

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	R14-10
COAL COMBUSTION WASTE (CCW))	
SURFACE IMPOUNDMENTS AT POWER)	(Rulemaking- Water)
GENERATING FACILITIES: PROPOSED)	
NEW 35 ILL. ADM. CODE 841)	

NOTICE OF FILING

PLEASE TAKE NOTICE that I have filed today with the Illinois Pollution Control Board ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S PREFILED ANSWERS, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/Joanne M. Olson
Joanne M. Olson
Assistant Counsel
Division of Legal Counsel

Date: July 17, 2014

1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544

THIS FILING IS SUBMITTED ELECTRONICALLY AND SERVED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	R14-10
COAL COMBUSTION WASTE (CCW))	
SURFACE IMPOUNDMENTS AT POWER)	(Rulemaking- Water)
GENERATING FACILITIES: PROPOSED)	
NEW 35 ILL. ADM. CODE 841)	

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S
PREFILED ANSWERS**

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, (Illinois EPA or Agency) by and through its counsel, and hereby submits prefiled answers attached hereto as Attachment A, and revised rule language attached hereto as Attachment B.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/Joanne M. Olson
Joanne M. Olson
Assistant Counsel
Division of Legal Counsel

1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544

THIS FILING IS SUBMITTED ELECTRONICALLY AND SERVED ON RECYCLED PAPER

ATTACHMENT A

Questions for the Agency

Section 841.105(a)

1. Section 841.105(a) sets forth, “Except as specified in subsection (b) of this Section, this Part applies to all surface impoundments at power generating facilities containing coal combustion waste or leachate from coal combustion waste that are: (1) operated on or after the effective date of these rules; or (2) not operated after the effective date of these rules, but whose coal combustion waste or leachate from coal combustion waste causes or contributes to an exceedence of the groundwater quality standards on or after the effective date of these rules.”

- (a) In response to Board's question No. 13(a) (Hearing Officer Order, February 5, 2014), the Agency stated that “not operated” after the effective date of the rules means that the surface impoundment is not receiving any kind of waste or stormwater. Exh. 3, Attach. 1 at 9. Please comment on whether an impoundment “not operated” after the effective date of the proposed rules should have also initiated closure in accordance with an Agency approved closure plan to be exempted from Part 841.

AGENCY RESPONSE: No. The Agency did not intend that impoundments not operated after the effective date of the proposed rules to have initiated closure in accordance with an Agency approved closure plant to be exempt from Part 841. This exemption was designed to apply to legacy sites that may have stopped operating decades ago so long as they were not currently causing groundwater problems.

- (b) If closure initiation is not required for an impoundment to be exempt under subsection 841.105(a)(2), please comment on whether a surface impoundment exempt under subsection (a)(2) would become subject to Part 841 regulations if the impoundment resumes operation sometime after the effective date of these regulations even if it is not causing or contributing to an exceedence of the groundwater quality standards.

AGENCY RESPONSE: Yes. If an impoundment exempt under proposed subsection (a)(2) began receiving any waste stream, including stormwater, the impoundment would be subject to these rules.

- (c) Please explain what closure requirements would apply to CCW surface impoundments exempt under subsection 841.105(a)(2) when owners or operators decide to close such facilities. If such closure requirements are similar to the proposed closure requirements for CCW impoundments not impacting groundwater under Section 841.Subpart D, explain the rationale for not requiring CCW impoundments exempt under subsection 841.105(a)(2) to comply with the proposed closure requirements under Part 841, Subpart D.

ATTACHMENT A

AGENCY RESPONSE: The exemption in subsection (a)(2) was added to address retroactivity concerns raised during outreach meetings held by the Agency before the rule was filed. The Agency tried to address these concerns by limiting the applicability of proposed Part 841 to units operating or causing groundwater pollution after the effective date of the rules. When developing this exemption, the Agency found that two CCW surface impoundments fall within this exemption, and one of these units is capped. Many of the older CCW surface impoundments in Illinois would not be exempt under subsection (a)(2) because the CCW or leachate from CCW causes or contributes to an exceedence of the groundwater quality. There may be other legacy CCW surface impoundments to which this exemption applies, but the Agency is currently not aware of any.

In the event there is a CCW surface impoundment not operating and not causing groundwater contamination after the rules become effective, the Agency did not intend to require the owners or operators to close under an Agency approved closure plan. The Agency would, however, have enforcement measures available for violations of Section 12(a) of the Environmental Protection Act (Act), and permitting authority for any construction activities capable of causing or contributing to water pollution or designed to prevent water pollution under Section 12(b) of the Act. Depending on the closure activities, an NPDES permit for Storm Water Discharges from Construction Site Activities may be required.

- (d) If the exemption under subsection 841.105(a)(2) is intended to “grandfather” existing impoundments, which are “not operating” and not impacting groundwater from the proposed regulations, please comment on whether that exemption should apply only if such facilities have initiated closure pursuant to any existing closure plan before the effective date of the proposed regulations.

AGENCY RESPONSE: The Agency does not believe initiating closure before the effective date of the rules should be required to be exempt from these rules. The exemption should apply whether or not closure has been initiated. If the groundwater data currently available to the Agency does not indicate that the unit is contributing to an exceedence of groundwater quality standards, the Agency does not believe there is a need to initiate closure. In the event that subsequent groundwater monitoring indicates that an exempt unit is causing or contributing to the exceedence of a groundwater quality standard, the unit will then be subject to Part 841.

841.110 Definitions

2. “Surface impoundment” is defined in 35 Ill. Adm. Code 720.110 and 810.103 somewhat differently than the Agency's proposed definition in 841.110. The definition in section 720.110 tracks USEPA's proposed definition of “CCR surface impoundment”, while the definition in section 810.103 makes the distinction that “a surface impoundment is not a

ATTACHMENT A

landfill.” 75 FR 35239-35240. The Environmental Groups have suggested including this distinction specifically for permitted landfills. Env. Groups Post Hearing Comments (June 9, 2014). To differentiate a surface impoundment under proposed Part 841 from other parts, please comment on providing a definition specifically for a “coal combustion waste surface impoundment” under the newly proposed Part 841, and whether it should track USEPA's proposed language more closely and distinguish it from permitted landfills.

AGENCY RESPONSE: The Agency does not believe a definition specifically for "coal combustion waste surface impoundment" is necessary. The rule as proposed by the Agency uses the term "unit" throughout which is defined as "any surface impoundment at a power generating facility that contains coal combustion waste or leachate from coal combustion waste." The Agency has no objection to adding language from the proposed federal rule, "which is not an injection well", to the definition of surface impoundment in proposed Section 841.115. The Agency believes its language requiring that the earthen materials provide structural support to be necessary to distinguish surface impoundments from ditches, collection trenches, tanks, or piping.

If the Board were to adopt a definition specifically for "coal combustion waste surface impoundment", it would also need to modify the definition of "unit" to ensure continuity of the rule.

3. In response to the Board's question No. 21(b) and (c) (Hearing Officer Order, February 5, 2014), the Agency suggested revised language for the definition of “Compliance point”, but the spatial description still seems a bit unclear. Instead of the language suggested, would the Agency please comment on the following or suggest revised language again?

“Compliance point” means any point in the groundwater designated at a lateral distance of 25 feet from the uppermost outer edge of the unit projected vertically downward, or the property boundary, whichever is less, to and a depth of 15 feet from the deepest part ~~bottom~~ of the unit or 15 feet below the groundwater table, whichever is greater

AGENCY RESPONSE: The Agency has redrafted the compliance point definition with some additional language intended to clarify the point from which the compliance point measurements are made. In their proposal, the Environmental Groups suggested the use of the term “closer” instead of “less” when referring to the compliance point distance. As the Agency does not believe there is a difference in meaning as used in the context of this definition, the Agency has used the term “closer” in an effort to make the definition clearer to all parties.

"Compliance point" means any point in groundwater designated at a lateral distance of 25 feet measured parallel to the land surface from the outer edge of the unit or to the property boundary, whichever is closer and projected vertically downward, to a depth equal to 15 feet deeper than the bottom of

ATTACHMENT A

the unit or 15 feet into the groundwater table, whichever is greater. For the purposes of this Part, the outer edge is the toe of the CCW or leachate surface impoundment berm, or for CCW or leachate surface impoundments that are incised into the ground, the outer edge is the edge of the excavation. If the owner or operator has a GMZ pursuant to 35 Ill. Adm. Code 620.250 for the site or unit, compliance point means any point as specified in an approved corrective action process. There may be more than one compliance point for a particular unit(s)/GMZ.

The Agency has included a graphic depicting the compliance point in Attachment D.

Section 841.415 Final Slope and Stabilization

4. The Environmental Groups stated that, under the Agency's proposed section 841.420, CCW used in establishing the final grade and slope for the unit and earthen berms surrounding the unit would not necessarily be covered by the final cover system. As such, the Environmental Groups expressed concern that the proposed final cover system would not specifically require erosion of berms containing CCW to be minimized. The Environmental Groups cite to Dr. Soderberg's testimony that this could lead to exposed CCW on the berms. PC 1879 at 18-19. Are there any revisions you would suggest for proposed Section 841.420 Final Cover System to clarify the reach of the final cover system to encompass all CCW used in establishing the final grade and slope?

AGENCY RESPONSE: The Agency proposes the following revisions:

Section 841.415(a)

- a) **All final slopes, including earthen berms, must be designed and constructed to achieve a minimum static slope safety factor of 1.5 and a minimum seismic safety factor of 1.3, and a grade capable of supporting vegetation and minimizing erosion.**

Section 841.420(a)(5)

- 5) Cover all CCW in the unit, including any coal combustion waste used to establish the final grade and slope pursuant to Section 841.415(d).**

5. In response to question 43(c) in the Board's Hearing Officer Order dated February 5, 2014, the Agency stated, "[I]n 2013, the Agency discussed with IDNR [Illinois Department of Natural Resources] including a reference to the dam safety regulations [35 Ill. Adm. Code 3702] in the proposed rule to ensure any work done on the impoundment dams would comply with the dam safety regulations." Exh. 5 at 22. The latest proposal from the Agency doesn't appear to reference the dam safety regulations. Please comment on including a reference to IDNR's dam safety regulations in proposed Section 841.415 or elsewhere, and consider suggesting language.

