunit groundwater monitoring system shall be
5 equally as capable of detecting monitored constituents at the relative point of compliance of the CCR unit as the
6 individual groundwater monitoring system specified in paragraph (b) of this Rule for each CCR unit based on the
7 following factors:

8 (1) Number, spacing, and orientation of each CCR unit;

9 (2) Hydrogeologic setting;

10 (3) Site history; and

11 (4) Engineering design of the CCR unit.

12 (n) The owner or operator of the CCR unit shall comply with the recordkeeping, notification and the internet
13 requirements specified in Rule .2017(g) of this Section.

14

15 *Authority NCGS 130-294; NCGS 130A-309.207*

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1 15A NCAC 13B .2015 is proposed for adoption as follows:

2 **15A NCAC 13B .2015 ASSESSMENT AND CORRECTIVE ACTION PROGRAM FOR CCR**
3 **FACILITIES AND UNITS**

4 (a) Assessment Program. Assessment is required if one or more constituents, as listed in Part (c)(1)(D) of Rule .2014
5 of this Section are detected above the current groundwater quality standards in accordance with 15A NCAC 02L .0202
6 or Interim Maximum Allowable Concentration (IMAC), in any sampling event. The owner and operator shall also
7 immediately:

- 8 (1) Notify all persons who own land or reside on land that directly overlies any part of the plume of
9 contamination if contaminants have migrated off-site or are thought to have migrated off site;
- 10 (2) Within 30 days prepare a notification stating that an assessment monitoring program has been
11 established.
- 12 (3) Within 90 days of triggering an assessment monitoring program, the owner and operator shall
13 submit an assessment monitoring work plan for Division review. The Division shall date and stamp
14 the assessment monitoring program "approved" if the conditions in Paragraph (b) of this Rule are
15 met. The owner and operator shall place the approved program in the operation record, and notify
16 all appropriate local government officials.

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

- 19 (1) Install at least one additional groundwater monitoring well or methane gas monitoring well at the
20 facility boundary or the compliance boundary, as defined in 15A NCAC 02L .0100, in the direction
21 of contaminant migration. The new sampling point shall be installed at the facility boundary or
22 compliance boundary at the location most likely to show impact based on the known geology and
23 hydrogeology. The additional monitoring wells shall characterize the nature and extent of the
24 release by determining the following factors:
 - 25 (A) Lithology of the aquifer and unsaturated zone;
 - 26 (B) Hydraulic conductivity of the aquifer and unsaturated zone;
 - 27 (C) Groundwater flow rates;
 - 28 (D) Minimum distance of travel;
 - 29 (E) Resource value of the aquifer; and
 - 30 (F) Nature, fate, and transport of any detected constituents.
- 31 (2) A minimum of one sample from each monitoring well shall be collected and analyzed for 40 CFR
32 Part 257 Appendix IV analysis during the initial sampling event. After the initial sampling event,
33 for any constituent detected in the downgradient wells as the result of the Appendix IV analysis, a
34 minimum of three additional independent samples from each well (background and downgradient)
35 shall be collected and analyzed to establish a baseline for the new detected constituents. After the
36 initial sampling event, the Division may specify, as provided for in 40 CFR 257, an appropriate
37 subset of wells to be sampled and analyzed for Appendix IV constituents during assessment

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1 monitoring. After the initial sampling event, the Division may delete, as provided for in 40 CFR
2 257, any of the Appendix IV monitoring parameters for a CCR unit if it can be shown that the
3 removed constituents are not reasonably expected to be in or derived from the waste contained in
4 the unit.

- 5 (3) If the new constituents do not have an established 15A NCAC 02L .0202 groundwater quality
6 standard or Interim Maximum Allowable Concentration (IMAC), the owner or operator shall obtain
7 a determination from the Division on establishing a groundwater protection standard for each
8 constituent detected in groundwater. The groundwater protection standard shall be the most
9 protective of the following:

10 (A) For constituents for which a maximum contamination level (MCL) has been promulgated
11 under the Section 1412 of the Safe Drinking Water Act codified under 40 CFR Part 141,
12 the MCL for that constituent;

13 (B) For constituents for which a water quality standard has been established under the North
14 Carolina Rules Governing Public Water Systems, 15A NCAC 18C, the water quality
15 standard for that constituent;

16 (C) For constituents for which a water quality standard has not been established under the
17 North Carolina Groundwater Classifications And Standards, 15A NCAC 02L .0202, an
18 Interim Maximum Allowable Concentration (IMAC) is established;

19 (D) For constituents for which MCLs or water quality standards have not been promulgated,
20 the background concentration for the constituent established from wells in accordance with
21 Rule .2014(c)(1)(A) of this Section; or

22 (E) For constituents for which the background level is higher than the MCL or water quality
23 standard or health based levels identified under Paragraph (i) of this Rule, the background
24 concentration.

