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The statement of scope for this rule, SS 109-19 was approved by the Governor on October 31, 2019, published in Register No. 767A1 on November 4, 2019, and approved by the Natural Resources Board on February 26, 2020. This rule was approved by the Governor on insert date.

**ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
REPEALING, RENUMBERING AND AMENDING, AMENDING, REPEALING AND RECREATING
AND CREATING RULES**

The Wisconsin Natural Resources Board proposes an order to **repeal** NR 514.09 (1) (b) 7.; to **renumber** NR 506.17; to **renumber and amend** NR 504.02 (1), 506.02 (1), 507.02 (1), 512.02 (1), 512.13 (1), 514.02 (1), and 516.02 (1); to **amend** NR 500.05 (intro.), 500.08 (4), 504.10 (intro.), 506.08 (intro.), 507 Appendix I Table 2, 508.01, 508.02 (1), and 520 Table 5; to **repeal and recreate** NR 507 Appendix I Table 3; and to **create** NR 500.03 (19) (Note), (26c), (26g), (26n), (26r), (26w), (26y), (76m), (106m), (121m), (152m), (197) (Note), (246m), and (254m), 500.035, 504.10 (3) (g), 504.12, 506.083, 506.084, 506.17 (1) (title), (2), (3), and (4), 506.20, 507.15 (3), 507.18 (5), 507 Appendix I Table 1A, 508.06, 512.13 (1) (a), (b), and (c), 514.045 and 514.07 (10) relating to coal combustion residual landfills.

WA-17-18

Analysis Prepared by the Department of Natural Resources

1. Statutes Interpreted: Section 289.05(1), Wis. Stats., requires the department to promulgate rules establishing minimum standards for solid waste facilities. Sections 289.06(1) and 227.11(2)(a), Wis. Stats., confer rule making authority to the department to promulgate rules implementing ch. 289, Wis. Stats.

2. Statutory Authority: Sections 289.05(1), 289.06(1) and 227.11(2)(a), Wis. Stats.

3. Explanation of Agency Authority: Coal combustion residual (CCR) landfills are regulated in Wisconsin under ch. 289, Wis. Stats., chs. NR 500 to 520, Wis. Adm. Code, and federal rules. The proposed rule would incorporate federal requirements from 40 CFR 257, Subpart D in order for Wisconsin to seek approval from the Environmental Protection Agency (EPA) for a state CCR permit program for CCR landfills.

CCR is a “solid waste” within the meaning of s. 289.01(33), Wis. Stats. Section 289.05(1), Wis. Stats., requires the department to promulgate rules establishing minimum standards for solid waste facilities. Sections 289.06(1) and 227.11(2)(a), Wis. Stats., also confer rule making authority to the department to promulgate rules implementing ch. 289, Wis. Stats. These provisions supply the department with explicit authority to regulate disposal facilities handling CCR.

On April 17, 2015, the EPA published a final rule to regulate the disposal of CCR as solid waste under subtitle D of the Resource Conservation and Recovery Act (RCRA), 40 CFR Parts 257 and 261. The final rule was effective on October 14, 2015. The 2016 Water Infrastructure Improvements for the Nation (WIIN) Act, Section 2301 allowed states to develop and submit a CCR permit program to EPA for approval. On July 17, 2018, EPA signed additional rule amendments (Phase One, Part One) with additional action pending to address other proposed rule amendments. These changes have allowed the State of Wisconsin to propose the creation of a CCR permit program.

4. Related Statutes or Rules: Chapters NR 500 to 520, Wis. Adm. Code

5. Plain Language Analysis: CCR, often called coal ash, is created when coal is burned by power plants

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to produce electricity. CCR may be disposed of in landfills or treated, stored or disposed of in impoundments designed to hold an accumulation of CCR and liquids. All CCR surface impoundments in Wisconsin will be closed within the next several years and no new impoundments are planned so the department is not proposing to incorporate federal requirements into its proposed CCR permitting program. EPA will continue to regulate surface impoundments. CCR landfills in Wisconsin are currently regulated under both federal rules and existing Wisconsin rules. Where rules differ, CCR landfills must meet both federal and state laws. These proposed rules would allow Wisconsin to seek approval for a state CCR permit program from the EPA. EPA approval of a Wisconsin CCR permit program would allow CCR landfill operators to apply one set of consolidated rules and interact with one regulatory agency.

The federal requirements for CCR landfills include location restrictions, design criteria, operating criteria, groundwater monitoring and corrective action, closure and post-closure care and recordkeeping, notification, and posting of information. Wisconsin proposes using both existing rules to meet these requirements and incorporating the new federal requirements for CCR landfills into Wisconsin rules where required.

Specific elements of the proposed rule include:

- A. NR 500 General Solid Waste Management Requirements: The rule creates new definitions in NR 500 specific to coal combustion residual landfills to correspond with federal definitions. Other revisions to NR 500 clarify that exemptions may not be granted if they cause noncompliance with the minimum federal requirements and that plan modifications are also required to follow the general submittal requirements.
- B. NR 504 Landfill Location, Performance, Design and Construction Criteria: The rule creates a new section, s. NR 504.12, Wis. Adm. Code, for minimum design and construction criteria for CCR landfills related to run-on and run-off controls, liner design, and final cover systems consistent with federal requirements. CCR landfills will need to be designed, constructed and operated in accordance with existing rule requirements and the additional criteria for CCR landfills under the proposed rule. A federal requirement that substantially differs from current rule is that new CCR landfills and lateral expansions of a CCR landfill are required to be designed and constructed with a subbase grade that is located no less than five feet above the upper limit of the uppermost aquifer, or provide a demonstration that there will not be a hydraulic connection between any portion of the base of the CCR landfill and the uppermost aquifer for a CCR landfill. The definition of uppermost aquifer for a CCR landfill is unique to CCR landfills and is included under ch. NR 500 of the proposed rule. Any alternate liner proposals for CCR landfills must also demonstrate that the design meets the minimum federal requirements.
- C. NR 506 Landfill Operational Criteria: The rule creates closure, long-term care, record keeping, inspection and reporting requirements for CCR landfills consistent with federal requirements. The closure requirements include procedures for notification, timeframes for initiation and completion of closure, deed notation, closure by removal of CCR and alternative closure requirements. Consistent with federal requirements, CCR landfills will be required to maintain a written operating record, but for some documents the rule requires the documents be maintained during the operating life and 40-year long-term care period. Specific records will be required to be posted on a CCR landfill publicly accessible internet site maintained by the landfill owner or operator. Inspection requirements include periodic inspections for dust control and stability and annual inspections by a licensed professional engineer related to the condition of the CCR landfill. An annual report will be required by January 31 of each year addressing fugitive dust control, the annual inspection, groundwater monitoring and corrective action, and leachate pipe cleaning and inspection.
- D. NR 507 Environmental Monitoring: The rule creates a new subsection establishing a groundwater monitoring well network for CCR landfills that is consistent with federal requirements. This

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monitoring well network will be in addition to the monitoring network already in place at CCR landfills that is used to ensure compliance with existing state groundwater quality standards. The monitoring wells assigned to determine compliance with the requirements of the new subsection will be designated “CCR wells.” CCR wells will monitor groundwater quality in the uppermost aquifer beneath the CCR landfill while solid waste wells required under preexisting NR 507 regulations will monitor groundwater quality within all water-bearing units, even if they do not qualify as being within the uppermost aquifer. The CCR wells and existing solid waste wells will be sampled for the parameters and frequencies as indicated in the revised ch. NR 507 Appendix tables. Both sets of monitoring wells will be subject to the groundwater quality standards under ch. NR 140, Wis. Adm. Code, including provisions for setting preventive action limits (PALs) for indicator parameters and alternate concentration limits (ACLs) for contaminant concentrations that are naturally elevated above the groundwater quality standards. Detects above the standards at CCR wells will require the operator to conduct a statistical analysis to determine if the exceedance was due to a release from the CCR landfill by comparing upgradient and downgradient water quality results. The subsection includes requirements for establishing a detection monitoring system, notification requirements, and recordkeeping. A minor change to ch. NR 140 that clarifies the design management zone used to apply the point of standards for groundwater monitoring may not be expanded for a CCR landfill will be included in a concurrent rulemaking process, DG-15-19.

- E. NR 508 Responses when a Groundwater Standard is Attained or Exceeded: The rule creates a new subsection outlining remedial actions that are required when a groundwater standard is attained or exceeded at a CCR monitoring well at a CCR landfill, consistent with federal requirements. Once an exceedance has been detected, the owner or operator would be required to notify the department within 60 days from the end of the sampling period and respond by beginning an assessment of the cause and significance of the exceedance. The owner and operator must also begin assessment monitoring unless the department determines within 30 days that, based on evidence supplied by the owner or operator, the exceedance was not a true representative of the groundwater quality at the well. Assessment monitoring consists of sampling all the CCR wells for the NR 507 Appendix I, Table 3 parameters within 90 days of the verified exceedance, then continuing monitoring for the detection monitoring parameters plus any other parameters detected from Table 3 until there are at least 2 consecutive sampling rounds without any exceedance of a groundwater standard. If a groundwater quality exceedance is detected during the assessment monitoring, the owner or operator must define the degree and extent of the contaminant, notify the potentially affected neighbors and submit a site investigation workplan and site investigation report to the department within 60 days unless the owner or operator can demonstrate that the exceedance was caused by natural or off-site sources. After the department reviews the site investigation report and determines that there is a potential release from the CCR landfill, the owner or operator has 60 days to submit a remedial action options report that will assess possible corrective actions. The department will hold an informational public meeting to discuss the results of the remedial action options report no later than 30 days prior to selection of a remedial action. Based on the results of the remedial action options report, the owner or operator will select a remedy that, at a minimum, meets the standards listed in the subsection and ch. NR 722 for the selection of remedial actions. The owner or operator must describe the selected remedy in the remedial action options report and include a section indicating how the selected remedy meets the remedial action standards. The department will review and approve an appropriate remedial action for implantation by the owner or operator. Within 90 days after the department approves a remedy from the remedial action report, the owner or operator shall initiate remedial activities. Once the remedial action is complete, the owner or operator may petition the department for a case closure.
- F. NR 512 Feasibility Report for Landfills: The rule includes additional requirements for feasibility

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reports for CCR landfills, consistent with federal requirements. The feasibility report would need to include a demonstration that addresses specific factors when determining whether an area is unstable. An “unstable area” is already defined in NR 500.03(246) and can include poor foundation conditions, areas susceptible to mass movements, and karst terrains. The rule would also include additional limits on facilities or practices near floodplains.