ATTACHMENT A

AGENCY RESPONSE: The Agency asked DNR about including a cross reference to the dam safety regulations in proposed Part 841. DNR rejected this approach. See Hearing Transcript, February 27, 2014, Page 42:3-7. The Agency believes that DNR is concerned about the prospect of duplicative regulations. Therefore, the Agency recommends the addition of the following at the end Section 841.170 Inspection:

BOARD NOTE: Dam safety regulation is under the purview of the Illinois Department of Natural Resources pursuant to 17 Ill. Adm. Code 3702.

841.400 Surface Impoundment Closure

6. Under Section 841.400(b), the Environmental Groups' proposal would require removal of CCW upon closure unless “that removal is technically infeasible or would not result in greater protection of human health and the environment”, except where units are present in the water table, floodplain, wetland, or above mine or fault. PC 1879 at 841.400(b).

USEPA's proposal (June 21, 2010) would allow closure of a CCW surface impoundment with CCW in place or through CCW removal and decontamination, with no specific limitations. Proposed 40 CFR 257.100(b) and (c), 75 FR 35252.

USEPA states, “Although [US]EPA anticipated that facilities will most likely not clean close their units, given the expense and difficulty of such an operation, [US]EPA believes that they are generally preferable from the standpoint of land re-use and redevelopment, and so wishes to explicitly to allow for such action in the proposed subtitle D rule.” 75 FR 35208.

In determining whether to remove CCW or close in place, USEPA states, “One tool that can be used to help evaluate whether waste removal is appropriate at the site is the risk-based corrective action process (RBCA) using recognized and generally accepted good engineering practices such as the ASTM Ec0-RBCA process.” 75 FR 35208.

The Agency has stated, “The Agency does not support the use of the Tiered Approach to Corrective Action Objectives [TACO] rules (35 Ill. Adm. Code Part 742) under proposed Part 841.” Agency Post Hearing Comments (4-30-14), Att. 1 at 1. Instead, the Agency supports the use of the Part 620 groundwater quality standards “because of its focus on groundwater protection, which contrasts with the TACO rules' focus on the cleanup of existing contamination.” Id.

- (a) In developing a closure plan and evaluating whether to remove CCW or close in place, please comment on the plausibility of using a risk-based approach or a different approach that would, among other things, address location issues such as those raised by the Environmental Groups (i.e. in the water table, floodplain, wetland, or above mine or fault).

AGENCY RESPONSE: The Agency does not believe a TACO-like risk-based approach should be used to evaluate whether a CCW surface

ATTACHMENT A

impoundment should close by removal or capping. As stated in proposed Section 841.500(c)(3), the Agency should evaluate whether the closure plan will result in the containment of CCW and the attainment of the applicable groundwater quality standard. In addition, the Agency should evaluate the management of risk of remaining CCW when reviewing closure plans, as required by proposed Section 841.500(c)(3)(B).

The Agency believes the best process for evaluating and approving closure plans is a flexible approach whereby the Agency can use its professional judgment in evaluating site-specific information and characteristics. The Agency does not believe a highly prescriptive, risk-based approach is appropriate or necessary because such approach leaves no room for professional judgment. Numerous site-specific factors affect whether closure by capping or closure by removal will cause a violation of the Environmental Protection Act or the Board's regulations.

The rule, as proposed by the Agency, already requires owner or operators of CCW surface impoundments to submit information and evaluations necessary for the Agency to evaluate the risk of remaining CCW after closure has been completed. Please see Attachment C for a list of the information currently required to be submitted under the Agency's proposal. Publicly available databases supported by IDNR and the ISGS map known mines, faults, major aquifers and karst areas. Owners and operators should view these data sets to evaluate proximity to CCW surface impoundments and submit that data in the appropriate document or plan. Existence of these manmade and natural features may require specific design and engineering considerations.

In addition, the Agency now proposes requiring the owner or operator submit modeling with each corrective action plan and closure plan. Instead of a risk-based approach, the Agency proposes 11 factors to be considered by the Agency when approving a corrective action or closure plan. These factors include the location of CCW in the water table, location of the CCW surface impoundment in a wetland, flood plain, fault area, or unstable area, surface impoundment design, institutional controls on the use of groundwater, length of time to complete closure, reduction of future releases, potential need to amendment or replace the closure plan, effectiveness of alternatives, type of long term maintenance, and availability of treatment, storage and disposal service.

The Agency also proposes language to the corrective action and closure plan sections (proposed sections 841.310 and 841.410) to work in conjunction with the 11 risk factors. First, the Agency proposes requiring submission of modeling to assess the proposed corrective action or closure be submitted with the plan. Second, the Agency proposes requiring that the owner or operator conduct an alternative impact analysis, which includes an

ATTACHMENT A

assessment of alternatives to the proposed corrective action or plan. Third, the Agency proposes requiring the owner or operator evaluate the same 11 risk factors the Agency considers in its review process. As corrective action plans and closure plans must be prepared by a professional engineer, the Agency anticipates that the evaluation of risks will be prepared, reviewed or signed-off by a professional engineer.

The Agency should be given latitude to evaluate the conditions unique to each site in determining whether to approve or disapprove a proposed closure plan. These are site specific determinations that should be made using professional judgment, which is consistent with proposed Part 841 being a rule of general applicability.

In light of the above, the Agency proposes the following changes to Sections 841.500(c), 841.310(e) and 841.410(a).

Section 841.500(c) Plan Review, Approval, and Modification

c) When reviewing a plan or modification, the Agency must consider:

* * *

3) When reviewing a corrective action plan, closure plan or post closure plan, or modification to any of these plans, the following factors:

A) The likelihood that the plan or modification will result in the containment of the coal combustion waste or leachate from coal combustion waste and the attainment of the applicable groundwater quality standards set forth in 35 Ill. Adm. Code 620.

B) The management of risk to human health and the environment relative to any remaining contamination, including, but not limited to: ~~provisions for~~

i) location of the CCW surface impoundment in a wetland, flood plain, fault area, unstable area;

ii) whether CCW will remain in contact with the natural water table after closure;

iii) the surface impoundment design and the long term reliability of the surface impoundment;

ATTACHMENT A

- iv) use of engineering measures designed to mitigate risk to human health and the environment;**
- v) the use of long-term restrictions on the use of groundwater as a potable water supply, if appropriate;**
- vi) the long-term and short-term effectiveness and protectiveness of the alternative corrective action or closure options evaluated in the alternative impact assessment as required by Section 841.410(e)(6) or Section 841.410(a)(6);**
- vii) the extent to which the corrective action or closure plan will reduce further releases;**
- viii) the potential need for replacement or amendment of the selected corrective action or closure alternative;**
- ix) the length of time until full corrective action or closure is completed;**
- x) the type and degree of long-term management required, including monitoring, operation, and maintenance;**
- xi) the available capacity and location of needed treatment, storage, and disposal services.**

Section 841.310(e) Corrective Action Plan

- e) The corrective action plan must contain the following:**
 - 1) description of the activities to be performed at the site, in accordance with the requirements of this Part, to mitigate the groundwater quality standard exceedence;**
 - 2) results of modeling performed to assess how the proposed corrective action will result in attainment of the applicable groundwater quality standards set forth in 35 Ill. Adm. Code 620.**
 - 3) proposed plans, specifications, and drawings for the proposed corrective action;**

ATTACHMENT A

- 4)3) proposed timeline for implementation and completion of all proposed corrective actions;**
- 5)4) a copy of the following plans and investigations:**
 - A) groundwater monitoring plan required pursuant to Section 841.210 of this Part,**
 - B) hydrogeologic site characterization required by Section 841.200 of this Part and any other hydrogeological site investigation performed under this Part; and**
 - C) a copy of the most recent annual statistical analysis required by Section 841.235 of this Part;**
- 6) an alternative impact assessment which includes:**
 - A) the purpose and anticipated benefits of the proposed corrective action.**
 - B) identification and characterization of any surface water or groundwater affected by the proposed corrective action**
 - C) potential impacts of the corrective action on groundwater and surface water quality.**
 - D) technical and economic assessment of alternatives to the proposed corrective action, which may include the following:**
 - i) additional treatment levels of any wastewater discharged to waters of the United States, including no discharge alternatives;**
 - ii) discharges of waste waters to alternate locations, if applicable;**
 - iii) seasonal discharge options, if applicable;**
 - iv) closure of the unit, including closure by removal of coal combustion waste and leachate from coal combustion waste;**
 - v) installation or replacement of liner systems; and**

ATTACHMENT A

- vi) pollution prevention measures such as operation or process changes, wastewater recycling and reuse, rerouting waste streams within the facility, improved operation and maintenance
- ~~7)~~ evaluation of the factors listed in Section 841.500(c)(3)(B);
- ~~8)~~ estimates of the cost of the corrective action;
- ~~9)~~ a proposal for a GMZ as set forth in 35 Ill. Adm. Code 620.250, if applicable, including but not limited to groundwater modeling results and supporting documentation;
- ~~10)~~ description of the CQA program required by Section 841.155 of this Part;
- ~~11)~~ description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls;
- ~~12)~~ an evaluation of the effects of a cover, when requested by the Agency;
- ~~13)~~ description of any preventive response plan developed pursuant to Section 841.235 of this Part or 35 Ill. Adm. Code 620.230, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that were constructed; and
- ~~14)~~ the signature and seal of the professional engineer supervising the preparation of the corrective action plan.

