



Department of Natural Resources

Five-Year Rule Review Worksheet

Phase 2 - Part C

BASIC INFORMATION

Date Part C Review Concluded: July 2015

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Chapter¹ Number: 103

Chapter Name: Sanitary Landfills: Coal Combustion Residue

1. DOES THIS CHAPTER² DO THE JOB IT SETS OUT TO DO?

1a. Is this chapter effective at protecting the health, welfare, and safety of lowans and our natural resources?

Yes

No

(check or circle)

1b. Explain how the chapter protects the health, welfare, and safety of lowans and our natural resources.

The purpose of this administrative chapter was to set forth requirements for the design, construction, operation and monitoring of sanitary landfills that accept only coal combustion residue (CCR). However, this administrative chapter falls short in that requirements are inadequate and leave too much ambiguity as to what is being required. This absence of detail with respect to fundamental design and operating requirements (e.g., location restrictions, liner design, assessment monitoring, corrective action), which are considered standard industry

¹ If the Phase 1 Worksheet addresses a portion of a chapter, rather than a whole chapter, then this follow-up worksheet should address the same portion of the chapter (e.g., rule or rules, paragraph, etc.).

² Throughout this worksheet, the word "chapter" is meant to apply to the chapter or portion of a chapter to which the worksheet applies.

practice, results in facility design and operations that fail to adequately protect human health and the environment.

The U.S. Environmental Protection Agency (EPA) completed a risk assessment of CCR in a report titled "Human and Ecological Risk Assessment of Coal Combustion Wastes," (April 2010). The findings of this risk assessment confirm the high risks presented in the mismanagement of CCR disposed in unlined sanitary landfills and surface impoundments. This risk assessment also confirms that with the use of composite liners, CCR can be managed safely given certain environmental controls, but it calls into question the reliability of clay liners, especially in surface impoundment applications.

The risk assessment concluded that the management of CCR in unlined or clay-lined waste management units results in higher-than-typical cancer risks to humans, and higher-than-typical non-cancer effects to both human and ecological receptors. The assessment documents that clay-lined units tended to have lower risks than unlined units, but composite-lined units reduced risks from all pathways and constituents below the risk criteria (i.e., 10^{-5} for excess cancer risk to humans or a hazard quotient (HQ) greater than 1 for non-cancer effects to both human and ecological receptors).

While this administrative chapter sets forth the minimum siting, design and operating requirements for CCR sanitary landfills, those requirements are fundamentally inadequate under the context of the U.S. EPA's CCR risk assessment. For example, some requirements are out-of-date (e.g., does not recognize newer health-based standards like the Iowa Statewide Standards), nonexistent in some situations (e.g., no specific liner requirement or leachate collection systems are required), and too ambiguous in others (e.g., identifies the specific terms where groundwater assessment can be required, but does not define what an assessment entails).

It appears that the administrative chapter was written with the presumption that CCR was benign and unlikely to cause groundwater contamination above applicable health standards; possibly due in part to coal ash's use in numerous applications ranging from a substitute for Portland cement and wallboard to its use as an agricultural soil amendment. Subsequent groundwater monitoring results at Iowa CCR sanitary landfills support the findings cited in EPA's risk assessment. Groundwater releases above health standards have occurred at CCR sanitary landfills in Iowa, which could have been prevented or significantly decreased with standard environmental controls, such as an engineered liner and leachate collection system.

On December 19, 2014, the U.S. EPA signed a final rule establishing national minimum criteria for the safe disposal and beneficial use of CCR generated by electric utilities and independent power producers. The available information demonstrates that the risks posed to human health and the environment by certain CCR management units warrant regulatory controls. This final rule was published in the *Federal Register* on April 17, 2015 and will become effective on October 19, 2015. This final rule establishes a comprehensive set of requirements for the

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disposal of CCR under the solid waste provisions, Subtitle D, of the Resource Conservation and Recovery Act (RCRA), which substantially mirror the design and operation standards placed upon municipal solid waste sanitary landfills in 40 CFR, Part 258 (e.g., location restrictions, liner design, assessment monitoring and corrective action).

2. IS THERE LEGAL AUTHORITY FOR THIS CHAPTER?

2a. Is the chapter intended to implement any state statutes?

Yes No (check or circle)

If this chapter is intended to implement any state statutes, then answer questions 2b and 2c. If not, then proceed to question 2d.

2b. Provide citations for the specific provisions of the Iowa Code implemented by this chapter.

At the conclusion of this administrative chapter there is a chapter implementation sentence that states, "These rules are intended to implement Iowa Code section 455B.304."

[Iowa Code section 455B.304](#) – 455B.304(1), 455B.304(4) through (6), and 455B.304(8)

[Iowa Code section 455B.305](#) – 455B.305(1)

[Iowa Code section 455B.306](#) – 455B.306(7)“a” through “d”, 455B.306(9) and 455B.306(12)

[Iowa Code section 455B.381](#) – 455B.381(4), (5) and (9)

[Iowa Code section 455B.387](#)

[Iowa Code section 455E.3](#) – 455E.3(2) and (5)

[Iowa Code section 455E.4](#)

[Iowa Code section 455E.5](#) – 455E.5(1) through (6)

2c. Provide a narrative summary of how the state statutes are implemented by this chapter.