- G. NR 514 Plan of Operation and Closure Plans for Landfills: The rule includes procedural requirements for initial permitting of CCR landfills to establish a process for existing and new CCR landfills to demonstrate compliance with the new rules after the effective date, consistent with federal requirements. A new or existing CCR landfill will be required to submit a plan of operation modification to include new plans or modifications required by the rule. The rule provides timeframes for review, notification of completeness and a public comment period. Existing landfills that fail to comply with the locational criteria for unstable areas will be required to cease placing waste and close. This chapter also includes additional plan of operation requirements for CCR landfills, including a fugitive dust control plan, a run-on and run-off control plan, a closure plan and a long-term care plan. The rule removes a reference in NR 514.09 (b) related to changes that are less stringent than a federally mandated requirement, because department approvals would need to comply with all federal requirements.
- H. NR 520 Solid Waste Management Fees and Financial Responsibility Requirements: The rule proposes new fees for CCR landfills for annual reports and the plan of operation modification for initial permitting. The fees cover the estimated cost for department staff to provide plan review and approval services. This rule does not change other applicable fees.

6. Summary of, and Comparison with, Existing or Proposed Federal Statutes and Regulations: The proposed rule revisions will be consistent with federal CCR rules (40 CFR 257, Subpart D) in order for Wisconsin to seek approval of a state CCR permit program. Current portions of chs. NR 500 to 520, Wis. Adm. Code, are already consistent with federal rules or may be considered no less protective than federal rule for CCR landfills. Final implementation of this rulemaking will include approval of the rule language and overall program by the U.S. EPA.

7. Summary of Comments Received on the Statement of Scope and How the Agency Took Those Comments into Account in Drafting the Proposed Rule: The Department held a preliminary public hearing on the statement of scope on January 7, 2020, at the Waukesha State Office Building, 141 NW Barstow, Waukesha, WI. No members of the public attended the hearing.

The public comment period on the scope statement ended on January 14, 2020. The Department received two written comments. One indicated support of the proposed statement of scope and the other expressed concerns regarding Wisconsin’s ability to perform better than the EPA in regulating these sites given the lack of funding and staff. Those concerns included the need to ensure environmental protections and financial assurance and providing opportunities for public input in the permitting and enforcement processes.

All comments were incorporated into rule development. Originally, the scope statement also considered creating a state permit program for managing CCR in surface impoundments, in addition to landfills. The department decided that surface impoundments would continue to be regulated by the EPA and did not include those provisions in this rulemaking. Feedback provided by industry representatives prior to scope statement development indicated that all surface impoundments will be closed within the next several years and no new surface impoundments are currently planned for Wisconsin.

8. Comparison with Similar Rules in Adjacent States:

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States have the option to seek approval from the EPA of a state CCR permit program that contains rules at least as protective as the federal rule. If a state chooses not to create its own permit program or to create a partial program, regulatory authority will continue under the EPA for all or a portion of CCR disposal activity.

- Illinois will be seeking approval for a state permit program for CCR surface impoundments only, not landfills.
- Iowa is undecided if or when it will seek approval for a state permit program.
- Michigan is seeking approval for both surface impoundments and landfills and submitted an application to EPA in April 2020 for permit program approval.
- Minnesota will not be seeking permit program approval.
- Other states in EPA Region 5 are doing the following: Ohio is in the preliminary stages of rulemaking and will be seeking approval for both surface impoundments and landfills. Indiana recently indicated to EPA that it may not be seeking approval.

9. Summary of Factual Data and Analytical Methodologies Used and How Any Related Findings Support the Regulatory Approach Chosen: The proposed rule would include federal requirements from 40 CFR 257, Subpart D in order for Wisconsin to seek approval from EPA for a state CCR permit program for CCR landfills. This regulatory approach was chosen so that CCR landfill operators may apply one set of rules and interact with one regulatory agency. CCR landfills were regulated under Wisconsin law prior to the creation of the federal CCR rule in 2015. In coordination with all stakeholders and under review by the EPA, these rules were developed to ensure Wisconsin rules applied to CCR landfills are as protective, or more protective, than the federal rules.

The department will continue to inspect CCR landfills and, under this rule, incorporate all requirements that meet nationwide landfill management standards for protection of human health and the environment. CCR materials contain contaminants like mercury, cadmium and arsenic. Without proper management, these contaminants can pollute waterways, ground water, drinking water, and the air. By creating Wisconsin rules that are at least as protective as the federal rule, the department will continue to address risks from improper disposal of CCR.

10. Analysis and Supporting Documents Used to Determine the Effect on Small Business or in Preparation of an Economic Impact Report: The proposed rule will impact four electric utility companies that are CCR landfill owners and operators. There are approximately 18 existing and new CCR landfill units under federal regulation, which when combined represent six solid waste landfill facilities under Wisconsin regulation. None of the electric utility companies meet the definition of a small business under s. 227.114(1), Wis. Stats.

11. Effect on Small Business (initial regulatory flexibility analysis): The rule is not likely to have an impact on small businesses. CCR landfills are operated by electric utilities that do not meet the definition of a small business under s. 227.114(1), Wis. Stats. Most of the changes in the proposed rule have already been implemented by the federal government and facilities have already complied with the federal rule. The proposed rule is modifying Wisconsin regulations to be consistent with portions of the federal rule to allow Wisconsin to apply for a CCR state permit program. Any additional cost as a result of this proposed rule will be related to a facility's plan preparation and review.

12. Agency Contact Person: Valerie Joosten, Department of Natural Resources, Northeast Region Headquarters, 2984 Shawano Ave., Green Bay, WI 54313; Valerie.Joosten@wisconsin.gov; (920) 662-5486

13. Place where comments are to be submitted and deadline for submission:

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Written comments may be submitted at the public hearings, by regular mail, or by email to:

Valerie Joosten
Department of Natural Resources
Northeast Region Headquarters
2984 Shawano Ave.
Green Bay, WI 54313
(920) 662-5486
Valerie.Joosten@wisconsin.gov

Comments may be submitted to the department contact person listed above or to DNRAdministrativeRulesComments@wisconsin.gov until the deadline given in the upcoming notice of public hearing. The notice of public hearing and deadline for submitting comments will be published in the Wisconsin Administrative Register and on the department's website, at <https://dnr.wi.gov/calendar/hearings/>. Comments may also be submitted through the Wisconsin Administrative Rules Website at <https://docs.legis.wisconsin.gov/code/chr/active>.

The consent of the Attorney General will be requested for the incorporation by reference of alternative design requirements. Under the proposed rule, requests for alternative designs for CCR landfills must include a demonstration that the alternative design meets the federal requirements located under 40 CFR part 257 Subpart D dated April 17, 2015.

RULE TEXT

SECTION 1. NR 500.03 (19) (Note), (26c), (26g), (26n), (26r), (26w), (26y), (60m), (76m), (106m), (121m), (152m), (197) (Note), (246m), and (254m) are created to read:

NR 500.03 (19) (Note): CCR is an industrial byproduct that may be beneficially used in a productive manner, as defined under s. NR 538.03 (10) which means the use of an industrial byproduct that meets all of the following criteria:

- (a) Provides a functional benefit.
- (b) Substitutes for the use of a virgin material that must be otherwise obtained.
- (c) Meets relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, is not used in excess quantities.

(26c) "CCR" means coal combustion residuals, including fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

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(26g) “CCR fugitive dust” means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

(26n) (a) “CCR landfill” means a landfill that receives CCR, including nonmetallic mining sites under s. 295.11 (6), Stats., that receive CCR, and any area of land or excavation that receives CCR that does not meet the definition of a beneficial use under s. NR 538.02 (2).

(b) “CCR landfill” does not include a CCR surface impoundment or municipal solid waste landfill that receives CCR.

(26r) “CCR surface impoundment” means a natural topographic depression, man-made excavation, or diked area that is designed to hold an accumulation of CCR and liquids, and the unit treats, stores or disposes of CCR.

(26w) (a) “CCR unit” means any CCR landfill, CCR surface impoundment, lateral expansion of a CCR landfill, or a combination of more than one of these units.

(b) “CCR unit” includes both new and existing units, unless otherwise specified.

(26y) “CCR well” means a designated well installed at a CCR landfill whose location and depth have been approved by the department specifically for monitoring purposes under Subtitle D.

(60m) “Destruction or adverse modification” means a direct or indirect alteration of critical habitat which appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat.

(76m) (a) “Existing CCR landfill” means a CCR landfill that receives CCR both before and after October 19, 2015.

(b) “Existing CCR landfill” includes a CCR landfill for which construction commenced prior to October 19, 2015, and receives CCR on or after October 19, 2015, where all of the following occurred:

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1. The landfill owner or operator obtained all federal, state, and local approvals or permits to begin physical construction.

2. The landfill had a continuous on-site, physical construction program that began prior to October 19, 2015.

(106m) “Hydraulic conductivity” means the rate at which water can move through a permeable medium and is also called the coefficient of permeability.

(121m) “Lateral expansion of a CCR landfill” means a horizontal expansion of the waste boundaries of an existing CCR landfill made after October 19, 2015.

(152m) (a) “New CCR landfill” means a CCR landfill or lateral expansion of a CCR landfill that first receives CCR after October 19, 2015.

(b) “New CCR landfill” includes a CCR landfill or lateral expansion of a CCR landfill that commences construction after October 19, 2015, where all of the following occurred:

1. The landfill owner or operator obtained all federal, state, and local approvals or permits to begin physical construction.

2. The landfill had a continuous on-site, physical construction program that began prior to October 19, 2015.

(197) Note: See EPA Publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Chapter 9 (<https://www.epa.gov/hw-sw846>) dated September 1986 for a discussion and examples of representative samples.

(246m) “Uppermost aquifer” means the geologic formation nearest the natural ground surface of a CCR landfill capable of yielding usable quantities of groundwater to wells or springs, as well as lower aquifers that are hydraulically interconnected with the uppermost aquifer within a CCR landfill’s property boundary, as measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season.

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(254m) “Washout” means the carrying away of solid waste by waters of the regional flood.

SECTION 2. NR 500.035 is created to read:

NR 500.035 CCR landfills requirements. (1) The CCR landfill requirements included in chs. NR 500 to 538 apply to owners or operators of new and existing CCR landfills, including any lateral expansions of new or existing CCR landfills that dispose or otherwise engage in solid waste management of CCR generated from the combustion of coal at electric utilities and independent power producers. Unless otherwise provided in chs. NR 500 to 538, these requirements also apply to disposal units located off-site of the electric utility or independent power producer. The CCR landfill requirements in chs. NR 500 to 538 also apply to any CCR disposal practice that does not meet the definition of a beneficial use of CCR.

(2) The CCR landfill requirements included in chs. NR 500 to 538 do not apply to any of the following:

(a) CCR landfills that have ceased receiving CCR prior to October 19, 2015.

(b) Electric utilities or independent power producers that have ceased producing electricity prior to October 19, 2015.