Section 841.410(a) Closure Plan

- a) The closure plan must contain, at a minimum, the following information or documents:
 - 1) description of the closure activities to be performed in accordance with this Part and any additional activities performed by the owner or operator with regards to closing the unit, including any dewatering;
 - 2) results of modeling performed to assess how the proposed closure will result in attainment of the applicable groundwater quality standards set forth in 35 Ill. Adm. Code 620;

ATTACHMENT A

- 3) proposed plans, specifications and drawings for the closure of the unit, which may include but are not limited to the following illustrative measures:**
 - A) the groundwater collection system and discharge system, if applicable, set forth in Sections 841.315 and 841.320 of this Part;**
 - B) the final slope design and construction and demonstration of compliance with the stability criteria required in Section 841.415 of this Part;**
 - C) the final cover system required by Section 841.420 of this Part;**
 - D) containment using a low permeability vertical barrier; and**
 - E) other remedial measures approved by the Agency;**
- ~~3) evaluation of alternatives to the proposed closure activities, when requested by the Agency.~~
- 4) proposed timeline for implementation and completion of all proposed closure activities, including an estimate of the time required for hydrostatic equilibrium of groundwater beneath the unit;**
- ~~5) estimates of the cost of closure and post-closure care;~~
- 5)6) a copy of the following plans and investigations:**
 - A) groundwater monitoring plan required pursuant to Section 841.210 of this Part,**
 - B) hydrogeologic site characterization required by Section 841.200 of this Part and any other hydrogeological site investigation performed under this Part; and**
 - C) a copy of the most recent annual statistical analysis required by Section 841.235 of this Part;**
- 6) an alternative impact assessment which includes:**
 - A) the purpose and anticipated benefits of the proposed closure.**

ATTACHMENT A

- B)** **identification and characterization of any surface water or groundwater affected by the proposed closure.**
- C)** **potential impacts of the closure on groundwater and surface water quality.**
- D)** **technical and economic assessment of alternatives to the proposed closure, which may include the following:**
 - i)** **additional treatment levels of any wastewater discharged to waters of the United States, including no discharge alternatives;**
 - ii)** **discharges of waste waters to alternate locations, if applicable;**
 - iii)** **beneficial reuse of CCW;**
 - iv)** **closure by removal of coal combustion waste and leachate from coal combustion waste; and**
 - iv)** **pollution prevention measures such as operation or process changes, wastewater recycling and reuse, rerouting waste streams within the facility, improved operation and maintenance**
- 7)** **evaluation of the factors listed in Section 841.500(c)(3)(B);**
- 8)** **estimates of the cost of closure and post-closure care;**
- 9)7)** **a proposal for a GMZ as set forth in 35 Ill. Adm. Code 620.250, if applicable, and including, but not limited to, plans, specifications, drawings for any structures or devices that must be constructed, and groundwater modeling results and supporting documentation where appropriate;**
- 10)8)** **description of the CQA program required by Section 841.155 of this Part;**
- 11)9)** **description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls;**
- 12)10)** **description of previous preventive response plan developed pursuant to Section 841.235 of this Part or 35 Ill. Adm. Code**

ATTACHMENT A

620.230, or corrective action pursuant to Subpart C of this Part or 35 Ill. Adm. Code 620.250, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that were constructed; and

13)41) the signature and seal of the professional engineer supervising the preparation of the closure plan.

- (b) Although the Agency doesn't favor using TACO for corrective action at a CCW site, could a risk-based approach, like TACO, be used to identify and exclude migration pathways and human or ecological receptors in evaluating whether CCW removal would be appropriate or would result in "greater protection of human health and the environment". PC 1879 at 841.400(b).

AGENCY RESPONSE: The Agency does not believe that a risk-based approach would be appropriate to identify and exclude migration pathways and related human and ecological receptors when determining the appropriate method of closure. The Agency addressed its position regarding the use of TACO to identify and exclude migration pathways for human receptors in Section D of Attachment 1 of its post-hearing comment, dated April 30, 2014. The Agency's concerns regarding using TACO to identify and exclude migration pathways are applicable to other risk-based approaches as well. The Agency crafted its proposal to, among other things, to "restore, enhance and maintain the purity of the waters of this State," as set forth in Section 11(b) of the Act. 415 ILCS 5/11(b). As a result, the Agency employed Part 620 to serve as the appropriate groundwater quality standard. Under Part 620, after corrective action is completed, a facility may seek an alternative groundwater quality standards above the numeric limits, but only after the exceedence has been minimized and beneficial use as been returned. Consequently, the Agency favors an approach in which the owner or operator of a unit takes steps to return the beneficial use of contaminated groundwater, rather than excluding an exposure pathway by eliminating access to and future beneficial use of that groundwater.

The Agency recognizes that in some instances an institutional control may be necessary because the Part 620 numeric standards are not achievable following corrective action. Therefore, under the Agency's proposal, the owner or operator of a unit may use an institutional control or other mechanism to exclude a migration pathway only as evidence that threats to the public health and environment have been minimized, in order to obtain an alternative groundwater standard.

- (c) If the Agency believes a risk-based approach would be appropriate for evaluating whether to remove CCW or close in place, taking into consideration location

ATTACHMENT A

factors and migration pathways, would the Agency please consider proposing language?

AGENCY RESPONSE: Please see Response to question 6(a) above.

- (d) If the Agency believes a different approach would be appropriate for evaluating whether to remove CCW or close in place, would the Agency please consider proposing language?

AGENCY RESPONSE: Please see Response to question 6(a) above.

841.400(d) Deed notation

7. USEPA's proposed rules at 40 CFR 257.72 for new CCW surface impoundments would require "A permanent identification marker, at least six feet high and showing the identification number of the [CCW] surface impoundment, if one has been assigned by the state, the name associated with the [CCW] surface impoundment and the name of the person owning or operating the structure. ..." 75 FR 35244. Please comment on whether the Agency believes including a similar provision as part of the closure process would be beneficial in addition to the deed notation. If so, please suggest proposed language.

AGENCY RESPONSE: The Agency does not believe including a similar provision as a part of the closure process is necessary.

Section 841.405 Closure Prioritization

8. USEPA's proposed rules at 40 CFR 257.65(a) include a provision that "Existing [CCW] ... surface impoundments that cannot make the demonstration specified in [40 CFR] 257.64(a) pertaining to unstable areas, must close by [[date five years after the effective date of the final rule]...." 75 FR 35243. The demonstration pertaining to unstable areas under proposed 40 CFR 257.64 requires "that engineering measures have been incorporated into the ... surface impoundment ... design to ensure that the integrity of the structural components of the ... surface impoundment will not be disrupted." 75 FR 35242. Should closure prioritization under proposed section 841.405 include a requirement that CCW surface impoundments make a similar demonstration?

AGENCY RESPONSE: The Agency does not believe that Section 841.405 should include a similar demonstration. Under the proposed rules, as drafted by Illinois EPA, the owner or operator of CCW unit can choose between corrective action or closure when there has been a confirmed exceedence of the groundwater quality standards. To put the demonstration requirement described above in just the closure prioritization section would only capture those facilities electing to close instead of performing corrective action. In response to Board question 6(a), the Agency proposes risk factors the Agency must consider in reviewing a corrective action plan or a closure plan. These risk factors include unstable areas, as defined by the proposed federal rule. See new proposed Section 841.500(c)(3)(B). As a part

ATTACHMENT A

of the corrective action plan or closure plan, the owner or operator must evaluate the whether the surface impoundment is over an unstable area, wetland, flood plain, or fault area. See new proposed Section 841.310(e)(7) and 841.410 (a)(7). Additionally, the owner or operator must evaluate the long term reliability of the surface impoundment design and the use of engineered measures to mitigate risk to human health and the environment. The corrective action plan or closure plan must be signed by a professional engineer. The Illinois EPA believes this evaluation of risk, signed by professional engineer, is sufficient, and the demonstration contained in the federal proposal is unnecessary.

Design Criteria

9. In response to the Board's question No. 7(g) (Hearing Officer Order, February 5, 2014), the Agency stated that “including design criteria for new CCW surface impoundments is a good idea” and that the Agency “would like to conduct outreach and gather input from the regulated community and environmental groups to develop design criteria.” Exh. 5 at 5. The Agency indicated that a starting point would most likely be 35 Ill. Adm. Code 370, and that the Board could reserve Sections 841.200 through 841.300 for future design criteria.

(a) Did the Agency mean 35 Ill. Adm. Code 370 Illinois Recommended Standards for Sewage Works?

AGENCY RESPONSE: Yes.

(b) Can the Agency describe a tentative schedule for conducting outreach, gathering input, and potentially proposing design standards?

AGENCY RESPONSE: The Illinois EPA proposes the following tentative schedule.

Drafting: July 24, 2014 to January 15, 2015.

Outreach: January 15, 2015 to March 24, 2015.

Proposal to the Board: April 24, 2015.

(c) During that time, does the Agency expect the filing of permit applications for new CCW surface impoundments? If so, can the Agency estimate how many?

AGENCY RESPONSE: The Agency has no requests pending in-house at this time. Also, the Agency has no knowledge of permittees/applicants requesting construction of new CCW surface impoundments in the near future. The last new ash pond was permitted by the Agency more than a couple of years ago. The Agency believes the adoption of the federal RCRA rules and the effluent guidelines for power plants might trigger submission of several new applications/requests.

ATTACHMENT A

- (d) Please explain what the Agency might do to ensure potential design criteria are considered for new CCW surface impoundments in the meantime.

AGENCY RESPONSE: The Illinois EPA will consider the design of the proposed surface impoundment before issuing a construction permit under the Act. If the design does not adequately protect groundwater or surface water, the Agency will deny the permit. Also, under Section 39 of the Act, the Agency may condition a permit to accomplish the purposes of this Act. The Agency believes it has the authority to require protective design standards, which may vary on a site-specific, case-by-case basis.

- (e) Please explain if the Agency believes adoption of the proposed rules should wait for the completion of the outreach process on design criteria or if proceeding without the design criteria at this time would allow the rules to more promptly address the most pressing issues regarding existing CCW surface impoundments.

AGENCY RESPONSE: As stated in the motion to sever, the Agency believes the proposed rules should move forward without waiting for the completion of the design criteria. Some owners and operators of CCW surface impoundments want to close their impoundments now, and waiting until design criteria are established is unnecessary.

ATTACHMENT B Revised Rule Language July 17, 2014

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER j: COAL COMBUSTION WASTE SURFACE IMPOUNDMENTS

PART 841
COAL COMBUSTION
WASTE SURFACE IMPOUNDMENTS AT POWER GENERATING FACILITIES

SUBPART A: GENERAL¹

Section	
841.100	Purpose
841.105	Applicability
841.110	Definitions
841.115	Abbreviations and Acronyms
841.120	Incorporations by Reference
841.125	Groundwater Quality Standards
841.130	Compliance Period
841.135	Recordkeeping
841.140	Submission of Plans, Reports and Notifications
841.145	Previous Investigations, Plans and Programs
841.150	Modification of Existing Permits
841.155	Construction Quality Assurance Program
841.160	Photographs
841.165	Public Notice
<u>841.170</u>	<u>Inspection</u> ²

SUBPART B: MONITORING

Section	
841.200	Hydrogeologic Site Characterization
841.205	Groundwater Monitoring System
841.210	Groundwater Monitoring Plan
841.215	Chemical Constituents and Other Data to Be Monitored
841.220	Determining Background Values
841.225	Statistical Methods
841.230	Sampling Frequency
841.235	Annual Statistical Analysis
841.240	Inspection ³

¹. Double underline and strikethrough indicate the most recent changes to the Illinois EPA's proposed rule, now in its third draft. Single underline and strikethrough are proposed changes appearing on Illinois EPA's second draft filed as a post hearing comments on March 25, 2014.