This administrative chapter addresses some, but not all of the statutory requirements deemed applicable to CCR sanitary landfills. Notable omissions include a 30-year postclosure plan and operator certification requirements, to environmental pollution controls like a leachate control systems and tile line separation distances. These omissions of statutorily required design and operating requirements prevent the DNR from fulfilling the requirements of Iowa Code section

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455B.301A(1) regarding the protection of the health, safety, and welfare of lowans and the protection of the environment through the safe and sanitary disposal of solid wastes.

As stated prior, these omissions may be the result of this administrative chapter having been written to specify the permitting requirements for a type of solid waste that was thought to be, at the time of writing, a benign material. Given the additional federal evaluation of CCR, and the omission of fundamental design and operating requirements, this administrative chapter falls short of meeting its statutory obligations under Iowa Code sections 455B.301A and 455E.3.

Given the scope of the provisions expressed within 567 IAC 103, it was felt that brief bulleted summaries regarding each statutory provision expressed above would be easier to follow and provide greater clarity as to how that statutory provision was being implemented by this administrative chapter. The administrative rule citations below should not be considered inclusive of all that pertain to each statutory provision, but rather examples of how each Iowa Code provision is implemented by this administrative chapter.

Iowa Code section 455B.304(1)

- While there are specific rules within this administrative chapter that have direct statutory authority (e.g., 567 IAC 103.2 – emergency response and remedial action plans (ERRAP) and 567 IAC 103.3 – financial assurance), some requirements are based upon the broad authority given under Iowa Code section 455B.304(1) to adopt rules for the proper administration of Division IV “Solid Waste Disposal,” Part 1 “Solid Waste.” Within the examples given in Iowa Code section 455B.304(1) is the authority to establish rules for “the issuance of permits”, “general operations and maintenance” and for the “inspection of sanitary disposal projects” (SDPs).
- 567 IAC 103.1(2) and 103.1(6) specify the permit application and renewal process for the construction and operation of CCR landfills.
- 567 IAC 103.1(1) establishes CCR landfill siting criteria.
- 567 IAC 103.1(3) details the engineering design and construction standards for CCR landfills.
- 567 IAC 103.1(4) establishes operating requirements for CCR landfills.
- 567 IAC 103.1(5) establishes the minimum design and construction criteria for CCR landfill closure and postclosure care.

Iowa Code sections 455B.304(4) & (5)

- 567 IAC 103.1(4)“c” through “e” set forth the minimum standards and sampling frequencies for the groundwater monitoring program, including monitoring well siting, sampling parameters and record keeping.

Iowa Code section 455B.304(6)

- 567 IAC 103.1(5)“e” specifies the minimum postclosure groundwater monitoring frequencies and applicable reporting.

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Iowa Code section 455B.304(8)

- 567 IAC 103.1(5) and 103.3 establish the minimum closure, postclosure care, and financial assurance requirements for CCR landfills.

Iowa Code section 455B.305(1)

- 567 IAC 103.1(6) specifies the timeframe by which the DNR issues and renews a permit for the operation of a CCR landfill, and 567 IAC 103.1(5)“f” specifies the minimum frequency of DNR inspection at closed sites.

Iowa Code sections 455B.306(7)“a” through “d”

- 567 IAC 103.1(5) requires as part of closure and postclosure care, the development of written postclosure plan. 567 IAC 103.3(3)“c”(6)“9” and 103.3(4)“c”(6)“8” through “10” require financial consideration be given to the ongoing maintenance of the leachate control system through postclosure. 567 IAC 103.2 requires the completion of an ERRAP.

Iowa Code section 455B.306(9) and 455B.306(12)

- 567 IAC 103.3 sets forth the criteria for establishing and maintaining financial assurance for closure, postclosure care and corrective action at CCR landfills.

Iowa Code sections 455B.381(4), (5) and (9) & Iowa Code section 455B.387

- 567 IAC 103.2 requires CCR landfills maintain an ERRAP, which describes how the individual permit holder will address certain hazardous conditions, including regulated and hazardous waste spills and releases.
- 567 IAC 103.1(4)“d” specifies how hazardous conditions involving leachate releases to groundwater are identified and assessed.

Iowa Code sections 455E.3(2) and (5)

- 567 IAC 103.1(4)“d” specifies how hazardous conditions involving leachate releases to groundwater are identified and assessed. If leachate migration occurs, the DNR may require a site owner conduct a groundwater quality assessment study to determine the rate of migration and the extent and constituent composition of the release.

Iowa Code section 455E.4 & Iowa Code sections 455E.5(1) through (6)

- 567 IAC 103.1(1) and 103.1(3), through its siting and design requirements for CCR landfills, implements the groundwater protection goal of Iowa Code section 455E.4 and policy in Iowa Code sections 455E.5(1) through (4) by emphasizing prevention of groundwater contamination by CCR landfills.
- The groundwater monitoring requirements specified in 567 IAC 103.1(4)“d” help implement the groundwater protection policies of Iowa Code sections 455E.5(2), (3), (5) and (6).

2d. Does the chapter implement any **federal statutes or regulations**?

Yes No (check or circle)

If this chapter is intended to implement any federal statutes or regulations, then answer questions 2e and 2f. If not, then proceed to question 3.

2e. Provide citations for the specific provisions of federal statutes and regulations implemented by this chapter.

40 CFR, Part 257, Subpart A – CRITERIA FOR CLASSIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND PRACTICES, establishes the criteria that classify facilities as open dumps and those practices that constitute open dumping.