(c) Wastes, including fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated at facilities that are not part of an electric utility or independent power producer, such as manufacturing facilities, universities, and hospitals.

(d) Fly ash, bottom ash, boiler slag, and flue gas desulfurization materials, generated primarily from the combustion of fuels and fossil fuels other than coal, for the purpose of generating electricity unless the fuel burned consists of more than 50 percent coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal.

(e) Practices that meet the definition of a beneficial use of CCR.

(f) CCR placement at active or abandoned underground or surface coal mines.

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(g) Municipal solid waste landfills that receive CCR.

SECTION 3. NR 500.05 (intro.) is amended to read:

NR 500.05 General submittal requirements. Unless otherwise specified, all submittals for review and approval of any initial site report, feasibility report, plan of operation site investigation report, remedial action options report, construction documentation report, or closure plan, or any modifications to those plans, shall include all of the following:

SECTION 4. NR 500.08 (4) is amended to read:

NR 500.08 (4) EXEMPTIONS FROM SOLID WASTE RULES. Exemptions from the requirements of chs. NR 500 to 538 may be granted in writing by the department in special cases except as otherwise provided. A person may apply for an exemption by providing the department with a written request along with the appropriate documentation ~~which that~~ demonstrates that the proposal will not cause environmental pollution as defined ~~in under~~ s. 299.01 (4), Stats. The department shall take into account such factors as the population of the area being served, the amount of waste being generated, the geologic and hydrogeologic conditions at the facility, the design of the facility, the operational history of the facility, the physical and chemical characteristics of the waste, and any other information ~~which that~~ may be appropriate. The department shall review and make a written determination on the exemption request within 65 business days after receipt of a complete request and the appropriate review fee under ch. NR 520 unless a different time period is provided by law. An exemption may not be granted if it will result in noncompliance with the minimum federal requirements under Subtitle D.

SECTION 5. NR 504.02 (1) is renumbered NR 512.02 (1) (a) and amended to read:

NR 504.02 Applicability. (1) (a) Except as provided in par. b and except as otherwise provided, this chapter governs all landfills as defined ~~in under~~ s. 289.01 (20), Stats., ~~except landspreading~~ and all CCR landfills and expansions as defined under s. NR 500.03 (26n), and (121m).

(b) This chapter does not govern any of the following:

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1. Landspreading facilities regulated under ch. NR 518, small demolition waste landfills regulated under ch. NR 503, hazardous waste facilities as defined ~~in~~under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679; ~~metallie~~.

2. Metallic mining operations for nonferrous minerals as defined ~~in~~under s. 293.01 (9), Stats., and regulated under ch. NR 182; ~~and metallie~~.

3. Metallic mining operations for ferrous minerals as defined ~~in~~under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined ~~in~~under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 6. NR 504.10 (intro.) is amended to read:

NR 504.10 Alternative design criteria for landfills accepting high volume industrial wastes. This section applies to landfills designed principally for high volume industrial waste, wood residue and minor amounts of other wastes as approved by the department. This section applies to all new landfills and to the expansion of existing landfills for which the plan of operation was approved after February 1, 1988. This section also applies to new and existing CCR landfills and lateral expansions of a CCR landfill.

SECTION 7. NR 504.10 (3) (g) is created to read:

NR 504.10 (3) (g) For new and existing CCR landfills and any lateral expansion of a CCR landfill, a demonstration that the alternative design meets the federal requirements located under 40 CFR part 257 Subpart D dated April 17, 2015 (80 FR 21468), as amended at 83 FR 36451, July 30, 2018.

Note: The code of federal regulations may be obtained at www.ecfr.gov. Copies of 40 CFR part 257 Subpart D dated April 17, 2015 (80 FR 21468), as amended at 83 FR 36451, July 30, 2018 are available for inspection at the offices of the department of natural resources and the legislative reference bureau.

SECTION 8. NR 504.12 is created to read:

NR 504.12 Minimum design and construction criteria for CCR landfills.

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(1) **APPLICABILITY.** In addition to ss. NR 504.04 to 504.10, applicable to all landfills or landfills accepting high volume industrial waste, this section includes design criteria that is applicable to the construction of a new or existing CCR landfill or a lateral expansion of a CCR landfill.

(2) **RUN-ON AND RUN-OFF CONTROLS.** An existing or new CCR landfill and any lateral expansion of a CCR landfill shall be designed, constructed, operated, and maintained with a run-off and run-on control system in accordance with the requirements under s. NR 504.09 (1) (f) and (g) and all of the following:

(a) A run-on control system shall prevent flow onto the active portion of the CCR unit during the peak discharge from a 24-hour, 25-year storm.

(b) A run-off control system from the active portion of the CCR unit shall collect and control, at a minimum, the water volume resulting from a 24-hour, 25-year storm.

(3) **LINER DESIGN.** (a) A new CCR landfill and a lateral expansion of a CCR landfill shall be designed, constructed, operated, and maintained with a composite liner that meets the requirements under s. NR 504.06 (2) and (3) or s. NR 504.06 (7) and a leachate collection and removal system that meets the requirements under s. NR 504.06 (5) and all of the following:

1. The leachate collection and removal system shall be designed, constructed, operated, and maintained to limit the leachate head level on the liner to one foot or less.

2. The leachate collection and removal system shall be constructed of materials that are all of the following:

a. Chemically resistant to the CCR and any non-CCR waste managed in the CCR unit and the leachate expected to be generated.

b. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and equipment used at the CCR unit.

3. The leachate collection and removal system shall be designed and operated to minimize clogging during the active life and during the long-term care of the landfill.

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4. A liner that utilizes a GCL and soil barrier layer in accordance with s. NR 504.06 (7) shall be designed to have a liquid flow rate no greater than the liquid flow rate through 2 feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The liquid flow rate comparison shall be made using the following equation, which is derived from Darcy's Law for gravity flow through porous media:

$$Q/A = q = k (h/t + 1)$$

Where:

Q = flow rate (cubic centimeters / second).

A = surface area of the liner (squared centimeters).

Q = flow rate per unit area (cubic centimeters / second / squared centimeter).

K = hydraulic conductivity of the liner (centimeters / second).

H = hydraulic head above the liner (centimeters).

T = thickness of the liner (centimeters).

(b) A new CCR landfill or a lateral expansion of a CCR landfill shall be designed and constructed with a subbase grade that is located no less than 5 feet above the upper limit of the uppermost aquifer, or shall demonstrate that there will not be an intermittent recurring or sustained hydraulic connection between any portion of the base of the CCR landfill and the uppermost aquifer for a CCR landfill due to normal fluctuations in groundwater elevations, including the seasonal high water table.

Note: A new CCR landfill or lateral expansion of a CCR landfill is also required to comply with s. NR 504.06 (2) (b) or s. NR 504.06 (4) for zone-of-saturation landfills. The definition of an uppermost aquifer for a CCR landfill can be found under s. NR 500.03 (246m).

(c) A new CCR landfill or a lateral expansion of a CCR landfill may not be constructed over a closed CCR surface impoundment.

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(4) FINAL COVER SYSTEM. (a) A new or existing CCR landfill or a lateral expansion of a CCR landfill shall be designed and constructed with a final cover system that meets the requirements under s. NR 504.07.

(b) The owner or operator of a new or existing CCR landfill or a lateral expansion of a CCR landfill may propose an alternative final cover system design within a written closure plan in accordance with s. NR 504.10 and all of the following:

1. The permeability of the final cover system shall be less than or equal to the permeability of any bottom liner system or natural subsoils present or shall be no greater than 1×10^{-5} cm/sec, whichever is less.

2. The design of the final cover system shall include an infiltration layer that achieves an equivalent reduction in infiltration as the layers specified under s. NR 504.07 (4).

3. The design of the final cover system shall include an erosion layer that provides equivalent protection from wind or water erosion as the topsoil layer specified under s. NR 504.07 (7).

4. The disruption of the integrity of the final cover system shall be minimized through a design that accommodates settling and subsidence.

SECTION 9. NR 506.02 (1) is renumbered NR 506.02 (1) (a) and amended to read:

NR 506.02 Applicability. (1) (a) Except as provided in par. b and except as otherwise provided, this chapter governs all solid waste disposal facilities as defined ~~in~~ under s. 289.01 (35), Stats., ~~except hazardous~~ and all CCR landfills and expansions as defined under s. NR 500.03 (26n) and (121m).

(b) This chapter does not govern any of the following:

1. Hazardous waste facilities as defined ~~in~~ under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679; ~~metallie,~~

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2. Metallic mining operations for nonferrous minerals as defined ~~in~~under s. 293.01 (9), Stats., and regulated under ch. NR 182; ~~and metallic.~~

3. Metallic mining operations for ferrous minerals as defined ~~in~~under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined ~~in~~under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 10. NR 506.08 (intro.) is amended to read:

NR 506.08 Closure requirements. Any person who maintains or operates a landfill, except a CCR landfill regulated under s. NR 506.083, or who permits use of property for such purpose shall, when the fill area or portion thereof reaches final grade, or when the department determines that closure is required, cease to accept solid waste and close the landfill or portion thereof in accordance with the plan approval issued by the department and all of the following minimum practices unless otherwise approved by the department in writing:

SECTION 11. NR 506.083 and 506.084 are created to read:

NR 506.083 Closure requirements for CCR landfills. Closure of a new or existing CCR landfill or a lateral expansion of a CCR landfill shall be performed in accordance with the plan of operation approval issued by the department and all of the following:

(1) NOTIFICATION PROCEDURES. (a) No later than the date the owner or operator initiates closure of a CCR landfill under sub. (2), the owner or operator shall notify the department in writing of the intent to close the landfill and place a copy of the notification in the facility's operating record.

(b) Within 30 days following completion of closure of a CCR landfill under sub. (3), the owner or operator shall prepare and submit a notification of closure to the department and place a copy in the facility's operating record. The notification shall include the certification required under s. NR 516.04 (3) (d).

(2) INITIATION OF CLOSURE ACTIVITIES. (a) The owner or operator shall commence closure of the CCR landfill no later than 30 days after either of the following occur:

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1. The date of final receipt of CCR waste or any non-CCR waste stream.
2. Final removal of CCR from the CCR landfill for the purpose of beneficial use of CCR.

(b) The owner or operator may delay commencing closure up to 2 years from the last receipt of waste or the last removal of CCR material for the purpose of beneficial use upon written approval by the department if the owner or operator demonstrates that there is a reasonable likelihood that the CCR landfill will accept wastes in the foreseeable future or will remove CCR from the landfill for the purpose of beneficial use. The delay shall be requested in writing to the department as a modification to the written closure plan required under s. NR 514.07 (10) (c) and include documentation that the CCR landfill will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The request shall include all of the following:

1. Information documenting that the CCR landfill has remaining storage or disposal capacity or that the CCR landfill may have CCR removed for the purpose of beneficial use.
2. Information demonstrating that there is a reasonable likelihood that the CCR landfill will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR may be removed for the purpose of beneficial use. Any portion of the landfill that will not receive additional CCR or have CCR removed for a period exceeding 6 months shall be covered with one foot of fine grained intermediate cover or other material approved by the department. The narrative shall include a best estimate as to when the CCR landfill will resume receiving CCR or non-CCR waste streams.