² Hearing Exhibit 5, Attachment 1, p.22.

³ Hearing Exhibit 5, Attachment 1, p.22.

ATTACHMENT B Revised Rule Language July 17, 2014

SUBPART C: CORRECTIVE ACTION

Section	
841.300	Confirmation Sampling
841.305	Alternative Cause Demonstration
841.310	Corrective Action Plan
841.315	Groundwater Collection System
841.320	Groundwater Discharge System
841.325	Corrective Action Report and Certification

SUBPART D: CLOSURE

Section	
841.400	Surface Impoundment Closure
841.405	Closure Prioritization
841.410	Closure Plan
841.415	Final Slope and Stabilization
841.420	Final Cover System
841.425	Closure Report and Certification
841.430	Post-Closure Maintenance of Cover System
841.435	Post-Closure Care Plan
841.440	Post-Closure Report and Certification
841.445	Closure and Post-Closure Annual Reporting
841.450	Resource Conservation and Recovery Act

SUBPART E: AGENCY REVIEW PROCEDURES

Section	
841.500	Plan Review, Approval, and Modification
841.505	Review and Approval of Reports and Certifications

AUTHORITY: Implementing Sections 12 and 22 of the Environmental Protection Act [415 ILCS 5/12 and 22] and authorized by Sections 13, 22, 27, and 28 of the Environmental Protection Act [415 ILCS 5/13, 22, 27, and 28].

SOURCE: Adopted in R__-__ at __ Ill. Reg._____, effective _____.

SUBPART A: GENERAL

Section 841.100 Purpose

This Part establishes criteria, requirements and standards for site characterization, groundwater monitoring, preventive response, corrective action and closure of surface impoundment units containing coal combustion waste or leachate from coal combustion waste at power generating facilities.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.105 Applicability

- a) Except as specified in subsection (b) of this Section, this Part applies to all units ~~surface impoundments at power generating facilities~~ containing coal combustion waste or leachate from coal combustion waste that are:
- 1) operated on or after the effective date of these rules; ~~or~~
 - 2) not operated after the effective date of these rules, but whose coal combustion waste or leachate from coal combustion waste causes or contributes to an exceedence of the groundwater quality standards on or after the effective date of these rules; or
 - 3) within a groundwater management zone established pursuant to 35 Ill. Adm. Code 620.250 where the groundwater quality exceedence is attributable to a release from the unit if the corrective action process described in 35 Ill. Adm. Code 620.250(a) has not been completed and attainment of the applicable standards in 35 Ill. Adm. Code 620.410, 620.420, 620.430, 620.440 or 620.450(a)(4) have not been achieved before the effective date of these rules.⁴
- b) This Part does not apply to any ~~surface impoundment~~ unit:
- 1) operated under a solid waste landfill permit issued by the Agency;
 - 2) operated pursuant to procedural requirements for a landfill exempt from permits under 35 Ill. Adm. Code 815;
 - 3) subject to 35 Ill. Adm. Code 840;
 - 4) used to store coal combustion waste or leachate from coal combustion waste when all of the following conditions are met:
 - A) at least two feet of material with a permeability equal or superior to 1×10^{-7} centimeters per second, or an equivalent synthetic liner lines the bottom of the unit;
 - B) the coal combustion waste or leachate from coal combustion waste remains in the unit for no longer than one year; and
 - C) the unit's maximum volume is no more than 25 cubic yards; or

⁴ The proposed addition of Section 841.105(a)(3) is intended to clarify that those units within a groundwater management zone are within the proposed rule's applicability.

ATTACHMENT B Revised Rule Language July 17, 2014

- 5) that does not contain more than one cubic yard of CCW and is⁵ used to only collect stormwater runoff, which does not contain leachate.

BOARD NOTE: A unit not subject to this Part should maintain records demonstrating how the exemption in subsection (b) applies or how the unit is outside the scope of application set forth in subsection (a).⁶

Section 841.110 Definitions

Unless otherwise specified, the definitions of the Environmental Protection Act (Act) [415 ILCS 5] apply to this Part. The following definitions also apply:

"Agency" means the Illinois Environmental Protection Agency.

"Aquifer" means saturated (with groundwater) soils and geologic materials which are sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients. [415 ILCS 55/3(b)]

"Board" means the Illinois Pollution Control Board.

"Certified Laboratory" means any laboratory certified pursuant to Section 4(o) of the Act [415 ILCS 5/4(o)], or certified by USEPA.⁷

"Coal combustion waste" means any fly ash, bottom ash, slag, or flue gas or fluid bed boiler desulfurization by-products generated as a result of the combustion of:

- (1) *coal, or*
- (2) *coal in combination with: (i) fuel grade petroleum coke, (ii) other fossil fuel, or (iii) both fuel grade petroleum coke and other fossil fuel, or*
- (3) *coal (with or without: (i) fuel grade petroleum coke, (ii) other fossil fuel, or (iii) both fuel grade petroleum coke and other fossil fuel) in combination with no more than 20% of tire derived fuel or wood or other materials by weight of the materials combusted; provided that the coal is burned with other materials, the Agency has made a written determination that the storage or disposal of the resultant wastes in accordance with the provisions of item (r) of Section 21 would result in no environmental impact greater than that of wastes generated as a result of the combustion of coal*

⁵ Hearing Exhibit 5, Attachment 1, p.11.

⁶ Illinois EPA's Post Hearing Comments, Attachment 1, p. 4, March 25, 2014.

⁷ Hearing Exhibit 5, Attachment 1, p.20.

ATTACHMENT B Revised Rule Language July 17, 2014

alone, and the storage disposal of the resultant wastes would not violate applicable federal law. [415 ILCS 5/3.140]

"Compliance point"⁸ means any point in groundwater designated at a lateral distance of 25 feet measured parallel to the land surface from the outer edge of the unit ~~and projected vertically downward~~, or property boundary, whichever is closer and projected vertically downward to less, and a depth equal to ~~of~~ 15 feet deeper than from the bottom of the unit or 15 feet into the groundwater table, whichever is greater. For the purposes of this Part, the outer edge is the toe of the CCW or leachate surface impoundment berm, or for CCW or leachate surface impoundments that are incised into the ground, the outer edge is the edge of the excavation. If the owner or operator has a GMZ pursuant to 35 Ill. Adm. Code 620.250 for the site or unit, compliance point means any point as specified in an approved corrective action process in the groundwater at which a contaminant released from the unit could pass beyond the Agency approved GMZ boundary. There may be more than one compliance point for a particular unit(s)/GMZ.⁹

"Contaminant" means any solid, liquid or gaseous matter, any odor, or any form of energy, from whatever source. [415 ILCS 5/3.165]

"Fault" means a fracture or zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.¹⁰

"Flood plain" means the 100-year flood plain.¹¹

*"Groundwater" means underground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure. [415 ILCS 5/3.210]*¹²

"High priority resource groundwater" means Class I groundwater under 35 Ill. Adm. Code 620.210(a)(1), (a)(2), or (a)(3), or Class III groundwater under 35 Ill. Adm. Code 620.230.¹³

"Leachate" means any liquid, including any suspended components in the liquid, that has been or is in direct contact with, percolated through or drained from coal combustion waste. Leachate does not include stormwater runoff that may come into contact with fugitive ash.

"Natural water table" means the natural level at which water stands in a shallow well open along its length and penetrating the surficial deposits just deeply

⁸ Hearing Exhibit 5, Attachment 1, p.12-13.

⁹ Illinois EPA's Post Hearing Comments, Attachment A, p. 3-4, July 17, 2014.

¹⁰ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014. See 75 Fed. Reg. 35242 (June 21, 2010).

¹¹ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014.

¹² Hearing Exhibit 5, Attachment 1, p.12.

¹³ Hearing Exhibit 5, Attachment 4, p.9.

ATTACHMENT B Revised Rule Language July 17, 2014

enough to encounter standard water at the bottom. This level is uninfluenced by groundwater pumping or other engineer activities.¹⁴

"Off-site" means not on-site.

"On-site", "on the site", or "on the same site" means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection and access is by crossing as opposed to going along the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access is also considered on-site property.

"Operator" means the person responsible for the operation and maintenance of a unit.

"Owner" means a person who has an interest, directly or indirectly, in land, including a leasehold interest, on which a person operates and maintains a unit. The "owner" is the "operator" if there is no other person who is operating and maintaining a unit.

"Person" is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, State agency, or any other legal entity, or their legal representative, agent or assigns. [415 ILCS 5/3.315]

"Practical Quantitation Limit" or "PQL" means the lowest concentration or level that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions in accordance with "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846, incorporated by reference at Section 841.120.

"Professional engineer" means *a person licensed under the laws of the State of Illinois to practice professional engineering. [225 ILCS 325].*

"Professional geologist" means *an individual who is licensed under the Professional Geologist Licensing Act to engage in the practice of professional geology in Illinois. [225 ILCS 745]*

"Site" means any location, place, tract of land and facilities, including but not limited to buildings, and improvements used for purposes subject to regulation or control by the Act or regulations thereunder. [415 ILCS 5/3.460]

¹⁴ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014; See 75 Fed. Reg. 35241 (June 21, 2010).

ATTACHMENT B Revised Rule Language July 17, 2014

"Statistically significant" means the application of a statistical method pursuant to Section 841.225 of this Part to determine whether consecutive groundwater sampling data showing greater or lesser concentrations of chemical constituents represents a pattern rather than chance occurrence.

~~"Storm" means a maximum 24-hour precipitation event with a probable recurrence interval of once in 25 years, as defined by the National Weather Service in NOAA Atlas 14 Precipitation Frequency Atlas of the United States, Volume 2, Version 3.0 (2004), found at http://hdsc.nws.noaa.gov/hdsc/pfds/orb/il_pfds.html.~~¹⁵

"Surface impoundment"¹⁶ means a natural topographical depression, man-made excavation, or diked area where earthen materials provide structural support for the containment of liquid wastes or wastes containing free liquids, and which is not a landfill, as defined in 35 Ill. Adm. Code 810.103.

"Unit" means any surface impoundment at a power generating facility that contains coal combustion waste or leachate from coal combustion waste.

"Unstable area" means a location that is susceptible to natural or human induced events or forces capable of impairing the integrity of some or all of the unit's structural components responsible for preventing a release from a unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements and Karst terrains.¹⁷

"Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.¹⁸

"Woody species" means perennial plants with stem(s) and branches from which buds and shoots develop.