As stated above, on December 19, 2014, the U.S. EPA signed a final rule establishing national minimum criteria in 40 CFR, Part 257 for the safe disposal and beneficial use of CCR generated by electric utilities and independent power producers. The available information demonstrates that the risks posed to human health and the environment by certain CCR management units and activities warrants regulatory controls. This final rule was published in the *Federal Register* on April 17, 2015 and will become effective on October 19, 2015.

2f. Provide a summary of how federal statutes and regulations are implemented by this chapter.

The 1980 “Bevill Amendment” to RCRA exempted wastes resulting from the combustion of fossil fuels from regulation as hazardous wastes under Subtitle C. Until publication of EPA’s final CCR rule on April 17, 2015, the regulations that were applicable to CCR disposal were contained in the Criteria for Classification of Solid Waste Disposal Facilities, promulgated in 1979 (See 40 CFR, Part 257, Subpart A). These criteria broadly define the practices that distinguish "open dumps" from sanitary landfills. Coal ash disposal sites not meeting the standards set forth in 40 CFR, Part 257 are classified as open dumps and are prohibited under RCRA section 4005(a). 42 U.S.C. § 6945(a).

As stated above, 40 CFR, Part 257, Subpart A establishes the criteria that classify facilities as open dumps and those practices that constitute open dumping. 567 IAC 103 incorporates some of these minimum standards as part of CCR landfill design and operation. For example:

- While not verbatim, the definitions for Landfill, Leachate, and Sanitary Landfill expressed in 40 CFR, Part 257.2 are similar to those in 567 IAC 100.2 and utilized throughout 567 IAC 103.
- The federal groundwater characterization and monitoring requirements in 40 CFR, Part 257.3-4 are reflected in 567 IAC 103.1(4)“d”.
- The site access provisions of 40 CFR, Part 257.3-8 are reflected within 567 IAC 103.1(3)“f”.

However, there are some federal provisions of 40 CFR, Part 257 that have been omitted from 567 IAC 103, including:

- The federal endangered species requirements in 40 CFR, Part 257.3(2) are not listed in 567 IAC 103.
- The federal requirements in 40 CFR, Part 257.3-7 to not violate a Clean Air Act State Implementation Plan is not included in 567 IAC 103.
- The minimum federal floodplain restrictions in 40 CFR, Part 257.3-1 are not reflected in the general requirements of 567 IAC 103.
- The minimum federal disease vector restrictions in 40 CFR, Part 257.3-6 are not reflected in the general requirements of 567 IAC 103.
- The minimum federal safety restrictions (i.e., explosive gases, bird hazards, fires, site access) in 40 CFR, Part 257.3-8 are not reflected in the general requirements of 567 IAC 103.

It should also be noted that in the April 17, 2015 final rule, EPA is deferring its final decision on the Bevill Regulatory Determination because of regulatory and technical uncertainties that cannot be resolved at this time.

3. DOES THE CHAPTER GO BEYOND FEDERAL LEGAL REQUIREMENTS?

3a. Is this chapter more stringent than federal statutory or regulatory requirements?

Yes No Not Applicable (check or circle)

If the answer is "yes," then answer question 3b. If not, then proceed to question 4.

3b. Provide a narrative statement regarding how this chapter is more stringent than required by federal statutes and regulations, and a short justification of why it is more stringent.

567 IAC 103 contains some variation and addresses necessary areas of regulation not specifically addressed within 40 CFR, Part 257. The current federal regulations speak more toward performance goals rather than actual prescriptive design and operating requirements. As such, some requirements of 567 IAC 103 could be considered more stringent (e.g., financial assurance and ERRAPs mandated by Iowa statute), but are established to achieve those overarching performance criteria in 40 CFR, Part 257. However, the determination of whether certain provisions are more stringent will vary, depending upon site specific factors, and may be subjective depending upon the perspective of the reviewer.

As stated above, on December 19, 2014, the U.S. EPA signed a final rule establishing national minimum criteria in 40 CFR, Part 257 for the safe disposal and beneficial use of CCR generated

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by electric utilities and independent power producers. The available information demonstrates that the risks posed to human health and the environment by certain CCR management units warrant regulatory controls. This final rule was published in the Federal Register on April 17, 2015 and will become effective on October 19, 2015.

4. DOES THIS CHAPTER HAVE UNINTENDED CONSEQUENCES?

4a. Does the chapter result in the equitable treatment of those required to comply with it?

Yes No (check or circle)

4b. Provide a narrative summary of your response.

Because this administrative chapter lacks detail with respect to fundamental design and operating requirements, the permit applicant and DNR permit engineers have to use significant amounts of professional judgment, and an iterative approach to permitting that fulfills the rule requirements. This has led to a variety of design and operational approaches being utilized, resulting in some variation from site to site in design and operation.

4c. Does the chapter result in the inequitable treatment of anyone affected by the chapter but not required to comply with it?

Yes No (check or circle)

4d. Provide a narrative summary of your response.

This administrative chapter results in equity of those who have been required to obtain a permit for the disposal of CCR waste. However, there are those sites that receive CCR for beneficial use for final placement that do not adhere to the same design and operating standards. In addition, operators of sanitary landfills accepting other types of waste (e.g., municipal solid waste sanitary landfills) that could include CCR, are at a competitive disadvantage due to the lesser set of required environmental controls (e.g., lack of liner and leachate control requirements), and therefore a lower cost of operation.