3. The following statement signed by the owner or operator 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."

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(c) Prior to the end of a 2-year delay for commencing closure, the owner or operator may request a subsequent 2-year delay under sub. (2) (b).

(d) For purposes of this section, closure of the CCR landfill has commenced once the owner or operator has ceased placing waste and completes any of the following actions or activities:

1. Taken any steps necessary to implement the approved closure plan.
2. Applied to the department or another agency for a permit or modification related to closure.
3. Taken any steps necessary to comply with any department or other agency requirements that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR landfill.

(3) COMPLETION OF CLOSURE ACTIVITIES. (a) The owner or operator shall complete closure of the CCR landfill within 6 months of commencing closure activities.

(b) The timeframe for completing closure of a CCR landfill may be extended for a one-year period upon written department approval if the owner or operator demonstrates that it was not feasible to complete closure of the CCR landfill within the required timeframe due to factors beyond the owner or operator's control. No more than a total of 2 one-year extensions may be obtained for any CCR landfill. An owner or operator shall request the time extensions to the department in writing as modifications to the approved closure plan and include a narrative discussion providing the basis for additional time. The time extension request shall include the following statement signed by the owner or operator 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 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."

(4) DEED NOTATION. (a) Following closure of a CCR landfill, the owner or operator shall, within 60 days after closure is complete, record an affidavit with the register of deeds to

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notify any potential purchaser of the property that the land has been used as a landfill and its use is restricted to prevent disturbing the integrity of the final cover, liner or any other components of the containment system or the function of the monitoring systems.

(b) A copy of the affidavit shall be submitted to the department and placed in the facility's operating record within 30 days of recordation.

(5) CLOSURE BY REMOVAL OF CCR. An owner or operator may close a CCR landfill by removing and decontaminating all areas affected by releases from the CCR landfill. CCR removal and decontamination of the CCR landfill are complete when constituent concentrations throughout the CCR landfill and any areas affected by releases from the CCR landfill have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard for constituents listed under s. NR 140.10, Table 1. A landfill closed by removal and decontamination of CCR is not subject to the deed notation requirement under s. NR 506.08 (4) and long-term care requirements.

(6) ALTERNATIVE CLOSURE REQUIREMENTS. An owner or operator that is subject to closure for failure to demonstrate compliance with locational criteria under s. NR 514.045 (5) may continue to receive CCR in the CCR landfill provided the owner or operator meets all of the following:

(a) The owner or operator of the CCR landfill certifies that the CCR shall continue to be managed in that CCR unit due to the absence of an alternative disposal capacity both on-site and off-site of the facility. The owner or operator of the CCR unit shall document that all of the following conditions have been met:

1. No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this subdivision.

2. The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subdivision lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator shall arrange to use the capacity as soon as feasible.

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3. The owner or operator shall remain in compliance with all other operating requirements under ch. NR 506 and the requirements of chs. NR 507 and 508, including the requirement to conduct any necessary corrective action required under s. NR 508.06 (5).

4. The owner or operator shall prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.

(b) Once alternative capacity is available, the CCR landfill shall cease receiving CCR and initiate closure following the timeframes under subs. (2) and (3).

(c) If no alternative capacity is identified within 5 years after the initial certification, the CCR landfill shall cease receiving CCR and close under subs. (2) and (3).

(d) An owner or operator that closes in accordance with this section shall complete and submit to the department the notices and progress reports in accordance with all of the following:

1. Within 6 months of becoming subject to closure, the owner or operator shall prepare and submit a notification of intent to comply with the alternative closure requirements of this section. The notification shall describe why the CCR landfill qualifies for the alternative closure provisions of this section, in addition to providing the required documentation and certifications.

2. The owner or operator shall prepare the periodic progress reports required under par. (a) 3., in addition to describing any problems encountered and a description of the actions taken to resolve the problems. The annual progress reports shall be completed according to the following schedule:

a. The first annual progress report shall be prepared no later than 13 months after completing the notification of intent to comply with the alternative closure requirements.

b. The second annual progress report shall be prepared no later than 12 months after completing the first annual progress report. Additional annual progress reports shall be prepared within 12 months of completing the previous annual progress report.

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3. The notification and progress reports shall be placed in the written operating record and posted on a publicly accessible internet site under s. NR 506.17 (2) and (3).

NR 506.084 Long-term care requirements for CCR landfills. Long-term care of a new or existing CCR landfill and a lateral expansion of a CCR landfill shall be performed in accordance with the plan of operation approval issued by the department and all of the following:

(1) LONG-TERM CARE MAINTENANCE REQUIREMENTS. Following closure of the CCR landfill, the owner or operator shall conduct long-term care for the CCR landfill in accordance with the approved long-term care plan.

(2) LONG-TERM CARE PERIOD. Long-term care of a new or existing CCR landfill or a lateral expansion of a CCR landfill shall be performed in accordance with the plan of operation, with perpetual long-term care responsibility under s. 289.41 (1m) (c), Stats., and all of the following:

(a) The long-term care period for a CCR landfill is 40 years for purposes of record keeping under s. NR 506.17 (2) and proof of owner financial responsibility under s. NR 520.05.

(b) No later than 60 days following the end of the 40-year long-term care period, a notification shall be submitted to the department and placed in the written operating record. The notification shall verify that the landfill is complying with the approved long-term care plan and long-term care requirements. The notification shall include a certification by a professional engineer.

SECTION 12. NR 506.17 is renumbered 506.17 (1).

SECTION 13. NR 506.17 (1) (title) is created to read:

NR 506.17 (1) (title) MUNICIPAL SOLID WASTE LANDFILL WRITTEN OPERATING RECORD.

SECTION 14. NR 506.17 (2), (3), and (4) are created to read:

NR 506.17 (2) CCR LANDFILL WRITTEN OPERATING RECORD. The owner or operator of a new or existing CCR landfill or a lateral expansion of a CCR landfill shall maintain a written

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operating record at the landfill during the operating life and 40-year long-term care period of the landfill, unless an alternative timeframe is specified under this section. The written operating record shall be maintained in accordance with all of the following:

(a) The department may approve an alternate location for maintaining the record. The alternate location of the record shall be identified within the plan of operation.

(b) An owner or operator of more than one CCR landfill may comply with the requirements of this section in one recordkeeping system provided the system identifies each file by the name of each CCR landfill.

(c) Documentation shall be placed into the written operating record as it becomes available.

(d) Documentation shall be submitted to the department upon request.

(e) The written operating record shall contain the plan of operation, plan modifications, construction documentation, department approvals, annual reports, inspection records, monitoring and corrective action records, and notifications to the department.

(f) If records are developed within 5 years of the end of the 40-year long-term care period, the records shall be maintained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study.

(g) Retention by the owner or operator of a new or existing CCR landfill or a lateral expansion of a CCR landfill of the following documents is only required for 5 years after the submittal date to the department:

1. Annual reports required under s. NR 506.20 (4).
2. Documentation recording the results of the periodic inspections required under s. NR 506.20 (2).

(3) CCR LANDFILL PUBLICLY ACCESSIBLE INTERNET SITE. Each owner or operator of a new or existing CCR landfill or a lateral expansion of a CCR landfill shall maintain a publicly

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accessible internet site titled “CCR Rule Compliance Data and Information” in accordance with all of the following:

(a) An owner or operator of more than one CCR landfill may choose to comply with the requirements of this section by using the same internet site for multiple CCR landfills provided the internet site clearly delineates information by the name and license number.

(b) The information required to be posted to the internet site under par. (d) shall be made available on the internet site to the public for at least 5 years following the date on which the information was first posted to the internet site.

(c) The information required to be posted to the internet site under par. (d) shall be posted to the internet site within 30 days of placing the information in the operating record.

(d) The internet site shall contain all of the following information, if applicable:

1. The plan of operation modification documents required under s. NR 514.05 (1), any subsequent modifications to the plans required under s. NR 514.07 (1), and the department’s decision documents.

2. Liner construction documentation and the department’s decision documents for new CCR landfills.

3. The annual groundwater monitoring and corrective action report.

4. Documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices.

5. The notification to the department of the establishment of an assessment monitoring program under ch. NR 508.

6. The notification to the department of a return to a detection monitoring program.

7. The notification to the department of the initiation of an assessment of corrective measures requirements under ch. NR 508.

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8. The completed assessment report of corrective measures and the department's response.

9. Documentation prepared by the owner or operator recording any public comments received during the public meeting for the corrective measures assessment.

10. The semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report, except that the selection of remedy report shall be maintained until the remedy has been completed.

11. The notification to the department of the completion of the remedy.

(e) For CCR landfills with a plan of operation approved after the effective date of this section [LRB inserts date] the internet site shall also contain all of the following:

1. The feasibility report and department's decision document.

2. The plan of operation and department's decision document.

3. Any modifications to the feasibility determination or plan of operation approval and the department's decision documents.

(4) CCR LANDFILL NOTIFICATION REQUIREMENTS. (a) A notification required under ch. NR 507 or 508 or this chapter shall be sent to the department's waste and materials management program before the close of business on the day the notification is required to be completed. For purposes of this section, before the close of business means the notification must be postmarked or sent by email. If a notification deadline falls on a weekend or state holiday, the notification deadline is automatically extended to the next business day.

(b) Notifications under par. (a) may be combined provided the deadline requirement for each notification is met.

(c) Unless otherwise required, a notification under par. (a) shall be sent to the department within 30 days of placing in the landfill's written operating record.

SECTION 15. NR 506.20 is created to read:

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NR 506.20 Inspection and reporting requirements for a CCR landfill. (1) PERIODIC INSPECTIONS. A new or existing CCR landfill or a lateral expansion of a CCR landfill shall be inspected in accordance with all of the following:

(a) A person trained to recognize appearances or conditions of landfill structures shall do all of the following:

1. At intervals not exceeding 7 days after initial receipt of CCR by the CCR landfill, inspect for any appearances of actual or potential structural weakness and other conditions that are disrupting or have the potential to disrupt the operation or safety of the CCR landfill.

2. At least weekly during the active operating life of the landfill, shall conduct a visual inspection to assess the effectiveness of fugitive dust control measures as required under s. NR 514.07 (10) (a) 3.

(b) The owner or operator of the CCR landfill shall maintain the results of the periodic inspections under par. (a) in the facility's written operating record for a period of 5 years.