- 25 (4) The Division may establish an alternative groundwater protection standard for constituents for
26 which neither an MCL or water quality standard has not been established. These groundwater
27 protection standards shall be appropriate health based levels that satisfy the following criteria:

28 (A) The level is derived in a manner consistent with E.P.A. guidelines for assessing the health
29 risks of environmental pollutants;

30 (B) The level is based on scientifically valid studies conducted in accordance with the Toxic
31 Substances Control Act Good Laboratory Practice Standards (40 CFR Part 792) or
32 equivalent;

33 (C) For carcinogens, the level represents a concentration associated with an excess lifetime
34 cancer risk level (due to continuous lifetime exposure) of 1×10^{-6} ;

35 (D) For systemic toxicants, the level represents a concentration to which the human population
36 (including sensitive subgroups) could be exposed on a daily basis that is likely to be without

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1 appreciable risk of deleterious effects during a lifetime. For the purposes of this Rule,
2 systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

3 (5) In establishing groundwater protection standards under Paragraph (b) of this Rule the Division may
4 consider the following:

- 5 (A) Multiple contaminants in the ground water;
- 6 (B) Exposure threats to sensitive environmental receptors; and
- 7 (C) Other site-specific exposure or potential exposure to ground water.

8 (c) Assessment Monitoring Report

9 (1) After obtaining the results from the initial and subsequent sampling events, the owner or operator shall
10 submit an assessment monitoring report to the Division which shall be certified by a Licensed
11 Geologist or Professional Engineer.

12 (2) Within 14 days, submit a report to the Division and place a notice in the operating record identifying the
13 Appendix IV constituents that have been detected;

14 (3) The Division may approve an appropriate alternate frequency and/or subset of wells for repeated
15 sampling and analysis for Appendix IV constituents required during the active life and post-closure
16 care of the unit considering all of the following factors:

- 17 (A) Lithology of the aquifer and unsaturated zone;
- 18 (B) Hydraulic conductivity of the aquifer and unsaturated zone;
- 19 (C) Groundwater flow rates;
- 20 (D) Minimum distance of travel;
- 21 (E) Resource value of the aquifer; and
- 22 (F) Nature, fate, and transport of any detected constituents.

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

31 (5) The Division may give approval to the owner or operator to return to detection monitoring if all of
32 the following are met:

- 33 (A) The concentrations of the constituents are shown to be at or below background values and
34 15A NCAC 02L .0202 for two consecutive sampling events;
- 35 (B) The plume is not migrating horizontally or vertically; and
- 36 (C) The plume has not exceeded the compliance boundary.

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1 (6) If constituents are consistently detected above background, or 15A NCAC 02L .0202, or the
2 approved groundwater protection standards, the owner or operator shall initiate Assessment of
3 Corrective Measures.

4 (d) Assessment of Corrective Measures. Assessment of corrective measures is required upon completion of
5 Paragraphs (a) and (b) and (c) of this Rule as determined by the Division. The assessment of corrective measures shall
6 include an analysis of the effectiveness of potential corrective actions in meeting all of the requirements and objectives
7 of the remedy as described under this Rule.

8 (1) The assessment of corrective measures document shall address all the following at a minimum:

- 9 (A) the performance, reliability, ease of implementation, and potential impacts of appropriate
10 potential remedies, including safety impacts, cross-media impacts, and control of exposure
11 to any residual contamination;
- 12 (B) the time required to begin and to complete the remedy;
- 13 (C) the costs of remedy implementation; and
- 14 (D) the institutional requirements such as State and Local permit requirements or other
15 environmental or public health requirements that may substantially affect implementation
16 of the remedy(s).

17 (2) The owner and operator shall discuss the results of the assessment of corrective measures, prior to
18 the selection of the remedy, in a public meeting with interested and affected parties. The owner and
19 operator shall provide a public notice of the meeting at least 30 days prior to the meeting. The notice
20 shall include the time, place, date, and purpose of the meeting required by this Paragraph of this
21 Rule. A copy of the public notice shall be forwarded to the Division at least five days prior to
22 publication. The owner and operator shall mail a copy of the public notice to those persons
23 requesting notification. Public notice shall be in accordance with Rule .2003(c)(4) of this Section.