4e. Are there known negative unintended consequences of this chapter?

Yes No (check or circle)

If the answer is "yes," then answer question 4f. If not, then proceed to question 5.

4f. Specifically state the nature of any negative unintended consequences.

Although the regulatory requirements of this administrative chapter are minimal, facilities complying with this administrative chapter are not treated equally when compared to certain beneficial fill projects (e.g., mine reclamation) approved pursuant to 567 IAC 108, or other types of sanitary landfills permitted pursuant to 567 IAC 113 through 115. Mine reclamation utilizing CCR and CCR sanitary landfill disposal are comparable activities, however, mine

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reclamation is not considered disposal and therefore not currently subject to comparable SDP permitting and environmental control requirements.

5. CAN THE GOALS OF THE CHAPTER BE ACHIEVED IN A MORE EFFICIENT OR STREAMLINED MANNER?

5a. Is the chapter broader than necessary to accomplish its purpose or objective?

Yes No (check or circle)

5b. Provide a narrative summary of your response.

While the provisions of this administrative chapter apply only to sanitary landfills that only accept CCR, there are opportunities to expand the requirements to provide the regulated public with greater clarification regarding what's being required. Given the uncertainty regarding the adequacy of the current liner design and groundwater monitoring (e.g., omission of some CCR-specific contaminants, lack of assessment monitoring and corrective action), the issue with this administrative chapter isn't that it is overly broad in scope, but rather that it lacks the desired specificity needed to ensure such facilities are protective of human health and the environment.

5c. Is the purpose of this chapter achieved in the least restrictive manner?

Yes No (check or circle)

5d. Provide a narrative summary of your response.

The requirements of this administrative chapter are not restrictive, however, they also do not achieve the statutory purpose of the administrative chapter. In this case, being less restrictive is eclipsed by the administrative chapter's deficient design and operating requirements when compared to other sanitary landfill chapters that employ appropriate environmental controls to protect human health and the environment. Therefore, a case could be made that due to this lack of standard environmental controls, 567 IAC 103 perhaps doesn't meet the goals expressed in 40 CFR, Part 257 (e.g., siting setbacks, surface water monitoring) and Iowa Code chapters 455B (See 5d) and 455E (prevention of contamination to the maximum extent practical).

While the DNR acknowledges that there are numerous revisions that are warranted to streamline permitting requirements and to improve environmental protection standards for all permitted CCR disposal facilities, the ability to implement these revisions has in large part been dependent upon promulgation of U.S. EPA's final CCR rule. Publication of the final rule in the Federal Register on April 17, 2015 has confirmed the risks posed to human health and the environment by CCR disposal, which support the revision of 567 IAC 103.

5e. What, if any, reasonable and practical alternatives to this chapter are available by the agency?

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Currently there are four administrative chapters pertaining to sanitary landfill regulation. The primary difference in each administrative chapter is the type of waste stream being managed. Rather than making revisions to the current administrative chapter, a practical alternative may be to rescind 567 IAC 103 and regulate the disposal of CCR pursuant to 567 IAC 113; with allowances for waste-specific groundwater monitoring and certain design modifications considering the physical make-up of the waste being disposed. This option recognizes the inefficiencies of maintaining and enforcing a separate set of administrative rules for a limited number of sites statewide, when the design and operating requirements are comparable to those for Municipal Solid Waste Sanitary Landfills (MSWLF) in 567 IAC 113. This approach is supported by the fact that EPA's final CCR rule was directly modeled from the MSWLF regulations found in 40 CFR, Part 258.

5f. How do the economic and social costs of various alternatives to this chapter, if known, appear to compare to the known economic costs of this chapter?

Given EPA's final rule was modeled after the MSWLF regulations found in 40 CFR, Part 258, it's not anticipated that this approach would impose any additional design or monitoring costs on facilities outside of what's required in EPA's final rule, with the exception of statutorily required provisions (e.g., financial assurance, permit issuance, ERRAP). Consolidating the sanitary landfill administrative chapters into one comprehensive chapter would help eliminate duplication, resolve conflicting requirements, and lessen confusion (e.g., standardizing application/reporting forms) as to what needs to be submitted by applicants to maintain a permit. The added environmental protections afforded by EPA's final CCR rule (to be incorporated into 567 IAC 113) would reduce the potential for environmental contamination and the costs associated with any subsequent remediation effort. The consolidation of this and other sanitary landfill administrative chapters would also streamline the permitting process for both the applicant and the DNR, and could likely result in reduced staff time and associated costs to maintain a permit.

It should also be reiterated that the current rules for CCR disposal lack many of the environmental controls deemed standard practice by most states and the coal ash industry, which if adopted, would result in an increased cost of maintaining compliance. However, many industrial generators of CCR in Iowa have voluntarily designed and constructed new CCR sanitary landfills to a more environmentally-protective standard because they acknowledge that 567 IAC 103 is inadequate, and that continuing to wait for the U.S. EPA to finalize federal regulations was not a viable long-term option.

5g. Do the known economic costs of the chapter outweigh the known economic and social benefits?