(2) ANNUAL INSPECTIONS BY A LICENSED PROFESSIONAL ENGINEER. (a) A licensed professional engineer shall annually inspect a new or existing CCR landfill or a lateral expansion of a CCR landfill to ensure that the design, construction, operation, and maintenance of the CCR landfill is consistent with recognized and generally accepted good engineering standards. The inspection shall be performed no later than December 31 of each year. The inspection shall, at a minimum, include all of the following:

1. A review of available information regarding the status and condition of the CCR landfill, including files available in the operating record, such as the results of inspections under sub. (1) (a) 1., and results of previous annual inspections.

2. A visual inspection of the CCR landfill to identify signs of distress or malfunction of the CCR landfill.

(b) The licensed professional engineer conducting the inspection under par. (a) shall prepare a report following each inspection that addresses all of the following:

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1. Any changes in geometry of the structure since the previous annual inspection.
2. The approximate volume of CCR contained in the CCR unit at the time of the inspection.
3. Any appearances of an actual or potential structural weakness of the CCR landfill, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR landfill.
4. Any other changes that may have affected the stability or operation of the CCR landfill since the previous annual inspection.
5. Any deficiencies or releases identified during an inspection and documentation detailing the corrective measures taken. The owner or operator shall remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(3) ANNUAL REPORT. The owner or operator of a new or existing CCR landfill or a lateral expansion of a CCR landfill shall prepare and submit an annual report to the department and place the report in the facility's operating record by January 31 of each year. The annual report shall include all of the following components:

- (a) An annual CCR fugitive dust control report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken.
- (b) The annual inspection report required under sub. (3) (b).
- (c) The annual groundwater monitoring and corrective action report required under s. NR 507.15 (3) (m).
- (d) The leachate pipe cleaning and inspection report required under s. NR 506.07 (5) (g).

SECTION 16. NR 507.02 (1) is renumbered 507.02 (1) (a) and amended to read:

NR 507.02 Applicability. (1) (a) Except as provided in par. (b) and except as otherwise provided, this chapter governs all environmental monitoring for solid waste disposal facilities as

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defined ~~by~~ under s. 289.01 (35), Stats., ~~except hazardous~~ and all CCR landfills and expansions as defined under s. NR 500.03 (26n) and (121m).

(b) This chapter does not govern any of the following:

1. Hazardous waste facilities as defined ~~in~~ under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679; ~~metallic.~~

2. Metallic mining operations for nonferrous minerals as defined ~~in~~ under s. 293.01 (9), Stats., and regulated under ch. NR 182; ~~and metallic.~~

3. Metallic mining operations for ferrous minerals as defined ~~in~~ under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined ~~in~~ under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 17. NR 507.15 (3) is created to read:

NR 507.15 (3) CCR LANDFILLS. In addition to the detection groundwater monitoring system required under s. NR 507.19, the owner or operator of a CCR landfill that accepted CCR on or after April 17, 2015 shall also submit a plan establishing a separate CCR groundwater monitoring system for the purpose of monitoring groundwater quality in the uppermost aquifer in accordance with this chapter. The plan shall be in a feasibility report for applicants proposing to establish a new CCR landfill or lateral expansion of a CCR landfill, or in a modification to the plan of operation in accordance with s. NR 514.045 for new or existing CCR landfills with an approved plan of operation.

(a) The CCR groundwater monitoring system shall consist of a sufficient number of wells, installed at appropriate locations and depths, as approved by the department, adequate to yield groundwater samples from the uppermost aquifer that accurately represent the quality of both background groundwater that has not been affected by leakage from a CCR landfill and groundwater passing the waste boundary of the CCR landfill. The downgradient monitoring system shall be installed to ensure detection of groundwater contamination in the uppermost aquifer, including all known or suspected contaminant pathways.

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(b) The number, spacing, and depths of monitoring wells submitted to the department as part of the CCR groundwater monitoring plan shall be determined based upon site-specific technical information that shall include thorough characterization of aquifer thickness, groundwater flow rate, and groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow. The monitoring systems shall also take into account the saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities.

(c) The groundwater monitoring system plan shall include the minimum number of monitoring wells necessary to meet the performance standards specified under par. (a), based on the site-specific information specified under par. (b). The groundwater monitoring system plan shall contain all of the following:

1. A minimum of one upgradient and 3 downgradient monitoring wells to be designated as CCR wells.

2. Additional monitoring wells as necessary to accurately represent the quality of background groundwater in the uppermost aquifer that has not been affected by leakage from the CCR landfill and the quality of groundwater passing the waste boundary of the CCR landfill.

(d) Monitoring wells shall be designed and installed in accordance with s. NR 507.06 and regularly inspected in accordance with s. NR 507.13. All monitoring wells, piezometers, and other measuring, sampling, and analytical devices shall be operated and maintained so that the devices perform to the design specifications throughout the life of the monitoring program.

(e) The documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be performed in accordance with s. NR 507.14 and applicable requirements under ch. NR 141. This includes submission of all required forms to the department in the timeframes specified.

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(f) The owner or operator of any new or existing CCR landfill shall submit a CCR sampling plan to the department in accordance with s. NR 507.16 and the requirements under s. NR 140.16. The CCR groundwater monitoring sampling plan shall include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality in the uppermost aquifer at the background and downgradient CCR wells. The sampling plan shall be implemented as approved in writing by the department.

(g) The groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure all required monitoring parameters under ch. NR 507, Appendix 1 in groundwater samples. The CCR landfill owner or operator shall obtain and analyze samples in accordance with the approved sampling plan under par. (f) and the requirements under s. NR 507.17.

(h) In addition to the field measurements required under s. NR 507.17 (1), the groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator of the CCR landfill shall determine the rate and direction of groundwater flow each time groundwater is sampled and report the result to the department in accordance with s. NR 507.26. Groundwater elevations in wells that monitor the same CCR landfill shall be measured within a timeframe short enough to avoid temporal variations in groundwater flow, which could preclude accurate determination of groundwater flow rate and direction.

(i) The owner or operator of the CCR landfill shall establish baseline groundwater quality for each CCR well and for each of the constituents required in ch. NR 507 Appendix I, Tables 1A and 3 for CCR wells and the approved groundwater monitoring program in accordance with s. NR 507.18.

(j) The owner or operator of the CCR landfill shall measure total recoverable metals concentrations in measuring groundwater quality. Measurement of total recoverable metals includes both the particulate fraction and dissolved fraction of metals in natural waters. To ensure this, groundwater samples shall not be field filtered prior to analysis.

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(k) The owner or operator of the CCR landfill shall notify the department in writing within 90 days of completing sampling and analysis at any CCR well when a groundwater standard at the point of standards application has been attained or exceeded in accordance with s. NR 507.30.

(L) The owner or operator of a CCR landfill shall conduct a detection groundwater monitoring program at all CCR groundwater monitoring wells consistent with the requirements of this section and s. NR 507.19. A detection groundwater monitoring program shall include groundwater monitoring for all constituents appropriate for CCR wells as listed under ch. NR 507 Appendix I, Tables 1A and additional parameters if approved by the department in writing and in accordance with all of the following:

1. The minimum monitoring frequency for the constituents approved by the department as part of the detection groundwater monitoring program shall be semi-annual during the active life of the CCR landfill and the post-closure period. For existing and new CCR landfills and all lateral expansions of CCR landfills, baseline groundwater quality shall be established at each CCR monitoring well in accordance with s. NR 507.18. This includes the collection of a minimum of 8 independent groundwater quality samples for each CCR well, each of which shall be analyzed for all constituents appropriate for CCR landfills as listed under ch. NR 507 Appendix I, Tables 1A and 3 and any additional parameters approved by the department in writing.

2. The number and methodology of groundwater quality samples collected and analyzed for each CCR well during subsequent semiannual sampling events shall be consistent with the approved sampling plan under s. NR 507.16, and shall account for any unique characteristics of the site. The CCR landfill owner or operator shall inform the department in accordance with s. NR 507.26 of any CCR well that purges dry, is damaged or obstructed, or in any way is rendered such that a sample was unable to be collected from the well during a scheduled sampling event and shall propose remedial actions to correct the problem prior to the next sampling event.

3. The owner or operator of the CCR landfill shall notify the department and respond in accordance with s. NR 507.30 when a groundwater standard at the point of standards application has been attained or exceeded at any CCR well. This response includes the establishment of an

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assessment monitoring program meeting the requirements under s. NR 508.06, if determined by the department as appropriate and necessary.

(m) For all CCR landfills, the owner or operator shall prepare an annual groundwater monitoring and corrective action report for submittal to the department no later than January 31 of the year following the calendar year a groundwater monitoring system has been approved by the department, and annually thereafter. For the preceding calendar year, the annual report shall document the status of the groundwater monitoring and any corrective action program implemented at the CCR landfill, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. At a minimum, the annual groundwater monitoring and corrective action report shall contain all of the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR landfill and all upgradient and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the CCR landfill.

2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.

3. In addition to all the monitoring data obtained under sub. (L), a summary including the number of groundwater samples that were collected for analysis for each upgradient and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.

4. A narrative discussion of any transition between monitoring programs including the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying any constituents detected above ch. NR 140 standards.

5. Any other information required to be included in the annual report.

(n) The owner or operator of a CCR landfill shall place all submittals, correspondence, and approvals from the department regarding environmental monitoring or corrective action, as

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they become available, into the facility's operating record required under s. NR 506.17 (2).

Records included in the operating record shall include all of the following:

1. The annual groundwater monitoring and corrective action report.
2. Documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices.
3. The plan of operation or plan of operation modification request and the department's approval of the groundwater monitoring system.
4. The notification to the department of the establishment of an assessment monitoring program under s. NR 508.
5. The notification to the department of a return to a detection monitoring program.
6. The notification to the department of the initiation of an assessment of corrective measures requirements under s. NR 508.
7. The completed assessment report of corrective measures and the department's response.
8. Documentation prepared by the owner or operator recording any public comments received during the public meeting for the corrective measures assessment.
9. The semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report, except that the selection of remedy report shall be maintained until the remedy has been completed.
10. The notification to the department of the completion of the remedy.

SECTION 18. NR 507.18 (5) is created to read:

NR 507.18 (5) BASELINE GROUNDWATER QUALITY SAMPLING AT CCR WELLS. (a)
Baseline groundwater quality shall be established by the owner or operator of the CCR landfill at all CCR wells installed outside the proposed limits of filling to evaluate groundwater quality in

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the uppermost aquifer beneath the CCR landfill as provided in par. (b). Samples shall be analyzed for each monitoring parameter as indicated under ch. NR 507 Appendix I, Tables 1A and 3 for detection and baseline monitoring for CCR wells.