"25- year, 24-hr Storm" means the maximum 24-hour precipitation event with a probable recurrence interval of once in 25 years, as defined by NOAA Atlas 14; Precipitation Frequency Atlas of the United States, incorporated by reference in Section 841.120.¹⁹

¹⁵ Hearing Exhibit 5, Attachment 1, p.14-15.

¹⁶ Illinois EPA's Post Hearing Comments, Attachment 1, p. 15-16, March 25, 2014.

¹⁷ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014. See 75 Fed. Reg. 35242 (June 21, 2010).

¹⁸ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014. See 75 Fed. Reg. 35242 (June 21, 2010).

¹⁹ Hearing Exhibit 5, Attachment 1, p.14-15.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.115 Abbreviations and Acronyms

Agency	Illinois Environmental Protection Agency ²⁰
CQA	Construction Quality Assurance
GMZ	Groundwater Management Zone
Mg/L	Milligrams per Liter
NPDES	National Pollutant Discharge Elimination System
TDS	Total Dissolved Solids
PQL	Practical Quantitation Limit

Section 841.120 Incorporations by Reference

- a) The Board incorporates the following material by reference:

NTIS. National Technical Information Service, 5285 Port Royal Road, Springfield VA 22161, (703) 605-6000.

"Methods for Chemical Analysis of Water and Wastes," March 1983, Doc. No. PB84-128677. EPA 600/4-79-020 (available on-line at <http://nepis.epa.gov/>).

"Methods for the Determination of Inorganic Substances in Environmental Samples," August 1993, Doc. No. PB94-120821 (referred to as "USEPA Environmental Inorganic Methods"). EPA 600/R-93-100 (available online at <http://nepis.epa.gov/>).

"Methods for the Determination of Metals in Environmental Samples," June 1991, Doc. No. PB91-231498. EPA 600/4-91-010 (available on-line at <http://nepis.epa.gov/>).

"Methods for the Determination of Metals in Environmental Samples Supplement I," May 1994, Doc. No. PB95-125472. EPA 600/4-94-111 (available on-line at <http://nepis.epa.gov/>).

"Methods for the Determination of Organic and Inorganic Compounds in Drinking Water: Volume I," EPA 815-R-00-014 (August 2000) (available on-line at <http://nepis.epa.gov/>).

"Practical Guide for Ground-Water Sampling," EPA Publication No. EPA/600/2-85/104 (September 1985), Doc. No. PB 86-137304,

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA Publication No. SW-846, as amended by Updates I, II, IIA, IIB, III, IIIA, and IIIB (Doc. No. 955-001-00000-1), (available on-line at <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>).

²⁰ Hearing Exhibit 5, Attachment 1, p.15.

ATTACHMENT B Revised Rule Language July 17, 2014

USEPA, NSCEP. United States Environmental Protection Agency, National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, OH 45242-0419 (accessible on-line and available by download from <http://www.epa.gov/nscep/>).

2009 Unified Guidance. "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities—Unified Guidance," March 2009, EPA 530/R-09-2007.

USGS. United States Geological Survey, 1961 Stout St., Denver CO 80294, (303) 844-4169.

"Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents," Book I, Chapter D2 (1976).

"NOAA Atlas 14: Precipitation-Frequency Atlas of the United States," United States Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Volume 2, Version 3.0 (2004), revised 2006. Available from NOAA, NWS, Office of Hydrologic Development, 1325 East West Highway, Silver Spring, MD 20910 (Available online at http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas14_Volume2.pdf)²¹

- b) This Section incorporates no later editions or amendments.

Section 841.125 Groundwater Quality Standards²²

- a) The owner or operator shall comply with the groundwater standards in 35 Ill. Adm. Code 620 at all times, including the corrective action process in 35 Ill. Adm. Code 620.250.
- b) An institutional control prohibiting potable uses of groundwater in accordance with the Uniform Environmental Covenants Act [765 ILCS 122] or an alternative instrument authorized or environmental uses under Illinois law and approved by the Agency may be used to demonstrate that any threat to the public health or the environment has been minimized as required by 35 Ill. Adm. Code 650.450(a)(4)(B)(ii).²³
- c) Compliance with the groundwater quality standards shall be measured at the compliance point, or compliance points if more than one compliance point exists.

²¹ Hearing Exhibit 5, Attachment 1, p.14-15.

²² Hearing Exhibit 5, Attachment 4, p.11; Illinois EPA's Post Hearing Comments, Attachment 1, p. 17, March 25, 2014.

²³ Illinois EPA's Post Hearing Comments, Attachment 1, p. 4-5, April 30, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- d) The number and kinds of samples collected to establish compliance with the groundwater quality standards must be appropriate for the form of statistical test employed, as prescribed in Section 841.225 of this Part and the 2009 Unified Guidance, incorporated by reference in Section 841.120 of this Part.
- e) The Tiered Approach to Corrective Action Objectives, 35 Ill. Adm. Code 742, shall not be used in lieu of, or to satisfy, the procedures and requirements of this Part.²⁴

Section 841.130 Compliance Period²⁵

- a) Except as provided in this Section, the~~The~~ compliance period begins when the unit first receives coal combustion waste, or leachate from coal combustion waste, or on the effective date of this Part~~one year after the effective date of this rule~~, whichever occurs later, and ends when the post-closure care period ends. The post-closure care period for a unit is the time period described in Section 841.440(a) of this Part.
- b) If the unit was in operation on or before the effective date of this Part, the~~The~~ owner or operator shall conduct a hydrogeologic site characterization, establish background values, develop a groundwater monitoring system, and submit a groundwater monitoring plan within one year of the effective date of this Part~~before the compliance period begins~~. If the owner or operator wishes to use previous site investigations or characterization, plans or programs to satisfy the requirements of this Part pursuant to ~~Section 841.145~~, the owner or operator must submit the previous investigations, characterizations, plans or programs in accordance with Section 841.140 of this Part to the Agency for approval pursuant to Section 841.145 of this Part within one year of the effective date of this Part~~to the Agency for approval of this Part before the compliance period begins~~.

Section 841.135 Recordkeeping

- a) The owner or operator of the unit must maintain paper copies of the following on-site:
 - 1) groundwater monitoring plan;
 - 2) all monitoring data, including inspection reports, for 10 years following generation of the data;
 - 3) corrective action plan, until completion of the corrective action;

²⁴ Illinois EPA's Post Hearing Comments, Attachment 1, p. 4-5, April 30, 2014.

²⁵ Hearing Exhibit 5, Attachment 1, p.15-17; Illinois EPA's Post Hearing Comments, Attachment 1, p. 16-17, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- 4) corrective action report for 10 years following Agency approval of the report;
 - 5) closure plan until the end of the post-closure period;
 - 6) closure report for 10 years following Agency approval of the report;
 - 7) post-closure care plan for 10 years following the certification of the post-closure report;
 - 8) post-closure report for 10 years following Agency approval of the report; and
 - 9) any CQA reports for 2 years following the completion of the construction.
- b) All information required to be maintained by an owner or operator under this Part must be made available to the Agency upon request for inspection and photocopying during normal business hours.

Section 841.140 Submission of Plans, Reports and Notifications

- a) All reports, plans, modifications and notifications required under this Part to be submitted to the Agency must be submitted in writing to the Bureau of Water, Division of Public Water Supplies, Attn: Hydrogeology and Compliance Unit, 1021 North Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 or electronically as authorized by the Agency.
- b) Whenever any of the following documents are submitted to the Agency, the document must contain the seal and signature of either a professional engineer or professional geologist.
 - 1) hydrogeologic site characterization;
 - 2) groundwater monitoring system; and
 - 3) groundwater monitoring plan;
- c) Whenever any of the following documents are submitted to the Agency, the document must contain the seal and signature of a professional engineer.
 - 1) corrective action plan, corrective action report and corrective action certification;
 - 2) closure plan, closure report and closure certification; and
 - 3) post-closure care plan, post-closure report and post-closure certification.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.145 Previous Investigations, Plans and Programs

The Agency may approve the use of any hydrogeologic site investigation or characterization, groundwater monitoring well or system, groundwater monitoring plan, groundwater management zone or preventive response plan, compliance commitment agreement, or court or Board order existing prior to the effective date of these rules to satisfy the requirements of this Part.

Section 841.150 Modification of Existing Permits

The owner or operator of the unit must submit to the Agency an application to revise any state operating permits or NPDES permits issued by the Agency as necessary as a result of preventive response, corrective action, or closure under this Part.

Section 841.155 Construction Quality Assurance Program²⁶

- a) The following components of a preventive response plan pursuant to Subpart B of this Part, a corrective action plan pursuant to Subpart C of this Part and a closure plan pursuant to Subpart D of this Part must be constructed according to a CQA program, if applicable:
 - 1) Installation of the groundwater collection system and discharge system;
 - 2) Compaction of the final cover system subgrade and foundation to design parameters;
 - 3) Application of final cover, including installation of the geomembrane; ~~and~~
 - 4) Construction of ponds, ditches, lagoons and berms; and
 - 5) Removal of CCW.
- b) The CQA program must meet the following requirements, if applicable:
 - 1) The operator must designate a CQA officer who is an Illinois licensed professional engineer.
 - 2) At the end of each week of construction until construction is complete, a summary report must be prepared either by the CQA officer or under the supervision of the CQA officer. The report must include descriptions of the weather, locations where construction occurred during the previous week, materials used, results of testing, inspection reports, and procedures used to perform the inspections. The CQA officer must review and

²⁶ Hearing Exhibit 5, Attachment 4, p.8; Illinois EPA's Post Hearing Comments, Attachment 1, p. 8-9, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

approve the report. The owner or operator of the unit shall retain all weekly summary reports approved by the CQA officer pursuant to Section 841.135 of this Part.

- 3) The CQA officer must certify the following, when applicable:
 - A) the bedding material contains no undesirable objects;
 - B) the preventive response, closure plan or corrective action plan has been followed;
 - C) the anchor trench and backfill are constructed to prevent damage to a geosynthetic membrane;
 - D) all tears, rips, punctures, and other damage are repaired;
 - E) all geosynthetic membrane seams are properly constructed and tested in accordance with the manufacturer's specifications;
 - F) the groundwater collection system is constructed to intersect the water table;
 - G) a groundwater collection system is properly constructed to slope toward extraction points, and the extraction equipment is properly designed and installed;
 - H) appropriate operation and maintenance plans for the groundwater collection system and extraction and discharge equipment are provided;
 - I) proper filter material consisting of uniform granular fill, to avoid clogging, is used in construction; ~~and~~
 - J) the filter material as placed possesses structural strength adequate to support the maximum loads imposed by the overlying materials and equipment used at the facility;
 - K) CCW stabilization, transport, and disposal; and
 - L) site restoration, if any.
- 4) The CQA officer must supervise and be responsible for all inspections, testing and other activities required to be implemented as part of the CQA program under this Section.