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

26 (1) Within 30 days of selecting a remedy, the permittee shall submit an application to modify the permit
27 describing the selected remedy to the Division for evaluation and approval. The application shall be
28 subject to the processing requirements set forth in Rule .2003(c) and (d) of this Section. The
29 application shall include the demonstrations necessary to comply with the financial assurance
30 requirements set forth in accordance with Rule .2016 of this Section.

31 (2) Remedies shall:

- 32 (A) be protective of human health and the environment;
- 33 (B) attain the approved groundwater protection standards;
- 34 (C) control the source(s) of releases so as to reduce or eliminate, to the maximum extent
35 practicable, further releases of constituents into the environment that may pose a threat to
36 human health or the environment; and
- 37 (D) comply with standards for management of wastes as specified in Paragraph (k) of this Rule.

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- 1 (3) In selecting a remedy that meets the standards of Subparagraph (e)(2) of this Rule, the owner and
2 operator shall consider the following evaluation factors:
- 3 (A) The long-term and short-term effectiveness and protectiveness of the potential remedy(s),
4 along with the degree of certainty that the remedy will prove successful based on
5 consideration of the magnitude of reduction of existing risks; magnitude of residual risks
6 in terms of likelihood of further releases due to wastes remaining following implementation
7 of a remedy; the type and degree of long-term management required, including monitoring,
8 operation, and maintenance; short-term risks that might be posed to the community, to
9 workers, or to the environment during implementation of such a remedy, including
10 potential threats to human health and the environment associated with excavation,
11 transportation, and re-disposal or containment; time until full protection is achieved;
12 potential for exposure of humans and environmental receptors to remaining wastes,
13 considering the potential threat to human health and the environment associated with
14 excavation, transportation, re-disposal, or containment; long-term reliability of the
15 engineering and institutional controls; and potential need for replacement of the remedy.
- 16 (B) The effectiveness of the remedy in controlling the source to reduce further releases, based
17 on consideration of the extent to which containment practices will reduce further releases,
18 and the extent to which treatment technologies may be used.
- 19 (C) The ease or difficulty of implementing a potential remedy, based on consideration of the
20 degree of difficulty associated with constructing the technology; the expected operational
21 reliability of the technologies; the need to coordinate with and obtain necessary approvals
22 and permits from other agencies; the availability of necessary equipment and specialists;
23 and available capacity and location of needed treatment, storage, and disposal services.
- 24 (D) The practicable capability of the owner and operator, including a consideration of the
25 technical and economic capability.
- 26 (4) The owner and operator shall specify as part of the selected remedy a schedule for initiating and
27 completing remedial activities included in a corrective action plan. This schedule shall be submitted
28 to the Division for review and approval. Such a schedule shall require the initiation of remedial
29 activities within a reasonable period of time, taking into consideration the factors set forth in this
30 Rule. The owner and operator shall consider the following factors in determining the schedule of
31 remedial activities:
- 32 (A) nature and extent of contamination;
- 33 (B) practical capabilities of remedial technologies in achieving compliance with the approved
34 groundwater protection standards and other objectives of the remedy;
- 35 (C) availability of treatment or disposal capacity for wastes managed during implementation
36 of the remedy;

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- 1 (D) desirability of utilizing technologies that are not currently available, but which may offer
- 2 advantages over already available technologies in terms of effectiveness, reliability, safety,
- 3 or ability to achieve remedial objectives;
- 4 (E) potential risks to human health and the environment from exposure to contamination prior
- 5 to completion of the remedy;
- 6 (F) resource value of the aquifer, including current and future uses; proximity and withdrawal
- 7 rate of users; groundwater quantity and quality; the potential damage to wildlife, crops,
- 8 vegetation, and physical structures caused by exposure to contaminants; the hydrogeologic
- 9 characteristics of the facility and surrounding land; groundwater removal and treatment
- 10 costs; the costs and availability of alternative water supplies;
- 11 (G) practical capability of the owner and operator; and
- 12 (H) other relevant factors.

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

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

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

29 (h) Implementation of the Corrective Action Program. Based on the approved schedule for initiation, and completion
30 of remedial activities, in 120 days after approval of the selected remedy or as approved by the Division, the owner and
31 operator shall submit in a corrective action plan:

- 32 (1) Establish and implement a corrective action groundwater monitoring program that:
- 33 (A) at a minimum, meets the requirements of an assessment monitoring program under
- 34 Paragraphs (a), (b), and (c) of this Rule;
- 35 (B) indicates the effectiveness of the corrective action remedy; and
- 36 (C) demonstrates compliance with groundwater protection standards or Interim Maximum
- 37 Allowable Concentration (IMAC), pursuant to Paragraph (j) of this Rule.