(b) The owner or operator shall obtain, analyze, and submit a minimum of 8 groundwater quality samples from each CCR well to the department as part of the plan of operation modification required under s. NR 507.15 (3) to determine baseline groundwater quality for the parameters required under this subsection.

(c) The department may not approve a proposed CCR landfill at a location where a preventive action limit or enforcement standard adopted under s. NR 140.10 or s. NR 140.12 has been attained or exceeded in the baseline monitoring sampling results unless the department grants an exemption to those standards in accordance with s. NR 140.28 as part of a CCR landfill feasibility or plan of operation approval under s. NR 507.15 (3).

(d) A preventive action limit for lithium shall be established by the department based on the baseline groundwater quality at each CCR well in accordance with s. NR 140.20 set at the background water quality plus 3 standard deviations or 9 micrograms per liter, whichever is higher.

SECTION 19. NR 507 Appendix I Table 1A is created to read:

**NR 507 APPENDIX I BASELINE AND DETECTION MONITORING
REQUIREMENTS**

Table 1A

DETECTION GROUNDWATER MONITORING FOR CCR WELLS AT CCR LANDFILLS

Waste Type	Detection Parameters ¹	Monitoring Frequency
Coal combustion residuals	Alkalinity Boron Calcium Chloride Fluoride Field conductivity (at 25°C) Field pH Field temperature Groundwater elevation	Semi-annual

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	Hardness Total Dissolved Solids (TDS) Sulfate	
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¹ Groundwater samples collected at CCR wells must be unfiltered.

SECTION 20. NR 507 Appendix I Table 2 is amended to read:

**NR 507 APPENDIX I BASELINE AND DETECTION MONITORING
REQUIREMENTS**

Table 2

**DETECTION GROUNDWATER MONITORING FOR LANDFILLS ACCEPTING
WASTE TYPES OTHER THAN MUNICIPAL SOLID WASTE**

Waste Type	Detection Parameters	Frequency for All Wells
Paper mill sludge	Ammonia nitrogen Alkalinity Chloride COD Field conductivity (at 25°C) Field pH Field temperature Groundwater elevation Hardness Nitrate + Nitrite (as N) Sulfate	Semi-annual
Fly or bottom ash ¹	Alkalinity Boron COD Field conductivity (at 25°C) Field pH Field temperature Groundwater elevation Hardness Sulfate	Semi-annual
Foundry waste	Alkalinity COD Field conductivity (at 25°C) Field pH Field temperature Fluoride Groundwater elevation Hardness Sodium	Semi-annual
Demolition waste	Demolition monitoring requirements are listed in ch. NR 503	

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Other solid waste	As specified in writing by the department
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¹ Detection monitoring parameters apply to all wells monitoring CCR landfills that are not defined as CCR wells under NR 500.03 (26y).

SECTION 21. NR 507 Appendix I Table 3 is repealed and recreated to read:

NR 507 APPENDIX I BASELINE AND DETECTION MONITORING REQUIREMENTS

Table 3

BASELINE AND ASSESSMENT GROUNDWATER MONITORING PUBLIC HEALTH AND WELFARE PARAMETERS

ALL WELLS	Additional Parameters for Subtitle D Wells	Additional Parameters for CCR Wells
Arsenic Barium Cadmium Chromium Copper Fluoride Lead Manganese Mercury Nitrate + Nitrite (as N) Selenium Silver Sulfate Zinc	Antimony Beryllium Cobalt Nickel Thallium Vanadium	Antimony Beryllium Cobalt Lithium Molybdenum Thallium Ra-226 and Ra-228, combined ¹

¹ The maximum contaminant level (MCL) for combined radium is 5 pCi/L under s. NR 809.50(1)(a) Wis. Adm. Code.

SECTION 22. NR 508.01 is amended to read:

NR 508.01 Purpose. The purpose of this chapter is to establish procedures for responding to a groundwater standard ~~which~~ that is attained or exceeded at any groundwater monitoring well at a solid waste facility and for conducting assessment monitoring at Subtitle D wells and CCR wells. This chapter is adopted under ch. 289, Stats., and s. 227.11, Stats.

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SECTION 23. NR 508.02 (1) is amended to read:

NR 508.02 Applicability. (1) Except as otherwise provided, this chapter governs all solid waste facilities as defined ~~by~~under s. 289.01 (35), Stats., and including CCR landfills and expansions as defined under s. NR 500.03 (26n) and (121m), except hazardous waste facilities as defined ~~in~~under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679; metallic mining operations for nonferrous minerals as defined ~~in~~under s. 293.01 (9), Stats., and regulated under ch. NR 182; and metallic mining operations for ferrous minerals as defined ~~in~~under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined ~~in~~under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 24. NR 508.06 is created to read:

NR 508.06 Responses when a groundwater standard is attained or exceeded at a CCR well.

(1) NOTIFICATION AND CONFIRMATION. If a PAL, ACL, or ES is attained or exceeded at a CCR well according to s. NR 140.14 and the value is confirmed, the owner or operator of the CCR landfill shall continue detection monitoring in accordance with s. NR 507.19 and shall respond in accordance with all of the following requirements:

- (a) The owner or operator shall notify the department in accordance with s. NR 507.30.
- (b) The owner or operator shall respond in accordance with s. NR 140.24 or 140.26.
- (c) The owner or operator may demonstrate that a reported value represents a false exceedance of a groundwater standard in accordance with s. NR 507.28 (3). If the department does not concur with the written demonstration within 30 days after receipt of the demonstration, the owner or operator shall begin assessment monitoring in accordance with this subsection. If the department concurs within 30 days after receipt of the demonstration, the owner or operator is not required to begin assessment monitoring.

(2) ASSESSMENT MONITORING PROGRAM. The owner or operator of a CCR landfill shall conduct an assessment monitoring program in accordance with all of the following requirements:

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(a) The owner or operator shall collect and analyze assessment monitoring samples from all of the CCR wells at the facility. The assessment monitoring samples shall be collected within 90 days of triggering an assessment monitoring program, and annually thereafter. The owner or operator of the CCR landfill shall sample and analyze the groundwater for all constituents listed under ch. NR 507, Appendix I, Table 3 for CCR wells. The number of samples collected and analyzed for each well during each sampling event shall be consistent with the approved sampling plan and shall be no less than one sample from each well.

(b) After obtaining the results from the initial and subsequent sampling events required in par. (a), the owner or operator shall, within 90 days of obtaining the results, and semiannually thereafter, resample all CCR wells, conduct analyses for all detection monitoring parameters under ch. NR 507, Appendix I, Table 1A and for those constituents under ch. NR 507, Appendix I, Table 3 that are detected in response to par. (a), and report the results to the department in accordance with s. NR 507.30 (1). The number of samples collected and analyzed for each CCR well during subsequent semiannual sampling events shall be consistent with the approved sampling plan and shall consist of a minimum of one sample from each well.

(c) For the purposes of determining the point of standards application for a groundwater quality exceedance at any CCR well, the design management zone shall be set at the waste boundary as defined under s. NR 140.22 (3). The waste boundary shall include the horizontal space taken up by any liner, dike, or other barrier designed to contain CCR waste.

(d) If the concentrations of all constituents sampled under par. (b) are shown to be at or below a PAL or ES under s. NR 140.10 or an approved ACL for two consecutive sampling events at the point of standards application, the owner or operator may return to detection monitoring of the CCR landfill. The owner or operator shall notify the department that detection monitoring is resuming for the CCR landfill within 60 days after the end of the sampling period and place the notification in the facility's operating record.

(e) If the concentrations of any sampled parameter are above the PAL or ES standards in s. NR 140.10 or approved ACL at the point of standards application, the owner or operator shall continue assessment monitoring in accordance with this section.

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(f) If one or more constituents in the assessment monitoring are detected at levels above the groundwater protection standard under s. NR 140.10 in any sampling event, the owner or operator shall do all of the following:

1. Notify the department in accordance with s. NR 507.30 (1).
2. Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization shall include a complete and accurate assessment of the corrective measures necessary to effectively prevent and remediate all releases from the CCR landfill.
3. Install additional monitoring wells necessary to define the contaminant plumes.
4. Collect data on the nature and estimated volume of leachate released including specific information on the constituents listed under ch. NR 507, Appendix I, Table 3 and the concentrations at which the constituents are present in the landfill leachate.
5. Install at least one additional monitoring well at the property boundary in the direction of contaminant migration and sample this well in accordance with par. (b).
6. Sample all wells in accordance with par. (b) to characterize the nature and extent of the release.
7. Notify all property owners and residents on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site as indicated by sampling of wells in accordance with subd. 6. The owner or operator shall provide the department with copies of the notifications within 60 days of their certified delivery to the affected property owners or residents.

(g) Within 60 days of finding that a PAL, ACL, or ES has been attained or exceeded at any CCR groundwater monitoring well according to s. NR 140.14 and the value is confirmed, the owner or operator shall do one of the following:

1. Develop a site investigation workplan and a site investigation report in accordance with ss. NR 716.05 to 716.11 and 716.15 to 716.17. If a site investigation report is submitted

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under s. NR 716.15, the report shall include proof of financial responsibility to comply with s. NR 520.05 (1).

2. Submit a report to the department that demonstrates that a source other than the CCR unit caused the contamination, or that the groundwater standard exceedance resulted from error in sampling, analysis, or natural variation in background groundwater quality. The report shall include the factual or evidentiary basis for any conclusions. If a successful demonstration is made, as determined by the department, the owner or operator shall continue monitoring in accordance with the assessment monitoring program, and may return to detection monitoring if the constituents under ch. NR 507, Appendix I for CCR wells are below the groundwater protection standards. The owner or operator shall include the report required under this subdivision in the annual groundwater monitoring and corrective action report required under par. (a).

(3) REMEDIAL ACTION OPTIONS. (a) Within 60 days of department approval of the site investigation report prepared under s. NR 716.11, or immediately upon confirmation of a release from a CCR landfill, the owner or operator, shall evaluate and select remedial action options and develop a remedial action options report in accordance with ch. NR 722 to assess potential corrective measures to prevent further releases, to remediate any releases, and to restore the affected area to original conditions if possible. Any soil contamination shall be addressed in accordance with the requirements under ch. NR 720. The assessment of remedial action options shall be completed and submitted to the department within 60 days of department approval of the site investigation report, unless the department determines that additional time to complete the report is needed due to site-specific conditions or circumstances. The 90-day deadline to complete the assessment of corrective measures may be extended by the department for no longer than 60 days. The owner or operator shall also include a copy of the remedial actions options report in the annual groundwater monitoring and corrective action report.

(b) The owner or operator of the CCR landfill shall continue to monitor groundwater in accordance with the assessment monitoring program under sub. (2) until completion of the remedy and case closure under sub. (5).