Despite the noted environmental control deficiencies in 567 IAC 103 (e.g., location restrictions, liner design, comprehensive groundwater monitoring, corrective action), the known economic costs of this administrative chapter do not outweigh its benefits. However, the view remains that this administrative chapter lacks the appropriate minimum environmental controls which

warrant revision to ensure adequate environmental protections from the disposal of CCR. With the publication of EPA's final rule in the Federal Register on April 17, 2015, design and operating requirements for most CCR landfills will be changing irrespective of the DNR's efforts to revise 567 IAC 103.

6. DOES THE CHAPTER AFFECT BUSINESS OR INDUSTRY?

6a. Does the chapter affect businesses operating in Iowa?

Yes No (check or circle)

If the answer is "yes," then answer questions 6b through 6i as applicable. If not, then proceed to question 6f.

6b. What kinds of businesses are affected by this chapter?

Any public or private agency that generates CCR that is not recycled or used beneficially, would be affected at some level by the requirements of this administrative chapter.

6c. Does this chapter create a burden for businesses?

Yes No (check or circle)

6d. Explain your response to question 6c.

The provisions of this administrative chapter were intended to ensure the safe management and disposal of CCR wastes. While this administrative chapter provides an alternative management option besides disposal in a municipal solid waste sanitary landfill, it is deficient in most respects when compared to other sanitary landfill permitting administrative chapters. This is supported by the decision of some of Iowa's electric generating companies to voluntarily design and construct CCR sanitary landfills to a more protective standard (i.e., RCRA Subtitle D) than is currently required in this administrative chapter.

If the answer to question 6c is "yes," then answer question 6e. If not, then proceed to questions 6f through 6i.

6e. If this rule does create a burden for businesses, what options are available to address those burdens?

Given certain design and operational standards for CCR landfills are specified by federal regulation (i.e., 40 CFR, Part 257, Subpart A, and Subpart D on October 19, 2015) and Iowa state statute, many of these costs are fixed. However, the DNR offers several programs that provide businesses with grant money and technical assistance to facilitate waste reduction (i.e., Solid Waste Alternative Program, Pollution Prevention Services, Iowa Waste Exchange), and programs that help facilitate beneficial reuse of waste by-products. These assistance programs can greatly reduce businesses' waste management and disposal costs.

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6f. Do industry standards affect the subject matter of this chapter?

Yes No (check or circle)

If the answer is "yes," answer questions 6g through 6i as applicable. If not, proceed to question 7.

6g. Have industry standards changed since the adoption of this chapter?

Yes No (check or circle)

If the answer is "yes," answer questions 6h and 6i. If not, proceed to question 7.

6h. What industry standards have changed since the adoption of this chapter?

As stated prior, several industrial generators of large volumes of coal ash in the state are voluntarily constructing CCR sanitary landfills to a more environmentally-protective standard as a means to limit long-term liabilities and convey their corporation's environmental stewardship. In addition, many states have adopted regulations that parallel those for municipal solid waste sanitary landfills (RCRA Subtitle D) to ensure minimum environmental controls and oversight are applied to CCR disposal sites. With the publication of EPA's final CCR rule in the Federal Register on April 17, 2015, states will need to make the decision whether to update their existing CCR regulations (i.e., sanitary landfills and surface impoundments), or allow the federal rule to be self-implementing.

Since promulgation of this administrative chapter, large-scale CCR fill projects have been approved as beneficial use projects that approximate the size of the CCR landfills, but lack many of the environmental protections required in 567 IAC 103. The current beneficial use regulations (i.e., 567 IAC 108) likely did not anticipate the scale of these beneficial fill projects. In addition, 567 IAC 103 was written at a time when it was presumed that CCR was innocuous. U.S. EPA's recent risk assessment and groundwater monitoring data from Iowa CCR landfills have documented impacts to Iowa's groundwater that demonstrate the err of this assumption.

The analysis of sampling data in 567 IAC 103.1(4)"d" has historically resulted in false-positive indications of groundwater contamination due to the simplicity of the statistical methods applied to determine whether contamination is occurring. The adoption of statistical methods to evaluate groundwater monitoring data pursuant to 40 CFR, Part 258.53 and 40 CFR, Part 257, Subpart D (after October 19, 2015), and the utilization of the 2009 U.S. EPA guidance document titled, "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities" would result in an improved ability to detect contamination. The statistical procedures, methodologies and applications listed in the federal regulations and this guidance document improve the ability of sanitary landfills to detect groundwater contamination, and are commonly used by municipal solid waste sanitary landfill permit holders to analyze the collected data. This guidance document could be adopted by reference in 567 IAC 103 to provide greater clarity to the statistical evaluation process for permit holders and the DNR, which would lead to quicker data analysis and an improved ability to determine the appropriate responses to identified

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contamination.

567 IAC 103.1(2)“f” requires the collection of dissolved metals data, which reflects an incomplete approach to understanding metals transport in groundwater. Metals naturally exist in groundwater in many phases other than dissolved: precipitated, polymeric or adsorbed to colloids. In order to collect dissolved metals data, the groundwater is passed through a filter (rules do not specify filter size). However, filtering the samples removes a significant portion of the colloids, polymers and precipitated metals, which may erase any indication of a metals release from the CCR landfill. Additionally, depending on the filter size, some colloids may pass through so the results are not actually representative of dissolved metals in groundwater either. It should also be noted that the U.S. EPA’s Maximum Contaminant Level (MCL) is based upon total metals exposure and not dissolved metals exposure.