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- 1 (2) Implement the approved corrective action remedy; and
- 2 (3) Take any interim measures necessary to ensure the protection of human health and the environment.
- 3 Interim measures shall be consistent with the objectives of and contribute to the performance of any
- 4 remedy that may be required. The following factors shall be considered by an owner and operator
- 5 in determining whether interim measures are necessary:
- 6 (A) time required to develop and implement a final remedy;
- 7 (B) actual or potential exposure of nearby populations or environmental receptors to hazardous
- 8 constituents;
- 9 (C) actual or potential contamination of drinking water supplies or sensitive ecosystems;
- 10 (D) further degradation of the ground water that may occur if remedial action is not initiated
- 11 expeditiously;
- 12 (E) weather conditions that may cause hazardous constituents to migrate or be released;
- 13 (F) risks of fire or explosion, or potential for exposure to hazardous constituents as a result of
- 14 an accident or failure of a container or handling system; and
- 15 (G) other situations that may pose threats to human health or the environment.
- 16 (i) A Corrective Action Evaluation Report (CAER) shall be submitted at least once every five calendar years.
- 17 (j) The owner or operator or the Division may determine, based on information developed after implementation of
- 18 the remedy has begun or other information, that compliance with requirements of Subparagraph (e)(2) of this Rule are
- 19 not being achieved through the remedy selected. In such cases, the owner and operator shall implement other methods
- 20 or techniques, as approved by the Division that could practicably achieve compliance with the requirements, unless
- 21 the owner or operator makes the determination under Paragraph (f) of this Rule.
- 22 (k) If the owner or operator determines that compliance with requirements of Subparagraph (e)(2) of this Rule cannot
- 23 be practically achieved with any currently available methods, the owner and operator shall:
- 24 (1) obtain certification of a Licensed Geologist or Professional Engineer and approval from the Division
- 25 that compliance with the requirements under Subparagraph (e)(2) of this Rule cannot be practically
- 26 achieved with any currently available methods;
- 27 (2) implement alternate measures to control exposure of humans or the environment to residual
- 28 contamination, as necessary to protect human health and the environment;
- 29 (3) implement alternate measures for control of the sources of contamination, or for removal or
- 30 decontamination of equipment, units, devices, or structures that are:
- 31 (A) technically practicable and
- 32 (B) consistent with the overall objective of the remedy; and
- 33 (4) submit a report justifying the alternative measures to the Division for review. The Division shall
- 34 date and stamp the report "approved" if the conditions of this paragraph are satisfied. The approved
- 35 report shall be placed in the operating record prior to implementing the alternative measures.
- 36 (l) All solid wastes that are managed pursuant to a remedy required under Paragraph (e) of this Rule, or an interim
- 37 measure required under Paragraph (e) of this Rule, shall be managed in a manner:

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- 1 (1) that is protective of human health and the environment, and
2 (2) that complies with applicable state and federal requirements.
- 3 (m) Remedies selected pursuant to Paragraph (e) of this Rule shall be considered complete when:
- 4 (1) the owner and operator complies with the groundwater protection standards at all points within the
5 plume of contamination that lie beyond the relevant point of compliance;
- 6 (2) compliance with the groundwater protection standards has been achieved by demonstrating that
7 concentrations of constituents have not exceeded these standards for a period of three consecutive
8 years, consistent with performance standards in Subparagraph (e)(2) of this Rule; and
- 9 (3) all actions required to complete the remedy have been satisfied.
- 10 (n) Upon completion of the remedy, the owner and operator shall submit a report to the Division documenting that
11 the remedy has been completed in compliance with Paragraph (m) of this Rule. As required by NCGS 89C or NCGS
12 89E, a professional engineer or licensed geologist shall prepare and sign these documents. Upon approval by the
13 Division, this report shall be placed in the operating record.
- 14 (o) When, upon completion of the certification, the Division determines that the corrective action remedy has been
15 completed in accordance with Paragraph (m) of this Rule, the owner and operator shall be released from the
16 requirements for financial assurance for corrective action under Rule .2016 of this Section.
- 17 (p) This section shall not apply to CCR surface impoundments.

18

19 *Authority NCGS 130-294; NCGS 130A-309.207*

DRAFT CCR RULE

1 15A NCAC 13B .2016 is proposed for adoption as follows:

2 **15A NCAC 13B .2016 FINANCIAL ASSURANCE REQUIREMENTS FOR CCR UNITS**

3 (a) Owners and operators of **CCR** facilities and units shall provide proof of financial assurance in accordance with
4 the financial responsibility for landfills adopted pursuant to NCGS 130A-294(b) and 130A-309.27.