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(c) In addition to the remedial action options report required under ch. NR 722, the owner or operator shall also submit to the department an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under par. (a) and address all of the following:

1. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination.

2. The time required to begin and complete the remedy.

3. The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy.

(d) The department shall respond to the submission of the remedial action options report required under ch. NR 722 in accordance with s. NR 722.15.

(e) The department shall hold a public informational hearing to discuss the results of the remedial action options report with interested and affected parties at least 30 days prior to the selection of a remedy.

(4) REMEDIAL ACTION SELECTION. (a) Based on the results of the remedial action options report, the owner or operator shall select a remedy that, at a minimum, meets the standards listed under par. (b) and meets the requirements under ch. NR 722 for the selection of remedial actions. The owner or operator shall describe the selected remedy in the remedial action options report and include a section indicating how the selected remedy meets the standards specified under par. (b). The report shall be placed in the operating record of the facility.

(b) Any chosen remedial action shall meet all of the following standards:

1. Be protective of human health and the environment.

2. Be shown to have the ability to attain the groundwater protection standards under ch. NR 140.

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3. Control the source or sources of releases to reduce or eliminate, to the maximum extent feasible, further releases of constituents under ch. NR 507, Appendix I for CCR landfills into the environment.

4. Remove from the environment as much of the contaminated material that may have been released from the CCR landfill as is feasible, accounting for factors such as avoiding inappropriate disturbance of sensitive ecosystems.

5. Comply with standards for management of wastes as specified under ch. NR 506 for CCR material.

(c) In selecting a remedy that meets the standards under par. (b), the owner or operator of the CCR landfill shall consider all of the following evaluation factors:

1. The long- and short-term effectiveness and protectiveness of the potential remedy or remedies, along with the degree of certainty that the remedy will prove successful based on consideration of all of the following:

a. The magnitude of reduction of existing risks.

b. The magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following the implementation of a remedy.

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

d. The short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of the contaminant.

e. The time until full protection will be achieved.

f. The potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment.

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g. The long-term reliability of the engineering and institutional controls.

h. The potential need for replacement of the remedy.

2. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of all of the following factors:

a. The extent to which containment practices will reduce further releases.

b. The extent to which treatment technologies may be used.

3. The ease or difficulty of implementing a potential remedy based on all of the following types of factors:

a. The degree of difficulty associated with constructing the technology.

b. The expected operational reliability of the technologies.

c. The need to coordinate with and obtain necessary approvals and permits from other municipalities, programs, or agencies.

d. The availability of necessary equipment and specialists.

e. The available capacity and location of needed treatment, storage, and disposal services.

f. The degree to which community concerns are addressed by a potential remedy.

(d) The owner or operator shall specify, as part of the selected remedy in the remedial action options report, a schedule for implementing and completing the selected remedial activities. The owner or operator shall propose in the schedule the completion of remedial activities within a reasonable period of time, subject to approval by the department. The owner or operator of the CCR unit shall consider all of the following factors in determining the schedule for implementing and completing the selected remedial activities:

1. The extent and nature of contamination.

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2. The reasonable probabilities of remedial technologies in achieving compliance with the ch. NR 140 groundwater protection standards and other objectives of the remedy.

3. The availability of treatment or disposal capacity for CCR managed during implementation of the remedy.

4. The potential risks to human health and the environment from exposure to contamination during implementation of the remedy.

5. The resource value of the aquifer, including all of the following:

a. Current and future uses.

b. Proximity and withdrawal rate of users.

c. Groundwater quantity and quality.

d. The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to CCR constituents.

e. The hydrogeologic characteristic of the facility and surrounding land.

f. The availability of alternative water supplies.

6. Any other factors determined by the department.

(e) The department shall respond to the submission of the remedial action options report required under sub. (3) in accordance with s. NR 722.15.

(5) REMEDIAL ACTION IMPLEMENTATION. (a) Within 90 days after the department approves a remedy from the remedial action report under sub. (4), the owner or operator shall initiate remedial activities. Based on the schedule established under sub. (4) (d) for implementation and completion of remedial activities, the owner or operator shall do all of the following:

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1. Establish and implement a corrective action groundwater monitoring program that, at a minimum, meets the requirements of an assessment monitoring program under sub. (2), documents the effectiveness of the corrective action remedy, and demonstrates compliance with the groundwater protection standards under ch. NR 140.

2. Implement the corrective action remedy selected by the department under sub. (4).

3. Take any interim measures necessary to reduce the contaminants leaching from the CCR landfill and potential exposures to human or ecological receptors. Interim measures shall, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy approved by the department under sub. (4). All of the following factors shall be considered by an owner or operator in determining whether interim measures are necessary:

a. The time required to develop and implement a final remedy.

b. The actual or potential exposure of nearby populations or environmental receptors to any of the constituents listed under ch. NR 507, Appendix I.

c. The actual or potential contamination of drinking water supplies or sensitive ecosystems.

d. Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously.

e. Weather conditions that may cause any of the constituents listed under ch. NR 507, Appendix I to migrate or be released.

f. The potential for exposure to any of the constituents listed under ch. NR 507, Appendix I as a result of an accident or failure of a container or handling system.

g. Any other situations that may pose threats to human health and the environment.

(b) If, at any time, the department determines that compliance with the requirements under ch. NR 140 in accordance with ch. NR 726 are not being achieved through the remedy

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selected, the department shall direct the owner or operator in writing to propose an alternative remedy or other methods or techniques that could feasibly achieve compliance with the requirements to the department in accordance with sub. (4).

(c) A remedy selected under sub. (4) shall be considered complete when the department determines all of the following:

1. The groundwater protection standards under ch. NR 140 have been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system established at the CCR landfill.

2. The owner or operator of the CCR landfill has demonstrated that concentrations of constituents listed under ch. NR 507, Appendix I have not exceeded the groundwater protection standards under ch. NR 140 for a period of three consecutive years.

3. All actions required to complete the remedy have been satisfied.

(d) Upon completion of the remedy, the owner or operator may apply to the department for a case closure under ch. NR 726.

SECTION 25. NR 512.02 (1) is renumbered NR 512.02 (1) (a) and amended to read:

NR 512.02 Applicability. (1) (a) Except as provided in par. (b) and except as otherwise provided, this chapter governs all landfills as defined in ~~in~~ under s. 289.01 (20), Stats., ~~except landfills and all CCR landfills and expansions as defined in s. NR 500.03 (26n) and (121m).~~

(b) This chapter does not govern any of the following:

1. Landfills regulated under ch. NR 503.; ~~hazardous~~

2. Hazardous waste facilities as defined ~~in~~ under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679; ~~metallie.~~

3. Metallic mining operations for nonferrous minerals as defined ~~in~~ under s. 293.01 (9), Stats., and regulated under ch. NR 182; ~~and metallie.~~

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4. Metallic mining operations for ferrous minerals as defined ~~in~~under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined ~~in~~under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 26. NR 512.13 (1) is renumbered (1) (intro.) and amended to read:

NR 512.13 (1) LOCATIONAL CRITERIA AND PERFORMANCE STANDARDS. A demonstration that the proposed landfill will meet the locational criteria and performance standards ~~in~~under s. NR 504.04. For a new CCR landfill or an expansion of a CCR landfill only, all of the following also apply:

SECTION 27. NR 512.13 (1) (a), (b), and (c) are created to read:

NR 512.13 (1) (a) The demonstration shall address all of the following factors, at a minimum, when determining whether an area is unstable:

1. On-site or local soil conditions that may result in significant differential settling.
2. On-site or local geologic or geomorphologic features.
3. On-site or local human-made features or events both surface and subsurface.

(b) A facility or practice near a floodplain shall not restrict the flow of the regional flood, reduce the temporary water storage capacity of the flood plain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, or land or water resources.

(c) A facility or practice shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR 17.

SECTION 28. NR 514.02 (1) is renumbered 514.02 (1) (a) and amended to read:

NR 514.02 Applicability. (1) (a) Except as provided in par. (b) and except as otherwise provided, this chapter governs all landfills as defined ~~in~~under s. 289.01 (20), Stats., ~~except small~~ and all CCR landfills and expansions as defined under s. NR 500.03 (26n), and (121m).

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(b) This chapter does not govern any of the following:

1. Small size and intermediate size construction and demolition waste landfills regulated under ch. NR 503, hazardous waste facilities as defined ~~in~~under s. 291.01 (8), Stats., and regulated under chs. NR 660 to 679; ~~metallie~~.

2. Metallic mining operations for nonferrous minerals as defined ~~in~~under s. 293.01 (9), Stats., and regulated under ch. NR 182; ~~and metallie~~.

3. Metallic mining operations for ferrous minerals as defined ~~in~~under s. 295.41 (26), Stats., including mining wastes and mining waste sites as defined ~~in~~under s. 295.41 (30) and (31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 29. NR 514.045 is created to read:

NR 514.045 Procedural requirements for initial permitting of CCR Landfills. (1)
GENERAL. An owner or operator of a new or existing CCR landfill that is licensed or constructed prior to the effective date of this section [LRB inserts date] shall submit a plan of operation modification to the department no later than six months after the effective date of this section [LRB inserts date] to update the plan of operation to comply with the applicable requirements under chs. NR 500 to 520 for CCR landfills. The plan of operation modification shall address all phases of the CCR landfill with a current plan of operation approval. At a minimum, the plan of operation modification shall include all of the following:

(a) A plan that meets the requirements under s. NR 500.05, including the certifications required under s. NR 500.05 (4).

(b) A demonstration that all phases of the CCR landfill meet the performance criteria under s. NR 504.04 (4) (a), (b), and (c).

(c) A demonstration that all phases of the CCR landfill meet the locational criteria under s. NR 504.04 (3) (g), (h), and (i). The demonstration shall address all of the following factors, at a minimum, when determining whether an area is unstable:

1. On-site or local soil conditions that may result in significant differential settling.

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2. On-site or local geologic or geomorphologic features.

3. On-site or local human-made features or events both surface and subsurface.

(d) A demonstration that the facility or practices near floodplains shall not restrict the flow of the regional flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human life, wildlife, or land or water resources.

(e) A demonstration that the facility or practices shall not result in the destruction or adverse modifications of the critical habitat of endangered or threatened species as identified in 50 CFR 17.

(f) A demonstration that the CCR landfill design meets requirements under s. NR 504.12 or an alternate design under s. NR 504.10. The demonstration shall include a design report, engineering drawings, and calculations.

(g) The plans required under s. NR 514.07 (10).

(h) A demonstration that the groundwater monitoring system complies with the requirements under s. NR 507.15 (3), including documentation of the design, installation, and development of any CCR wells.

(i) An updated sampling and analysis plan that addresses the requirements under s. NR 507.15 (3).