Furthermore, the U.S. EPA is finalizing in §257.93(b) a prohibition on field filtering groundwater samples because filtration of samples for metals analyses will not provide accurate information concerning the mobility of metals contaminants, the primary objective of groundwater sampling. Significant underestimations of mobility may result if filters are used to separate dissolved and particulate phases.

Liner components (e.g., composite liners and geocomposite drainage layers) have improved since these rules were promulgated. In addition, increased recycling and reuse programs in many industries, often assisted by state environmental programs, have helped reduce the amount of waste being sent to CCR landfills.

6i. Would revision of the chapter be useful in implementing the purposes of the chapter in light of any industry standard revisions? (Cite the portions of the chapter that could be revised.)

Iowa is one of only a few states nationwide that have not adopted a more protective landfill liner standard and detailed assessment monitoring and corrective action requirements for CCR sanitary landfills. As a result, substantial revisions are needed to bring this administrative chapter in line with other sanitary landfill permitting chapters; however, those efforts have been delayed pending rulemaking at the federal level. In addition to regulation of CCR in sanitary landfills, inclusion of provisions within the federal rulemaking regarding the management of CCR in surface impoundments will likely expand DNR administrative rulemaking in 567 IAC 103 beyond sanitary landfills.

7. DOES THIS CHAPTER AFFECT JOB CREATION?

7a. Does the chapter affect job creation?

Yes No (check or circle)

If the answer is “yes,” then answer questions 7b and 7c. If not, then proceed to question 8.

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7b. If this chapter affects job creation, in what manner does that occur

Not Applicable

7c. If this chapter is required by state or federal statutes, or federal regulations, how has the department minimized negative job impacts?

Not Applicable

8. IS THERE ANY DOCUMENTATION OR PAPERWORK REQUIRED BY THIS CHAPTER?

8a. Is there any documentation or paperwork required by this chapter?

Yes No (check or circle)

If documentation or paperwork is required, then answer questions 8b through 8e. If not, then proceed to question 9.

8b. What is the purpose of the documentation or paperwork?

The rules within this administrative chapter that require the submittal of paperwork pertain to minimum SDP permit application requirements and subsequent permitting actions (e.g., development and operations plan, tonnage reporting, Annual Water Quality Reports, Financial Assurance). Such documentation demonstrates that the sanitary landfill is sited, constructed and operated in compliance with requirements of this administrative chapter; and what impact the sanitary landfill may be having on groundwater and surface water. The documentation required generally changes as the CCR landfill is developed. The documentation consists of:

- The permit application and permit renewal documentation submitted pursuant to 567 IAC 103.1(2) and 103.1(6), and pursuant to Iowa Code section 455B.305.
- Sanitary landfill design, construction plan, specifications and related analyses are required to be maintained and submitted to the DNR pursuant to 567 IAC 103.1(2)“g” and 103.1(3). These documents enable the DNR to evaluate the liner design, runoff and run-on controls, adherence to siting restrictions, final elevation grades and proposed land use upon site closure.
- Pursuant to 567 IAC 103.1(4), CCR landfills are required to maintain and submit an operations plan as part of the permit application process. This plan records how the sanitary landfill will implement general and unique operating procedures (e.g., site access, frequency, extent and method of spreading and compacting the waste, removal of waste for beneficial use, groundwater monitoring and analysis) at the site to protect human health and the environment.
- Pursuant to 567 IAC 103.1(4)“e,” CCR landfills are required to submit water quality data and analyses which summarize the impact the facility is having on the environment. This

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annual documentation serves to meet the requirements of Iowa Code sections 455B.304(4) and (5).

- Pursuant to 567 IAC 103.1(4)“d,” CCR landfills may be required to develop and submit a groundwater quality assessment plan. Upon identification of an adverse impact on the environment, the assessment plan provides detail regarding how the magnitude of that impact will be determined, in accordance with the objectives of Iowa Code sections 455B.304(4) and (5).
- Pursuant to 567 IAC 103.1(5), CCR landfills are required to submit a plan to the DNR detailing a 10-year postclosure monitoring program, which in turn satisfies portions of Iowa Code sections 455B.304(4) and (6).
- Pursuant to 567 IAC 103.1(5), CCR landfills are required to conduct annual site inspections and submit findings (and corrective actions taken) to the DNR to ensure the facility is being properly maintained during the postclosure period.
- Pursuant to 567 IAC 103.2 and Iowa Code section 455B.306(7)“d,” CCR landfills are required to maintain and submit an ERRAP at the time of permit renewal or modification that incorporates facility changes that will impact the ERRAP. The ERRAP outlines detailed measures to reduce impacts of emergency situations on human health and the environment.
- Cost estimates and financial assurance documentation are required by 567 IAC 103.3 and Iowa Code sections 455B.304(8), 455B.306(7)“c” and 455B.306(9). Financial assurance protects the citizens of Iowa from incurring unforeseen costs if a sanitary disposal project owner is unable or unwilling to pay for proper site closure, by requiring that funds be set aside prior to permit issuance. Submittal of the cost estimate and annual financial statements ensure that the amount of financial assurance will be sufficient to cover the closure and postclosure care costs of each landfill.

8c. Who reviews the paperwork required by the chapter?

DNR central office program staff (e.g., environmental engineers, environmental specialists), DNR field office staff, and groundwater scientists employed by the DNR review the paperwork noted above to ensure compliance with regulations and to ensure such activities are protective of human health and the environment. All records are available online at no cost for public review.