ATTACHMENT B Revised Rule Language July 17, 2014

- 5) The CQA officer must be present to provide supervision and assume responsibility for performing all inspections of the following activities, when applicable:
 - A) Compaction of the subgrade and foundation to design parameters;
 - B) Application of final cover, including installation of the geomembrane;
 - C) Installation of the groundwater collection system and discharge system; and
 - D) Construction of ponds, ditches, lagoons and berms.
- 6) If the CQA officer is unable to be present as required by subsection (b)(5) of this Section, the CQA officer must provide the following in writing:
 - A) the reasons for his or her absence;
 - B) a designation of a person who must exercise professional judgment in carrying out the duties of the CQA officer-in-absentia;
 - C) and a signed statement that the CQA officer assumes full responsibility for all inspections performed and reports prepared by the designated CQA officer-in-absentia during the absence of the CQA officer.
- 7) The CQA program must ensure, at a minimum, that construction materials and operations meet design specifications.

Section 841.160 Photographs

When photographs are used to document the progress and acceptability of work performed under this Part, each photograph shall be identified with the following information:

- a) the date, time and location of photograph;
- b) the name of photographer; and
- c) the signature of photographer.

Section 841.165 Public Notice

- a) The Agency shall post all proposed corrective action plans and closure plans, or modifications thereto, on the Agency's webpage for a period not shorter than 30 days.

ATTACHMENT B Revised Rule Language July 17, 2014

- b) The Agency shall accept written comments for a period of 30 days beginning on the day the proposed corrective action or closure plan, or modification thereto, was posted on the Agency's webpage.
- c) While the Agency may respond to the comments received pursuant to subsection (b) of this Section, such response is not required.
- d) The Agency shall take any comments received into consideration in making its final decision and shall post its final decisions on the proposed corrective action plans and closure plans, or modifications thereto, on the Agency's webpage for a period not shorter than 30 days.

Section 841.170 Inspection²⁷

- a) While a unit is in operation, it must be inspected at least once every seven days and after each 25-year, 24-hour Storm to detect evidence of any of the following:
 - 1) Deterioration, malfunctions or improper operation of overtopping control systems;
 - 2) Sudden drops in the level of the unit's contents;
 - 3) Severe erosion (eg. rills, gullies, and crevices six inches or deeper) or other signs of deterioration (eg. failed or eroded vegetation in excess of 100 square feet or cracks) in dikes or other containment devices; and
 - 4) A visible leak.
- b) The owner or operator shall prepare a report for each inspection which includes the date of the inspection, condition of the unit, any repairs made to the unit and the date of the repair and shall maintain a record of such reports pursuant to Section 841.135 of this Part.
- c) The owner or operator shall notify the Agency when a visual inspection shows the level of liquids in the unit suddenly and unexpectedly drops and the drop is not caused by changes in the influent or effluent flows.

SUBPART B: MONITORING

Section 841.200 Hydrogeologic Site Characterization²⁸

²⁷ Hearing Exhibit 5, Attachment 1, p.22.

²⁸ See Hearing Exhibit 5, Attachment 4, p.8-9; Illinois EPA's Post Hearing Comments, Attachment 1, p. 10-11, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- a) The owner or operator of any unit must design and implement a hydrogeologic site characterization to determine the nature and extent of the stratigraphic horizons that are potential contamination migration pathways, and to develop hydrogeologic information for the uses set forth in this Section.
- b) The uses of the hydrogeologic site characterization shall include, but not be limited to:
 - 1) Providing information to define hydrogeology, including a map of the potentiometric surface and background groundwater quality concentrations, and to assess whether there are any impacts to groundwater quality attributable to any releases from the unit;
 - 2) Providing information to establish a groundwater monitoring system; and
 - 3) Providing information to develop and perform modeling to assess possible changes and benefits of potential groundwater impact mitigation alternatives.
- c) Hydrogeologic site characterization shall include but not be limited to the following:
 - 1) Geologic well logs/boring logs;
 - 2) Climatic aspects of the site;
 - 3) Identification of nearby surface water bodies;
 - 4) Identification of nearby pumping wells;
 - 5) Geologic setting;
 - 6) Structural characteristics;
 - 7) Geologic cross-sections;
 - 8) Soil characteristics;
 - 9) Identification of confining layers;
 - 10) Identification of potential migration pathways;
 - 11) Groundwater quality data;
 - 12) Vertical and horizontal extent of the geologic layers to a minimum depth of 100 feet below land surface;

ATTACHMENT B Revised Rule Language July 17, 2014

- 13) Chemical and physical properties of the geologic layers to a minimum depth of 100 feet below land surface;
- 14) Hydraulic characteristics of the geologic layers to a minimum depth of 100 feet below the land surface, including:
 - A) Water table depth;
 - B) Hydraulic conductivities;
 - C) Porosities;
 - D) Direction and velocity of groundwater flow; and
 - E) Map of the potentiometric surface; and
- 15) Any other information requested by the Agency.

Section 841.205 Groundwater Monitoring System

- a) The owner or operator of a unit must develop and submit a proposal for a groundwater monitoring system as a part of the groundwater monitoring plan required by Section 841.210 of this Part. If the site contains more than one unit, separate groundwater monitoring systems are not required for each unit, provided that provisions for sampling the groundwater will enable detection and measurements of contaminants that enter the groundwater from all units.
- b) Standards for monitoring well design and construction.
 - 1) All monitoring wells must be cased in a manner that maintains the integrity of the bore holes.
 - 2) Wells must be screened to allow sampling only at a specified interval.
 - 3) All wells must be covered with vented caps, unless located in flood-prone areas, and equipped with devices to protect against tampering and damage.
- c) The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield groundwater samples to:
 - 1) represent the background quality of groundwater that has not been affected by the unit;
 - 2) represent the quality of groundwater at the compliance point or points;

ATTACHMENT B Revised Rule Language July 17, 2014

- 3) determine compliance with applicable groundwater quality standards in 35 Ill. Adm. Code Part 620; and
- 4) distinguish between chemical constituent concentrations attributable to a regulated unit and other activities.
- d) The groundwater monitoring system must include monitoring well(s) ~~must be~~ located in stratigraphic horizons that are potential contamination migration pathways as identified by the hydrogeologic site characterization conducted pursuant to Section 841.200.²⁹
- e) The groundwater monitoring system must be approved by the Agency pursuant to Subpart E of this Part as a part of the groundwater monitoring plan.

Section 841.210 Groundwater Monitoring Plan

- a) The owner or operator of a unit must develop a groundwater monitoring plan to monitor and evaluate groundwater quality to demonstrate compliance with the groundwater quality standards in 35 Ill. Adm. Code Part 620, and to determine the full extent, measured or modeled, of the presence of any contaminant monitored pursuant to Section 841.215 of this Part above background concentrations, if any.
- b) The groundwater monitoring plan must contain the following:
 - 1) A groundwater monitoring quality assurance program for sample collection, preservation and analysis.
 - 2) A site map that identifies the following:
 - A) all the units located at the site;
 - B) all existing and proposed groundwater monitoring wells;
 - C) all buildings and pertinent features; and
 - D) other information if requested by the Agency.
 - 3) A description of the unit(s), including but not limited to:
 - A) the date each unit began operation;
 - B) a description of the contents of each unit, specifying, to the extent practicable and where such information is available:

²⁹ Hearing Exhibit 5, Attachment 1, p.19.

ATTACHMENT B Revised Rule Language July 17, 2014

- i) the date when each unit began receiving coal combustion waste, or leachate from coal combustion waste;
 - ii) changes in the coal source (e.g. Powder River Basin versus Illinois Basin) including dates and/or tons of material from each coal source;
 - iii) changes in the type of coal combustion waste, or leachate deposited (e.g. fly ash versus flue gas desulfurization sludge) including dates and/or tons of each material deposited; and
 - iv) if applicable, the date when the unit stopped receiving coal combustion waste or leachate.
 - C) the estimated volume of material contained in each unit; and
 - D) a description of the engineered liner, if any, including the date of installation for each unit.
 - 4) A description and results of all hydrogeologic site characterizations performed at the site.
 - 5) Plans, specifications, and drawings for the groundwater monitoring system developed pursuant to Section 841.205 of this Part.
 - 6) A maintenance plan for the groundwater monitoring system.
 - 7) An explanation of sample size, sample procedure and statistical method used to determine background, assessment monitoring and compliance monitoring.
 - 8) The location of compliance points.
 - 9) A schedule for submission of annual reports pursuant to Section 841.235 of this Part.
- c) Representative samples from the groundwater monitoring system must be collected and analyzed in accordance with the procedures for groundwater monitoring and analysis set forth in the following documents, incorporated by reference at Section 841.120 of this Part, or other procedures approved by the Agency in the groundwater monitoring program plan:
- 1) "Methods for Chemical Analysis of Water and Wastes";

ATTACHMENT B Revised Rule Language July 17, 2014

- 2) "Methods for the Determination of Inorganic Substances in Environmental Samples";
 - 3) "Methods for the Determination of Metals in Environmental Samples";
 - 4) "Methods for the Determination of Metals in Environmental Samples – Supplement I";
 - 5) "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water: Volume I";
 - 6) "Practical Guide for Ground-Water Sampling";
 - 7) "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (SW-846), as amended by Updates I, II, IIA, IIB, III, IIIA, and IIIB;
 - 8) "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents";
 - 9) "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities—Unified Guidance."
- d) Sampling and analysis data from groundwater monitoring must be reported to the Agency within 60 days after completion of sampling.
 - e) All groundwater samples taken pursuant to this Section must be analyzed for the chemical constituents listed in Section 841.215 of this Part by a certified laboratory.
 - f) The groundwater monitoring plan and any modifications to the groundwater monitoring plan must be approved by the Agency pursuant to Subpart E of this Part.