(2) COMPLETENESS. Within 90 days after the owner or operator of a new or existing CCR landfill submits a plan of operation modification, the department shall provide written notification to the owner or operator, and any other person who has filed a written request, whether or not the plan of operation modification is complete. If the submittal is determined to be incomplete, the department shall specify the information that shall be submitted before the plan may be deemed complete. The department shall determine if the plan of operation modification is complete by determining whether or not the minimum requirements of this chapter have been met. The department may require the applicant to submit additional

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information at any time, including after determining that the plan of operation is complete, if the department establishes that the plan of operation is insufficient without the additional information. If the owner or operator submits additional information that substantially differs from the complete submittal, the procedures under this subsection and sub. (3) shall be repeated.

(3) NOTIFICATION OF COMPLETENESS AND PUBLIC COMMENT PERIOD. After the department determines the project is complete, the department shall publish a class 1 notice under ch. 985, Stats., in the official newspaper designated under s. 985.04 or 985.05, Stats., or, if none exists, in a newspaper likely to give notice in the area of the landfill, and shall publish the notice on its internet site. The notice shall include a statement that the plan of operation modification for initial permitting of the CCR landfill is complete. The notice shall invite the submission of written comments by any person within 30 days after the notice is published. A copy of the plan of operation modification submittal shall also be published on the department's internet site during the comment period.

(4) REVIEW TIMES. The department shall either approve or disapprove the plan of operation modification in writing within 60 days after the completion of the public comment period under sub. (3).

(5) FAILURE TO DEMONSTRATE COMPLIANCE WITH LOCATIONAL CRITERIA. (a) Within 6 months of a determination that an existing CCR landfill does not comply with the location criteria for unstable areas specified under sub. (1) (c), an owner or operator shall cease placing CCR and non-CCR waste streams into the CCR landfill and close the CCR landfill in accordance with the requirements under s. NR 506.083. This timeframe does not apply if the owner or operator complies with the alternative closure procedures under s. NR 506.083 (6).

(b) An owner or operator of a new CCR landfill or a lateral expansion of a CCR landfill who fails to make the demonstration showing compliance with the locational requirements specified under par. (1)(b), (c), (d), (e), and (f) is prohibited from placing CCR in the CCR unit.

SECTION 30. NR 514.07 (10) is created to read:

NR 514.07 (10) ADDITIONAL REQUIREMENTS FOR CCR LANDFILLS. The owner or operator of a new or existing CCR landfill or lateral expansion of a CCR landfill shall update the

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plan of operation every 10 years during the landfill's active life to comply with regulations in place at the time of the update. The plan of operation for all CCR landfills shall include all of the following:

(a) A CCR fugitive dust control plan in accordance with all of the following:

1. The plan shall identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator shall select and include in the CCR fugitive dust control plan the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Control measures may include any of the following:

- a. Locating CCR inside an enclosure or partial enclosure.
- b. Operating a water sprayer or fogging system.
- c. Reducing fall distances at material drop points.
- d. Using wind barriers, compaction or vegetative covers.
- e. Establishing and enforcing reduced vehicle speed limits.
- f. Paving and sweeping roads.
- g. Covering trucks transporting CCR.
- h. Reducing or halting operations during high wind events.
- i. Applying a daily or intermediate cover.

2. The plan shall include procedures to wet CCR with water to a moisture content that will prevent wind dispersal but will not result in free liquids. In lieu of water, wetting of CCR may be accomplished with an appropriate chemical dust suppression agent.

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3. The plan shall include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan. At a minimum, the assessment shall include a weekly visual inspection, unless the CCR landfill is inactive and all areas are covered by intermediate or final cover.

4. The plan shall be modified in accordance with s. NR 514.04 (6) or NR 514.09 whenever there is a change in conditions that may substantially affect the plan of operation.

5. The plan shall address the preparation of an annual fugitive dust control report in accordance with s. NR 506.20 (4).

Note: The requirements under par. (a) apply in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.

(b) A run-on and run-off control system plan that includes all of the following:

1. A run-on and run-off control system designed in accordance with the requirements under s. NR 504.12 (2).

2. Plan sheets depicting the location of run-on and run-off control features, detail drawings, and supporting engineering calculations.

3. Construction procedures and a schedule for construction.

4. Modification every 5 years from the date of the most recent plan approval and whenever there is a change in conditions that may substantially affect the written plan in effect. The modification shall be requested by the owner or operator in accordance with s. NR 514.04 (6) or NR 514.09 prior to the 5-year deadline.

(c) A written closure plan in accordance with the requirements under s. NR 514.06 (10) and all of the following:

1. A narrative description of how the CCR landfill will be closed, including a description of the steps necessary to close the CCR unit at any point during the active life of the CCR unit, consistent with recognized and generally accepted good engineering practices.

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2. A description of the final cover system, designed in accordance with s. NR 504.07, and the methods and procedures to be used to install the final cover.

3. A demonstration, including a narrative discussion, of how the final cover system will achieve all of the following performance standards:

a. Control, minimization, or elimination, to the maximum extent feasible, of post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.

b. Prevention of the impoundment of water, sediment, or slurry.

c. Slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period.

d. Minimization of the need for long-term maintenance of the CCR landfill.

e. Completion of closure in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

4. An estimate of the maximum volume in cubic yards of CCR that will be disposed on-site over the active life of the CCR landfill.

5. An estimate of the largest area of the CCR landfill that will require a final cover at any time during the CCR landfill's active life.

6. A schedule for completion of all closure activities, including an estimate of the year in which all closure activities for the CCR landfill will be completed. The schedule shall provide sufficient information to describe the sequential steps that will be taken to close the CCR landfill, including identification of major milestones such as coordinating with other agencies and obtaining other necessary approvals or permits, installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR landfill closure. If the estimated timeframes to complete closure exceed the timeframes specified under s. NR 506.083 (3) (a), the plan shall include the site-specific information, factors and considerations that support any time extension.

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7. The plan shall be modified in accordance with s. NR 514.04 (6) or NR 514.09 whenever there is a change in conditions that would substantially affect the written closure plan or unanticipated events necessitate a revision of the written closure plan. The modification shall be submitted to the department in writing at least 60 days prior to a planned change in the operation of the CCR landfill, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR landfill, the owner or operator shall submit the modification request to the department no later than 30 days following the triggering event.

8. If closure of the CCR landfill will be accomplished through removal of CCR from the CCR landfill, the closure plan shall be modified and approved by the department prior to implementation in accordance with s. NR 514.04 (6). The closure plan shall include a description of the procedures to remove the CCR and decontaminate all areas affected by the CCR landfill in accordance with s. NR 506.08 (5).

(d) A written long-term care plan that addresses all of the following:

1. A description of the monitoring and maintenance activities and the frequency at which those activities will be performed. The activities shall include, at a minimum, all of the following:

a. Long-term care activities specified under s. NR 514.06 (11).

b. Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover.

c. Maintaining the effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements under s. NR 504.12 (3) (a).

d. Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with ch. NR 507 and the sampling plan approval.

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2. The name, address, telephone number, and email address of the person or office to contact about the facility during long-term care.

3. A description of the planned uses of the property during long-term care. Post-closure uses may not disturb the integrity of the final cover, liner, or any other component of the landfill, or the function of the monitoring systems unless approved in writing by the department. A written request for approval shall include a demonstration that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration shall be certified by a professional engineer in accordance with s. NR 500.05 (4) (a).

(e) The long-term care plan under par. (d) may be modified in accordance with s. NR 514.04 (6). The owner or operator shall modify the long-term care plan whenever there is a change in the operation of the CCR landfill that would substantially affect the written long-term care plan in effect; or after long-term care activities have commenced, when unanticipated events necessitate a revision of the written long-term care plan. The modification shall be submitted to the department in writing at least 60 days prior to a planned change in the operation of the CCR landfill, or no later than 60 days after an unanticipated event requires the need to revise an existing long-term care plan. If a written long-term care plan is revised after long-term care activities have commenced for a CCR landfill, the owner or operator shall submit the modification request to the department no later than 30 days following the triggering event.

SECTION 31. NR 514.09 (1) (b) 7. is repealed.

SECTION 32. NR 516.02 (1) is renumbered NR 516.02 (1 (a) and amended to read:

NR 516.02 Applicability. (1) (a) Except as provided in par. (b) and except as otherwise provided, this chapter governs all landfills as defined ~~in~~ under s. 289.01 (20), Stats., ~~except small~~ and all CCR landfills and expansions as defined under s. NR 500.03 (26n) and (121m).

(b) This chapter does not govern any of the following:

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1. Small size construction and demolition waste landfills regulated under ch. NR 503.7,
~~hazardous~~

2. Hazardous waste facilities as defined ~~in~~under s. 291.01 (8), Stats., and regulated under
chs. NR 660 to 679;~~metallie.~~

3. Metallic mining operations for nonferrous minerals as defined ~~in~~under s. 293.01 (9),
Stats., and regulated under ch. NR 182;~~and metallie.~~

4. Metallic mining operations for ferrous minerals as defined ~~in~~under s. 295.41 (26),
Stats., including mining wastes and mining waste sites as defined ~~in~~under s. 295.41 (30) and
(31), Stats., and regulated under subch. III of ch. 295, Stats.

SECTION 33. NR 520 Table 5 is amended to read:

NR 520

TABLE 5
Fee Schedule - Landfills And Surface Impoundments Plan Review Fees

Facility Type	Type of Submittal	Plan Review Fee
Municipal solid waste landfills	Landfill stability plan	\$2500 ⁽¹⁾⁽²⁾
All solid waste landfills	Research, development and demonstration plan	\$2500 ⁽¹⁾⁽²⁾
All landfills, <u>excluding CCR landfills</u>	Annual report	\$500 ⁽³⁾
<u>CCR landfills</u>	<u>Annual report under s. NR 506.20 (4)</u>	<u>\$2,000</u>
<u>CCR landfills</u>	<u>Plan of operation modification for initial permitting under s. NR 514.045 (1)</u>	<u>\$30,500</u>

(1) These fees apply if the submittal is not proposed as part of the plan of operation. These fees apply to proposed renewal submittals for research, development and demonstration plans after approval of initial submittal.

(2) A landfill stability plan submitted under s. NR 514.07 (9) or a research, development and demonstration submitted under s. NR 514.10, as referred to in Table 5, are plan modifications which propose to modify a feasibility report, plan of operation, or closure plan.

(3) This fee applies to all annual reports for ~~landfill~~ landfills, except CCR landfills, unless the report is also a renewal submittal for a research, development and demonstration plan.

SECTION 34. EFFECTIVE DATE. This rule takes effect on the first day of the month following publication in the Wisconsin Administrative Register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 35. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on [DATE].

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Dated at Madison, Wisconsin _____.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

BY _____

For Preston D. Cole, Secretary

(SEAL)