8d. How is the documentation or paperwork required by this chapter informative or useful for the public?

Because all paperwork is made public, it provides transparency and a level playing field for all required to comply with this administrative chapter. The minimum permit application and management plans required in this administrative chapter provide the DNR and the public with information on who, what and how solid waste materials are being managed at a site. These application requirements are vital to the permitting process to ensure these facilities are designed and constructed in accordance with the rule, and that all solid waste management activities are conducted in a manner that is protective of human health and the environment. Furthermore, because of the public's sensitivity regarding solid waste disposal, due to the potential long-term threat to groundwater posed by the amount of material deposited within sanitary landfills, continuous oversight and demonstration of compliance are needed to gain and hold public trust.

Given the authority under which the U.S. EPA is promulgating the final CCR rule in 40 CFR, Part 257, Subpart D, most documents must be certified by a professional engineer and made publicly available on a dedicated internet site. This federal provision, as well as the DNR's policy of making all correspondence publicly available, will ensure open access by the public to documentation regarding each facility's compliance.

8e. How, if possible, can the documentation or paperwork requirements be reduced?

While much of the required paperwork within this administrative chapter is essential to making permitting decisions, changing how that information is updated and submitted to the DNR could significantly reduce the paperwork involved. Opportunities exist to restructure and simplify the required plans that must accompany each permit application, and opportunities to reduce paperwork through streamlining and standardizing reporting requirements (e.g., online application and reporting, financial assurance). Consideration of a lifetime permit, rather than a 10-year permit, could further reduce the level of paperwork required to maintain a CCR landfill permit. Lastly, some of the alternatives provided in response to questions 5e and 10b could also reduce the paperwork currently required by this administrative chapter.

9. DO OTHER STATE AGENCIES REGULATE THE ISSUES ADDRESSED BY THIS CHAPTER?

9a. Do any other state agencies regulate any issue(s) addressed by this chapter?

Yes No (check or circle)

If the answer is "yes," then answer questions 9b to 9e. If not, then proceed to question 10.

9b. If other state agencies regulate any issue(s) addressed by this chapter, provide the name of each agency, a description of how each agency is involved, and specify the subject matter regulated by each agency.)

Not Applicable

9c. Is there a need for more than one set of rules?

Yes No (check or circle)

If the answer is "yes," then proceed to question 9d. If not, then proceed to question 9e.

9d. If any other state agencies regulate any issue(s) addressed by this chapter and one or more of the other sets of rules are necessary, explain why.

Not Applicable

9e. If this chapter or a portion thereof is duplicative, explain how and why.

Not Applicable

10. IS THE CHAPTER USER FRIENDLY?

10a. Is the chapter written and organized in a clear and concise manner so that those to whom it applies can readily understand it?

Yes No (check or circle)

If the answer is "no," then answer question 10b. If not, then proceed to question 11.

10b. If not, explain what changes can be made to improve readability, eliminate ambiguity, or increase understanding. Be specific, to the extent possible.

Given there are only three rules within this administrative chapter, the ultimate readability of this administrative chapter is not in question. The issue pertains to the lack of detail with respect to fundamental design and operating requirements (e.g., location restrictions, liner and cap design, assessment monitoring and corrective action) that are considered standard industry practice.

All sanitary landfill chapters and their requirements should be organized and expressed in the same/similar manner, if requirements are not contained in a single administrative chapter. With that goal in mind, this administrative chapter is not organized in a clear and concise manner. While being too prescriptive is a deterrent to flexibility and innovation in meeting desired objectives, being too vague, as is the case with this administrative chapter, results in submittals that are incomplete and that fail to adequately protect human health and the environment as directed by Iowa Code chapter 455B and 40 CFR, Part 257.

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As stated prior, there are four administrative chapters pertaining to sanitary landfill regulation. The primary difference in each administrative chapter is the type of waste being managed. The goal of this administrative chapter could be achieved in a more efficient/streamlined manner by combining all sanitary landfill requirements into one administrative chapter. Those requirements specific to a certain type of waste stream or facility can be delineated in subsequent rules within said chapter. Consolidating these similar landfill chapters into one comprehensive administrative chapter would help eliminate duplication, resolve conflicting requirements, and lessen confusion as to what needs to be submitted by permit applicants.

Also, a significant area of ambiguity is with respect to large-scale fill operations (e.g., mine reclamation) pursuant to 567 IAC 108. Mine reclamation with CCR and CCR sanitary landfill disposal are comparable activities, but mine reclamation is not considered disposal and therefore not subject to SDP permitting requirements. This discrepancy in how CCR is managed in large-scale fill applications, and what environmental controls are deemed appropriate, warrants further debate and will need to be addressed within any future CCR beneficial use rulemaking.

11. ARE THE CITATIONS IN THE CHAPTER ACCURATE?

11a. If this chapter contains Iowa Code citations, are those citations proper and current?

Yes No Not Applicable (check or circle one option)

If the answer is "no," then answer question 11b. If not, then proceed to question 11c.

11b. If not, list and explain the corrections that need to be made to the Iowa Code citations.

567 IAC 103.2(1) references the ERRAP requirements in Iowa Code section 455B.306(6)"d," however, the correct citation is Iowa Code section 455B.306(7)"d". This incorrect ERRAP reference is also reiterated in 567 IAC 103.2(3)"e" and 567 IAC 103.2(4)"b"(1).