Section 841.215 Chemical Constituents and Other Data to Be Monitored

The owner or operator of a unit shall monitor for all chemical constituents identified in 35 Ill. Adm. Code 620.410(a) and (e) except, perchlorate,³⁰ radium-226 and radium-228. Field parameters of specific conductance, groundwater elevation, monitoring well depth and field pH must be determined and recorded with the collection of each sample, and does not need to be analyzed by a certified laboratory.

Section 841.220 Determining Background Values

³⁰ Hearing Exhibit 5, Attachment 3, p.24.

ATTACHMENT B Revised Rule Language July 17, 2014

- a) The owner or operator of a unit must determine the background values of the chemical constituents to be monitored pursuant to Section 841.215 of this Part and must submit the background value determination with the annual statistical analysis pursuant to Section 841.235 of this Part.
- b) The number and kinds of samples collected to establish background must be appropriate for the type of statistical test employed, as prescribed in Section 841.225 of this Part and the 2009 Unified Guidance, incorporated by reference in Section 841.120 of this Part.
- ~~c)~~ Where wells up-gradient of the unit could be affected by activities at the site, the owner or operator may, with Agency approval, use the intrawell statistical method as specified in the 2009 Unified Guidance to determine background values.
- ~~d)~~ The owner or operator shall recalculate background chemical constituent concentrations consistent with the recommendations contained in the 2009 Unified Guidance, but no less often than every five years.
- e) Detections of chemical constituents for which monitoring has been reduced pursuant to Section 841.230(c) shall be included by the owner or operator in background calculations.³¹

Section 841.225 Statistical Methods

- a) When determining background values and when conducting compliance or assessment monitoring, the owner or operator of the unit must specify one or more of the following statistical methods to be used. The statistical test chosen must be conducted separately for each monitored chemical constituent in each well as necessary to demonstrate compliance with this Part and Part 620.³² Where PQLs are used in any of the following statistical procedures to comply with subsection (b)(5) of this Section, the PQL must be proposed by the owner or operator and approved by the Agency. Use of any of the following statistical methods must adequately protect human health and the environment and must comply with the performance standards outlined in subsection (b) of this Section.
 - 1) A parametric analysis of variance followed by multiple comparisons procedures to identify statistically significant evidence of contamination.
 - 2) An analysis of variance based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination.
 - 3) A tolerance or prediction interval procedure in which an interval for each chemical constituent is established from the distribution of the background data, and the level of each chemical constituent in each compliance well is

³¹ Illinois EPA's Post Hearing Comments, Attachment 1, p. 1-4, March 25, 2014.

³² Illinois EPA's Post Hearing Comments, Attachment 1, p. 4-5, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

compared to the upper tolerance or prediction limit. In the case of pH, the upper and lower limits shall be considered.

- 4) A control chart approach that gives control limits for each chemical constituent.
 - 5) Another statistical test method submitted by the owner or operator and approved by the Agency.
- b) Any statistical method chosen pursuant to subsection (a) of this Section must comply with the following performance standards, as appropriate:
- 1) The statistical method used to evaluate groundwater monitoring data must be appropriate for the distribution of chemical constituent concentrations. If the distribution of the chemical constituent concentrations is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the chemical constituent concentrations differ, more than one statistical method may be needed.
 - 2) If an individual well comparison procedure is used to compare an individual compliance well chemical constituent concentration with background chemical constituent concentrations, the test must be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment-wise error rate for each testing period must be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts.
 - 3) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter value must be proposed by the owner or operator and may be approved by the Agency if the Agency finds it to adequately protect human health and the environment.
 - 4) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, must be proposed by the owner or operator and may be approved by the Agency if the Agency finds these parameters to adequately protect human health and the environment. These parameters will be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.

ATTACHMENT B Revised Rule Language July 17, 2014

- 5) The statistical method must account for data below the limit of detection with one or more statistical procedures that adequately protect human health and the environment. Any PQL approved by the Agency pursuant to subsection (a) of this Section that is used in the statistical method must be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.
- 6) The statistical method must include procedures to control or correct for seasonal and spatial variability, as well as temporal correlation in the data.
- c) **Sample Size:** The sample size must be as large as necessary to ensure with reasonable confidence that a contaminant release to groundwater from a facility will be detected.

Section 841.230 Sampling Frequency³³

- a) **Semi-Annual Monitoring.** Except as provided by this Section, all~~All~~ chemical constituents monitored pursuant to this Part shall be sampled at least semi-annually if allowed by the statistical method selected pursuant to Section 841.225 of this Part.
- b) **Quarterly Monitoring.** ~~In addition to semi-annual monitoring required under subsection (a) of this Section, the following shall apply:~~
 - 1) An owner or operator must increase semi-annual monitoring to quarterly monitoring under the following circumstances.
 - A) If any chemical constituents monitored pursuant to this Part exceed the standards set forth in 35 Ill. Adm. Code 620.Subpart D the owner or operator shall sample each well on a quarterly basis for those chemical constituents that exceed the standards in 35 Ill. Adm. Code 620.Subpart D.
 - B)2) Pursuant to Section 841.235(c)(2) of this Part, when a unit(s) may be the cause of a statistically significant increasing concentration, the owner or operator shall sample each well on a quarterly basis for any chemical constituents with a statistically significant increasing concentration.
 - C)3) If any chemical constituents monitored pursuant to this Part have a concentration that differs to a statistically significant degree from the concentrations detected in the up-gradient wells, the owner or operator shall sample each well on a quarterly basis for those

³³ Illinois EPA's Post Hearing Comments, Attachment 1, p. 1-4, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

chemical constituents that differ to a statistically significant degree.

~~2)e)~~ ~~Reduction of Quarterly Monitoring.~~ Any owner or operator of a unit conducting quarterly sampling pursuant to subsection (b)~~(1)~~ of this Section may reduce the quarterly sampling to semi-annual sampling when:

~~A)1)~~ the monitored chemical constituent is not detectable in the down-gradient wells for four consecutive quarters;

~~B)2)~~ the monitored chemical constituent has a concentration that does not differ to a statistically significant degree from the concentration detected in the up-gradient wells for four consecutive quarters; or

~~C)3)~~ the Agency has approved the owner or operator's alternative cause demonstration pursuant to Sections 841.305 or 841.235(c)(1) of this Part.

c) Reduced monitoring. Monitoring frequency may be reduced for individual monitoring wells for particular chemical constituents. Reduced monitoring is prohibited when the unit or units associated with monitoring well does not have a liner with two feet of compacted earthen material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second or a synthetic liner that provides equivalent protection.

1) If the monitoring well is up gradient from a unit, the monitoring frequency for that monitoring well may be reduced to once every five years for a chemical constituent that has not been detected in that monitoring well in the last five so long as the chemical constituent has not been detected in all monitoring wells located down gradient from the unit.

2) If the monitoring well is down gradient from a unit, the monitoring frequency for that monitoring well may be reduced to once every five years for a chemical constituent that has not been detected in that monitoring well in the last five years.

d) The owner or operator of the unit must modify the groundwater monitoring plan and obtain Agency approval pursuant to Subpart E of this Part before reducing monitoring.

e) The owner or operator of a unit may discontinue groundwater monitoring upon Agency approval of the certified post-closure report for that unit required by Section 841.440 of this Part.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.235 Annual Statistical Analysis

- a) The owner or operator of a unit must perform an annual statistical analysis using the appropriate statistical method pursuant to Section 841.225 of this Part for each monitoring well located down-gradient of any unit for all chemical constituents monitored in accordance with Section 841.215 of this Part.
- b) When a chemical constituent monitored pursuant to Section 841.215 of this Part does not exceed the numerical groundwater standards in 35 Ill. Adm. Code 620, the annual statistical analysis shall determine whether any increase of the chemical constituent's concentration is statistically significant.
- c) If the increase is statistically significant, the owner or operator of the unit must investigate the cause.
 - 1) If an investigation attributes a statistically significant increasing concentration to an alternate cause, the owner or operator must notify the Agency in writing within 60 days after submission of the annual statistical analysis, stating the cause of the increasing concentration and providing the rationale used in that determination. The procedures in Section 841.305 of this Part shall apply to the alternative cause demonstration made pursuant to this subsection.
 - 2) If there is not an alternative cause for the statistically significant increasing concentration, then the owner or operator must:
 - A) sample any chemical constituent with statistically significant increasing concentration on a quarterly basis;
 - B) conduct further investigation that includes groundwater flow and contaminant transport modeling when the unit is located over a high priority resource groundwater~~Class I groundwater under 35 Ill. Adm. Code 620.210(a)(1), (a)(2), or (a)(3), or Class III groundwater under 35 Ill. Adm. Code 620.230;~~³⁴
 - C) determine whether the statistically significant increasing concentration demonstrates that a release attributable to the unit threatens a resource groundwater such that:
 - i) Treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or
 - ii) An existing or potential use of such groundwater is precluded; and

³⁴ Hearing Exhibit 5, Attachment 4, p.9.

ATTACHMENT B Revised Rule Language July 17, 2014

- D) notify the Agency in writing of the findings within 30 days of making the determinations.
- 3) When the owner or operator determines pursuant to subsection (c)(2)(C) of this Section that release attributable to a unit causes, threatens or allows an impairment or exclusion of existing or potential use, and the groundwater is a high priority resource groundwater~~Class I groundwater under 35 Ill. Adm. Code 620.210(a)(1), (a)(2), or (a)(3), or Class III groundwater under 35 Ill. Adm. Code 620.230,~~³⁵ the owner or operator of the unit shall develop a preventive response plan to control, minimize and prevent migration of any release from the unit to the resource groundwater. This preventive response plan shall:
- A) be consistent with the requirements of 35 Ill. Adm. Code 620.310;
- B) be submitted to the Agency within 180 days after the submission of the annual statistical analysis; and
- C) require the owner or operator to conduct a hydrogeologic investigation or additional site investigation if the statistically significant increasing concentration continues over a period of two or more consecutive years.
- D) be approved by the Agency pursuant to Subpart E of this Part.
- d) If a groundwater management zone is established pursuant to 35 Ill. Adm. Code 620.250, the annual statistical analysis shall be conducted as set forth in the groundwater management zone or as otherwise approved by the Agency.
- e) For the purposes of this Section, detections of chemical constituents for which monitoring has been reduced pursuant to Section 841.230(c) shall be considered statistically significant increases, and the owner or operator must investigate the cause pursuant to subsection (c) of this Section and notify the Agency within 60 days of the cause of the detection. If the chemical constituents exceed the numerical groundwater standards of 35 Ill. Adm. Code 620, Subpart D, then the owner or operator shall monitor the chemical constituents pursuant to Section 841.230(b)(1).³⁶
- f) The annual statistical analysis shall be submitted to the Agency in accordance with a schedule approved by the Agency in the groundwater monitoring plan pursuant to Section 841.210 of this Part.