5 (b) Owners and operators of **CCR** facilities and units permitted under these Rules shall provide proof of financial
6 assurance to ensure closure of the site in accordance with these Rules and to cover closure, post-closure, and corrective
7 action of the CCR unit landfill. Financial assurance may be demonstrated through financial instruments including but
8 not limited to surety bonds, insurance, letters of credit, a funded trust, local government financial test, or corporate
9 financial test. Documentation of financial assurance shall be kept current, and updated annually as required by changes
10 in these Rules, changes in operation of the site, and inflation.

11 (c) Owners and operators of CCR facilities and units shall demonstrate the following minimum amounts of financial
12 assurance for closure and post-closure care:

13 (1) Closure Cost Estimate. The owner and operator shall have a written estimate, in current dollars,
14 of the cost of hiring a third party to close the entire area of all CCR units, which have received
15 permits to operate, at any time during the active life in accordance with the closure plan required
16 under Rule .2013 of this Section. A copy of the closure cost estimate shall be placed in the operating
17 record.

18 (A) The cost estimate shall equal the cost of closing the entire area of all CCR units, which
19 have received permits to operate, at any time during the active life when the extent and
20 manner of its operation would make closure the most expensive, as indicated by its closure
21 plan as set forth in Rule .2013 of this Section.

22 (B) During the active life of the CCR units, the owner and operator shall annually adjust the
23 closure cost estimate for inflation within 60 days prior to the anniversary date of the
24 establishment of the financial instrument(s). For owners and operators using the local
25 government financial test, the closure cost estimate shall be updated for inflation within 30
26 days after the close of the local government's fiscal year and before submission of updated
27 information to the Division.

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

32 (D) The owner or operator may reduce the closure cost estimate and the amount of financial
33 assurance provided under Subparagraph (2) of this Paragraph if the cost estimate exceeds
34 the maximum cost of closure at any time during the remaining life of the CCR unit. Prior
35 to any reduction of the closure cost estimate or the amount of financial assurance by the
36 owner or operator, a written justification for the reduction shall be submitted to the Division
37 for review. The Division shall date and stamp the justification "approved" if the conditions

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1 of this paragraph are met. The reduction justification and the Division approval shall be
2 placed in the CCR's operating record. No reduction of the closure cost estimate or the
3 amount of financial assurance shall be allowed without Division approval.

4 (2) Financial Assurance for Closure. The owner and operator of each CCR unit shall establish financial
5 assurance for closure of the CCR unit in compliance with Paragraph (a) of this Rule. The owner and
6 operator shall provide continuous coverage for closure until released from financial assurance
7 requirements by demonstrating compliance with Rule .2013 of this Section for final closure
8 certification.

9 (3) Post-Closure Cost Estimate. The owner and operator shall have a written estimate, in current dollars,
10 of the cost of hiring a third party to conduct post-closure care for the CCR unit(s) in compliance
11 with the post-closure plan developed under Rule .2013 of this Section. The post-closure cost
12 estimate used to demonstrate financial assurance in Subparagraph (2) of this Paragraph shall account
13 for the total costs of conducting post-closure care, including annual and periodic costs as described
14 in the post-closure plan over the entire post-closure care period. The post-closure cost estimate shall
15 be placed in the operating record.