11c. If this chapter contains federal statutory citations, are those citations proper and current?

Yes No Not Applicable (check or circle one option)

If the answer is "no," then answer question 11d. If not, then proceed to question 11e.

11d. If not, list and explain the corrections that need to be made to the federal statutory citations.

Not Applicable

11e. If this chapter contains federal regulatory citations, are those citations proper and current?

Yes No Not Applicable (check or circle one option)

If the answer is "no," then answer question 11f. If not, then proceed to question 11g.

11f. If not, list and explain the corrections that need to be made to the federal regulatory citations.

567 IAC 103.3(6)"e"(5) references 40 CFR, Part 258.74, however, this section pertains to allowable financial assurance mechanisms. The correct reference for required cost estimates would be either to list the chapter in its entirety (40 CFR, Part 258, as was done in 567 IAC 103.3(6)"e"(2)"1" or to specify 40 CFR, Sections 258.71 through 258.73.

11g. If this chapter contains internal cross-reference citations, are those citations correct and current?

Yes No Not Applicable **(check or circle one option)**

If the answer is "no," then answer question 11h. If not, then proceed to question 11i.

11h. If not, list and explain the corrections that need to be made to the internal cross-references.

- 567 IAC 103.3(6)"b"(2) references 567 IAC 103.3(9) as the total cost estimate. The correct reference is 567 IAC 103.3(8).
- 567 IAC 103.3(6)"i"(4) and 567 IAC 103.3(6)"i"(5) reference the "pay-in period" defined in 567 IAC 103.3(6)"i." A more accurate reference would be 567 IAC 103.3(6)"i"(3).

11i. If the chapter contains cross-reference citations to other chapters, are those citations correct and current?

Yes No Not Applicable **(check or circle one option)**

If the answer is "no," then answer question 11j. If not, then proceed to question 11k.

11j. If not, list and explain the corrections that need to be made to the cross-references to other chapters or outside sources.

- 567 IAC 103.1 references 567 IAC 101.2 as the location for the DNR's variance provisions. The correct reference is 561 IAC 10.
- 567 IAC 103.1(2)"b" references 567 IAC 101.5 as the location for Solid Waste Comprehensive Plan approval requirements. The correct reference is 567 IAC 101.4.

11k. If this chapter contains website references, are those website references necessary, correct and current?

Yes No Not Applicable **(check or circle one option)**

If the answer is "no," then answer question 11l. If not, then proceed to question 11m.

11l. List and explain any necessary corrections to the website references.

Not Applicable

11m. If the chapter contains addresses and phone numbers, are the addresses and phone numbers necessary, correct and current?

Yes No Not Applicable **(check or circle one option)**

If the answer is "no," then answer question 11n. If not, then proceed to question 11o.

11n. List and explain any corrections that need to be made to the addresses and phone numbers contained in the chapter.

There is a reference to the Waste Management Assistance Division in 567 IAC 103.1(2)"b." The correct reference should be the Land Quality Bureau of the Environmental Services Division.

11o. If the chapter contains adoptions by reference, are those adoptions by reference correct and current?

Yes No Not Applicable **(check or circle one option)**

If the answer is "no," then answer question 11p. If not, then proceed to question 11q.

11p. List and explain any corrections that need to be made to update adoptions by reference.

567 IAC 103.3(6)"f"(2) and 567 IAC 103.3(6)"f"(3)"1" refer to Government Accounting Standards Board (GASB) Statement 18. GASB 18 pertains only to accounting standards for MSWLF closure and postclosure care costs, not CCR waste landfills for which this administrative chapter was adopted. References to GASB Statement 18 should be struck from this administrative chapter.

11q. If the chapter contains DNR-created documents adopted by references, are those document references necessary, correct and current?

Yes No Not Applicable **(check or circle one option)**

If the answer is "no," then answer question 11r. If not, then proceed to question 12.

11r. List and explain any corrections that need to be made to update the DNR-created document references.

567 IAC 103.1(2)"a" adopts the CCR permit application form 50.542-1542 by reference. The correct permit application form number is 542-1600.

12. WHAT PUBLIC GROUPS ARE AFFECTED BY THE CHAPTER?

12a. List any stakeholder groups, workgroups, public groups or other public participants impacted by the issues in the chapter.

Potential interested parties: Public and private agencies operating or planning to operate a CCR

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sanitary landfill or surface impoundment in Iowa, Iowa Society of Solid Waste Operations (ISOSWO), Association of Business and Industry (ABI), Iowa Utility Association (IUA), Iowa Solid Waste Comprehensive Planning Areas, Iowa League of Cities, Iowa State Association of Counties (ISAC), Iowa Department of Agriculture and Land Stewardship (IDALS), Iowa Environmental Council (IEC), Sierra Club – Iowa Chapter, Iowa Recycling Association (IRA), Iowa Association of Municipal Utilities (IAMU), Iowa Groundwater Association, County Environmental Health Sanitarians, Iowa Citizens for Community Improvement, Linwood Mines & Minerals, Lee Crawford Quarry, Wendling Quarries, Inc., BMC Aggregates LC., Iowa Limestone Producers Association, and the U.S. EPA.

12b. If any stakeholders have already been included in a review process for this chapter during the past five years, state the names of those stakeholder groups, workgroups, public groups, or other public participants, and explain the nature of their involvement.

External stakeholder feedback has not been sought in the past five years regarding revisions to this chapter.