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

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

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

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

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- 1 (4) Financial Assurance for Post-Closure. The owner and operator of each CCR unit shall establish, in
2 a manner in accordance with Paragraph (a) of this Rule, financial assurance for the costs of post-
3 closure care as required under Rule .2013 of this Section. The owner and operator shall provide
4 continuous coverage for post-closure care until released from financial assurance requirements for
5 post-closure care by demonstrating compliance with Rule **.2013** of this Section. Maintenance of
6 financial assurance in the required amounts in Subparagraphs (c)(1) and (c)(2) of this Rule does not
7 in any way limit the responsibility of owners and operators for the full costs of site closure and
8 clean-up, the expenses of any on-site or off-site environmental restoration necessitated by activities
9 at the site, and liability for all damages to third parties or private or public properties caused by the
10 establishment and operation of the site.
- 11 (5) Corrective Action Cost Estimate. An owner and operator of a CCR unit required to undertake a
12 corrective action program under Rule .2015 of this Section shall have a written estimate, in current
13 dollars, of the cost of hiring a third party to perform the corrective action. The corrective action cost
14 estimate shall account for the total costs of corrective action activities as described in the corrective
15 action program for the entire corrective action period. The corrective action cost estimate shall be
16 placed in the operating record.
- 17 (A) The owner and operator shall annually adjust the estimate for inflation within 60 days prior
18 to the anniversary date of the establishment of the financial instrument(s) until the
19 corrective action program is completed in accordance with Rule .2015(m) of this Section.
20 For owners and operators using the local government financial test, the corrective action
21 cost estimate shall be updated for inflation within 30 days after the close of the local
22 government's fiscal year and before submission of updated information to the Division.
- 23 (B) The owner and operator shall increase the corrective action cost estimate and the amount
24 of financial assurance provided under Subparagraph (2) of this Paragraph if changes in the
25 corrective action program or CCR unit conditions increase the maximum costs of
26 corrective action.
- 27 (C) The owner or operator may reduce the corrective action cost estimate and the amount of
28 financial assurance provided under Subparagraph (2) of this Paragraph if the cost estimate
29 exceeds the maximum remaining costs of corrective action. Prior to any reduction of the
30 corrective action cost estimate by the owner or operator, a written justification for the
31 reduction shall be submitted to the Division for review. The Division shall date and stamp
32 the justification "approved" if the conditions of this Paragraph are met. The reduction
33 justification and the Division approval shall be placed in the CCR's operating record. No
34 reduction of the corrective action cost estimate shall be allowed without Division approval.
- 35 (6) Financial Assurance for Corrective Action. The owner and operator of each CCR unit required to
36 undertake a corrective action program under Rule .2015 of this Section shall establish, in a manner
37 in accordance with Paragraph (a) of this Rule, financial assurance for the most recent corrective

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1 action program. The owner or operator shall provide continuous coverage for corrective action until
2 released from financial assurance requirements for corrective action by demonstrating compliance
3 with Rule .2015(m) of this Section.

4

5 *Authority NCGS 130-294; NCGS 130A-309.207*

DRAFT CCR RULE

1 15A NCAC 13B .2017 is proposed for adoption as follows:

2 **15A NCAC 13B .2017 RECORDKEEPING, NOTIFICATON and PUBLICLY ACCESSIBLE INTERNET**
3 **SITE REQUIREMENTS**

4 (a) Record Keeping.

5 (1) Each owner or operator of a CCR unit shall maintain files of all information required by this Rule
6 in a written operating record at their facility.

7 (2) Unless specified otherwise, each file shall be retained for at least five years following the date of
8 each occurrence, measurement, maintenance, corrective action, report, record, or study.

9 (3) An owner or operator of more than one CCR unit may comply with the requirements of this section
10 in one recordkeeping system provided the system identifies each file by the name of each CCR unit.
11 The files may be maintained on microfilm, on a computer, on computer disks, on a storage system
12 accessible by a computer, on magnetic tape disks, or on microfiche.

13 (4) The owner or operator of a CCR unit shall submit to the Division any demonstration or
14 documentation required by this subpart, if requested, when such information is not otherwise
15 available on the owner or operator's publicly accessible Internet site.

16 (b) Notifications

17 (1) The notifications required under paragraphs (d) through (i) of this Rule shall be sent to the relevant
18 Division before the close of business on the day the notification is required to be completed. For
19 purposes of this section, before the close of business means the notification shall be postmarked or
20 sent by electronic mail (email). If a notification deadline falls on a weekend or federal holiday, the
21 notification deadline is automatically extended to the next business day.

22 (2) Notifications may be combined as long as the deadline requirement for each notification is met.

23 (3) Unless otherwise required in this section, the notifications specified in this section shall be sent to
24 the Division within 30 days of placing in the operating record the information required by this Rule.

25 (c) Public Accessible Internet Site

26 (1) Each owner or operator of a CCR unit shall maintain a publicly accessible Internet site (CCR Web
27 site) containing the information specified in this section. The owner or operator's Web site shall be
28 titled "CCR Rule Compliance Data and Information."

29 (2) An owner or operator of more than one CCR unit may comply with the requirements of this Rule
30 by using the same Internet site for multiple CCR units provided the CCR Web site clearly delineates
31 information by the name or identification number of each unit.

32 (3) Unless otherwise required in this Rule, the information required to be posted to the CCR Web site
33 shall be made available to the public for at least five years following the date on which the
34 information was first posted to the CCR Web site.

35 (4) Unless otherwise required in this Rule, the information shall be posted to the CCR Web site within
36 30 days of placing the pertinent information required by this Rule in the operating record.

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1 (d) Location restrictions. The owner or operator of a CCR unit shall place the demonstrations documenting whether
2 or not the CCR unit is in compliance with the requirements in Rule .2006 of this Section as it becomes available, in
3 the facility's operating record, on the publicly accessible internet site and submit proper notification.

4 (e) Design criteria. The owner or operator of a CCR unit shall place the following information, as it becomes available,
5 in the facility's operating record, on the publicly accessible internet site and submit proper notification. The design
6 and construction certifications by a professional engineer in accordance with Rule .2013 of this Section. Within 60
7 days of commencing construction of a new CCR unit or lateral expansion of an existing unit, provide notification of
8 the design certification and place the design certification on the CCR Web site. If the owner or operator of the CCR
9 unit elects to install an alternative composite liner, the owner or operator shall also submit to the Division a copy of
10 the alternative composite liner design.

11 (f) Operating criteria. The owner or operator of a CCR unit shall place the following information, as it becomes
12 available, in the facility's operating record, on the publicly accessible internet site and submit proper notification:

- 13 (1) The CCR fugitive dust control plan, and any subsequent amendment of the plan in accordance with
14 Rule .2012(g)(2) of this Section except that only the most recent control plan shall be maintained in
15 the facility's operating record.
- 16 (2) The annual CCR fugitive dust control report in accordance with Rule .2012(g)(3) of this Section.
- 17 (3) The initial and periodic run-on and run-off control system plans in accordance with Rule .2012(l) of
18 this Section.
- 19 (4) Documentation recording the results of the weekly inspection in accordance with Rule .2012(l) of
20 this Section.
- 21 (5) Documentation recording the results of the annual inspection in accordance with Rule .2012(m) of
22 this Section.

23 (g) Groundwater monitoring and corrective action. The owner or operator of a CCR unit shall place the following
24 information, as it becomes available, in the facility's operating record, on the publicly accessible internet site and
25 submit proper notification:

- 26 (1) The annual groundwater monitoring and corrective action report in accordance with Rule
27 .2014(a)(4) of this Section.
- 28 (2) Documentation of the design, installation, development, and decommissioning of any monitoring
29 wells, piezometers and other measurement, sampling, and analytical devices in accordance with
30 Rule .2014(c)(8) of this Section.
- 31 (3) The groundwater monitoring system certification in accordance with Rule .2014(h) of this Section.
- 32 (4) The selection of a statistical method certification in accordance with Rule .2014(c)(4) of this
33 Section.
- 34 (5) Within 30 days of establishing an assessment monitoring program, the owner or operator of a CCR
35 unit must prepare a notification stating that an assessment monitoring program has been established
36 in accordance with Rule .2015(a)(2) of this Section.

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- 1 (6) The analytical results of initial sampling and subsequent semi-annual sampling events in accordance
2 with Rule .2014(c)(1)(D) of this Section.
- 3 (7) Within 30 days of returning to a detection monitoring program, the notification as required Rule
4 .2015(c)(5) of this Section.
- 5 (8) Within 30 days of detecting one or more constituents, as listed in Rule .2014(c)(1)(D) of this Section
6 above the current groundwater quality standards in accordance with 15A NCAC 02L .0202, the
7 notifications in accordance with Rule .2015(a) of this Section.
- 8 (9) Within 30 days of initiating the assessment of corrective measures requirements, the notification as
9 required Rule .2015(d) of this Section.
- 10 (10) The completed assessment of corrective measures in accordance with Rule .2015(d) of this Section.
- 11 (11) Documentation prepared by the owner or operator recording the public meeting for the corrective
12 measures assessment in accordance with Rule .2015(d)(5) of this Section.
- 13 (12) The semiannual report describing the progress in selecting and designing the remedy and the
14 selection of remedy report in accordance with Rule .2015(e) of this Section, except that the selection
15 of remedy report shall be maintained until the remedy has been completed.
- 16 (13) Within 30 days of completing the remedy, the notification in accordance with Rule .2015(h) of this
17 Section.
- 18 (h) Closure and post-closure care. The owner or operator of a CCR unit shall place the following information, as it
19 becomes available, in the facility's operating record, on the publicly accessible internet site and submit proper
20 notification:
 - 21 (1) The notification and certification of intent to initiate closure of the CCR unit in accordance with
22 Rule .2013(c)(6) of this Section.
 - 23 (2) The annual progress reports of closure implementation of the CCR unit in accordance with Rule
24 .2013(c)(10) of this Section.
 - 25 (3) The notification and certification of closure completion in accordance with Rule .2013(c)(7) of this
26 Section.
 - 27 (4) The written closure plan, and any amendment of the plan, in accordance with Rule .2013(c)(1) of
28 this Section, except that only the most recent closure plan shall be maintained in the facility's
29 operating record irrespective of the time requirement specified in paragraph (a)(2) of this Rule.
 - 30 (5) The notification recording a notation on the deed in accordance with Rule .2013(c)(8) of this
31 Section.
 - 32 (6) The written post-closure plan, and any amendment of the plan, in accordance with Rule .2013(d)
33 (4) of this Section, except that only the most recent closure plan shall be maintained in the facility's
34 operating record irrespective of the time requirement specified in paragraph (a)(2) of this Rule.
 - 35 (7) The notification of completion of post-closure care period in accordance with Rule .2013(d)(5) of
36 this Section.

37

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1 *Authority NCGS 130-294; NCGS 130A-309.207*

DRAFT CCR RULE

1 15A NCAC 13B .2018 is proposed for adoption as follows:

2 15A NCAC 13B .2018 **COAL COMBUSTION PRODUCTS (CCP) REUSE FACILITY STORAGE,**
3 **TRANSPORT AND REPORTING REQUIREMENTS**

4 (a) A CCP reuse facility is defined as any facility that by either treatment or processing changes a coal combustion
5 residual (CCR) removed from a disposal unit into a coal combustion product (CCP). Each CCP reuse facility shall be
6 permitted as a treatment and processing facility according to 15A NCAC 13B .0300, in accordance with the
7 requirements of 15A NCAC 13B .0200.

8 (b) If CCR does not have a beneficial use then it is a waste. Beneficial use of CCR means the CCR meets all of the
9 following conditions:

- 10 1. the CCR shall provide a functional benefit;
- 11 2. the CCR shall substitute for the use of a virgin material, conserving natural resources that would
12 otherwise need to be obtained through practices, such as extraction; the use of the CCR shall meet
13 relevant product specifications, regulatory standards or design standards when available, and when
14 such standards are not available, the CCR is not used in excess quantities;
- 15 3. the user shall demonstrate and keep records, and provide such documentation upon request, that
16 environmental releases to groundwater, surface water, soil and air are comparable to or lower than
17 those from analogous products made without CCR, or that environmental releases to groundwater,
18 surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for
19 human and ecological receptors during use.

20 (c)..Each CCP reuse facility shall implement a dust control plan in accordance with Rule .2012(g).

21 (d)..Each CCP reuse facility shall provide a written plan for management of CCR for processing or beneficial reuse
22 CCP. The plan shall provide measures and procedures to prevent uncontrolled exposure from the extended, repeated,
23 or indefinite placement of large amounts of CCR directly on land outside of designated areas. The plan shall address;
24 designated storage sites, the use of an impervious surface, leachate and run-off collection, and walls or wind barriers.

25 (e)..Reporting Requirement for Incidents. The loss of CCR during transport outside of designated storage sites
26 shall be reported to the Division within 24 hours of the incident and a written report shall be submitted to the
27 Division within fifteen (15) working days of the incident. The report shall include; the location, the date, the time,
28 actions that led to the incident, and the measures taken to remove the CCR from the site of the incident.

29 (f)..Each CCP reuse facility shall provide a written plan ensuring the safe transport of CCR on and off site. The
30 plan shall provide; a description of the removal of CCR from designated storage sites, the routes to be utilized in
31 the transportation of CCR to CCP reuse facilities, the types of equipment to be utilized in the transportation of
32 CCR to CCP reuse facilities, measures to be implemented in order to prevent loss of CCR in transit to the CCP
33 reuse facility, actions that will be taken should CCR be lost in transit, a list of emergency contacts and reporting
34 requirements for an incident.

35 (g)..Reporting of Excavated CCR. All CCR excavated for the purpose of either treatment or processing into a CCP
36 or for disposal in another state, shall be reported to the Division annually. The report shall include treatment and
37 processing or disposal facility name and location and the quantity of CCR in either cubic yards or tons.

DRAFT CCR RULE

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2 *Authority NCGS 130-294; NCGS 130A-309.226*

3

DRAFT CCR RULE

1 **Appendix III to Part 257—Constituents for Detection Monitoring Common name¹**

2

3 Boron

4 Calcium

5 Chloride

6 Fluoride

7 pH

8 Sulfate

9 Total Dissolved Solids (TDS)

10

11 ¹ Common names are those widely used in government regulations, scientific publications, and commerce; synonyms
12 exist for many chemicals.

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14 *Authority NCGS 130-294; NCGS 130A-309.226*

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Appendix IV to Part 257—Constituents for Assessment Monitoring Common name¹

- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Fluoride
- Lead
- Lithium
- Mercury
- Molybdenum
- Selenium
- Thallium
- Radium 226 and 228 combined

¹Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Authority NCGS 130-294; NCGS 130A-309.226