³⁵ Hearing Exhibit 5, Attachment 4, p.9.

³⁶ Illinois EPA's Post Hearing Comments, Attachment 1, p. 1-4, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

~~Section 841.240 Inspection~~³⁷

- a) ~~While a unit is in operation, it must be inspected at least once every seven days and after each storm to detect evidence of any of the following:~~
 - 1) ~~Deterioration, malfunctions or improper operation of overtopping control systems;~~
 - 2) ~~Sudden drops in the level of the unit's contents;~~
 - 3) ~~Severe erosion (eg. rills, gullies, and crevices six inches or deeper) or other signs of deterioration (eg. failed or eroded vegetation in excess of 100 square feet or cracks) in dikes or other containment devices; and~~
 - 4) ~~A visible leak.~~
- b) ~~The owner or operator shall prepare a report for each inspection which includes the date of the inspection, condition of the unit, any repairs made to the unit and the date of the repair and shall maintain a record of such reports pursuant to Section 841.135 of this Part.~~
- c) ~~The owner or operator shall notify the Agency when a visual inspection shows the level of liquids in the unit suddenly and unexpectedly drops and the drop is not caused by changes in the influent or effluent flows.~~

SUBPART C: CORRECTIVE ACTION

Section 841.300 Confirmation Sampling

- a) If the results of groundwater monitoring conducted pursuant to this Part show an exceedence of the groundwater quality standards in 35 Ill. Adm. Code 620 at the compliance point(s), the owner or operator shall confirm the detection by resampling the monitoring well or wells. This resampling shall be analyzed for each chemical constituent exceeding the groundwater quality standards in the first sample. The confirmation sampling results must be submitted to the Agency within 30 days after the date on which the original sample analysis was submitted to the Agency pursuant to Section 841.210(d) of this Part.
- b) If confirmation sampling confirms the detection of concentrations above any groundwater quality standard, the owner or operator shall:
 - 1) submit to the Agency an alternative cause demonstration pursuant to Section 841.305 of this Part that shows the exceedence of the groundwater quality standard at a compliance point is not attributable to a release from a unit or units on-site;

³⁷ Hearing Exhibit 5, Attachment 1, p.22.

ATTACHMENT B Revised Rule Language July 17, 2014

- 2) submit to the Agency a corrective action plan as provided in Section 841.310 of this Part; or
 - 3) submit to the Agency a closure plan as provided in Subpart D of this Part.
- c) When an exceedence of the groundwater quality standards has been confirmed, the owner or operator must notify the Agency of the owner or operator's intended action pursuant to subsection (b) of this Section. This notification must indicate in which wells and for which chemical constituents a groundwater standard has been exceeded, and must be submitted within 30 days after submitting the confirmation sample results.

Section 841.305 Alternative Cause Demonstration

An owner or operator may demonstrate that an exceedence of a groundwater quality standard confirmed at a compliance point is not attributable to a release from a unit. A release is not attributable to a unit when any exceedence is due to error in sampling, analysis or evaluation, any exceedence is due to natural causes, or any exceedence is due to a source other than the unit.

- a) In making such demonstration, the owner or operator shall submit a report to the Agency that demonstrates an alternative cause within 180 days after the date of submission of the confirmation samples pursuant to Section 841.300 of this Part.
- b) The Agency shall provide a written response within 90 days to the owner or operator based upon the written demonstration and any other relevant information submitted by the owner or operator that specifies either:
 - 1) Concurrence with the written demonstration; or
 - 2) Non-concurrence with the written demonstration and the reasons for non-concurrence.
- c) An owner or operator who receives a written response of non-concurrence pursuant to subsection (b) shall
 - 1) submit a corrective action plan in accordance with the requirements of this Subpart or a closure plan in accordance with the requirements of Subpart D of this Part within 90 days of the day the Agency's non-concurrence was mailed to the owner or operator; or
 - 2) appeal the Agency's decision of non-concurrence to the Board within 35 days of the day the Agency's non-concurrence was mailed to the owner or operator.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.310 Corrective Action Plan

Whenever any applicable groundwater quality standards under 35 Ill. Adm. Code 620.Subpart D are exceeded, this exceedence is confirmed pursuant to Section 841.300 of this Part, the owner or operator has not made an alternative cause demonstration pursuant to Section 841.305 of this Part, and the owner or operator does not elect to close the unit(s), the owner or operator shall undertake the following corrective action:

- a) Sample and analyze on a quarterly basis according to the provisions of Section 841.230(b) of this Part.
- b) If a release from a unit has impacted a potable water supply well that is in use, the owner or operator of the unit shall act to replace the water supply with a supply of equal or better quality and quantity within 30 days of discovering that such impact has occurred. For the purposes of this Section, a potable water supply well is impacted if the concentration of any chemical constituent monitored pursuant to this Part exceeds the groundwater quality standards in 35 Ill. Adm. Code 620.Subpart D within the well's setback zone.
- c) The owner or operator shall take corrective action that results in compliance with the groundwater quality standards.
- d) The owner or operator shall submit a corrective action plan within 180 days after submission of confirmation sampling results. This requirement is waived if no groundwater quality standard is exceeded in the samples taken pursuant to subsection (a) of this Section for two consecutive quarters.
- e) The corrective action plan must contain the following:
 - 1) description of the activities to be performed at the site, in accordance with the requirements of this Part, to mitigate the groundwater quality standard exceedence;
 - 2) results of modeling performed to assess how the proposed corrective action will result in attainment of the applicable groundwater quality standards set forth in 35 Ill. Adm. Code 620.
 - 3) proposed plans, specifications, and drawings for the proposed corrective action;
 - 4)3) proposed timeline for implementation and completion of all proposed corrective actions;
 - 5)4) a copy of the following plans and investigations:

ATTACHMENT B Revised Rule Language July 17, 2014

- A) groundwater monitoring plan required pursuant to Section 841.210 of this Part,
 - B) hydrogeologic site characterization required by Section 841.200 of this Part and any other hydrogeological site investigation performed under this Part; and
 - C) a copy of the most recent annual statistical analysis required by Section 841.235 of this Part;
- 6) an alternative impact assessment which includes:
- A) the purpose and anticipated benefits of the proposed corrective action.
 - B) identification and characterization of any surface water or groundwater affected by the proposed corrective action.
 - C) potential impacts of the corrective action on groundwater and surface water quality.
 - D) technical and economic assessment of alternatives to the proposed corrective action, which may include the following:
 - i) additional treatment levels of any wastewater discharged to waters of the United States, including no discharge alternatives;
 - ii) discharges of waste waters to alternate locations, if applicable;
 - iii) seasonal discharge options, if applicable;
 - iv) closure of the unit, including closure by removal of coal combustion waste and leachate from coal combustion waste;
 - v) installation or replacement of liner systems; and
 - vi) pollution prevention measures such as operation or process changes, wastewater recycling and reuse, rerouting waste streams within the facility, improved operation and maintenance.
- 7) evaluation of the factors listed in Section 841.500(c)(3)(B);³⁸

³⁸ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- ~~8)6)~~ estimates of the cost of the corrective action;
- ~~9)7)~~ a proposal for a GMZ as set forth in 35 Ill. Adm. Code 620.250, if applicable, including but not limited to groundwater modeling results and supporting documentation;
- ~~10)8)~~ description of the CQA program required by Section 841.155 of this Part;
- ~~11)9)~~ description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls;
- ~~12)10)~~ an evaluation of the effects of a cover, when requested by the Agency;
- ~~13)11)~~ description of any preventive response plan developed pursuant to Section 841.235 of this Part or 35 Ill. Adm. Code 620.230, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that were constructed; and
- ~~14)12)~~ the signature and seal of the professional engineer supervising the preparation of the corrective action plan.
- f) The Agency may request additional information from the owner or operator when necessary to evaluate the proposed corrective action plan.
- g) Upon Agency approval of the corrective action plan, an owner or operator shall implement corrective action in accordance with the timelines approved in the corrective action plan, and shall provide annual progress reports to the Agency regarding implementation of the corrective action plan.
- h) The owner or operator shall continue corrective action measures until
- 1) compliance with the to the extent necessary to ensure that no groundwater quality standard for the appropriate class set forth in 35 Ill. Adm. Code 620.410, 620.420, 620.430, 620.440 is achieved~~exceeded~~ at the compliance point or points; or
- 2) compliance with alternative groundwater standards approved by the Agency pursuant to 35 Ill. Adm. Code 62.450(a)(4).³⁹
- i) If the owner or operator determines that the corrective action program no longer satisfies the requirements of this Section, the owner or operator shall, within 90 days of that determination, submit a modification of the corrective action plan to the Agency.

³⁹ Illinois EPA's Post Hearing Comments, Attachment 1, p. 4-5, April 30, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- j) The Agency shall review the corrective action plan, and any modifications, according to the provisions of Subpart E of this Part.

Section 841.315 Groundwater Collection System

- a) A groundwater collection system includes, but is not limited to, recovery wells, trenches, sumps or piping.
- b) When the corrective action plan includes the use of a groundwater collection system, the owner or operator must:
 - 1) include plans for the groundwater collection system, including, but not limited to, a plan for operation and maintenance, which must be approved by the Agency in the corrective action plan.
 - 2) construct the groundwater collection system in accordance with a CQA program that meets the requirements of Section 841.155 of this Part.
- c) Once compliance with the groundwater quality standards set forth in 35 Ill. Adm. Code 620 or in the groundwater management zone established pursuant to 35 Ill. Adm. Code 620.250 have been achieved, the owner or operator of the unit may discontinue operation of the groundwater collection system.
 - 1) Upon discontinuing operation of the groundwater collection system, the owner or operator must perform four quarterly samples of the groundwater monitoring system wells to ensure compliance with the applicable groundwater quality standards.
 - 2) Results of the four quarterly samples must be included in the corrective action report documentation under Section 841.325. If compliance is not confirmed, operation of the groundwater collection system and discharge system must be resumed, and the owner or operator must notify the Agency.

Section 841.320 Groundwater Discharge System

When the corrective plan includes the use of a groundwater discharge system:

- a) Water discharged to waters of the United States must be discharged in accordance with an NPDES Permit.
- b) The groundwater discharge system must be constructed according to a CQA program that meets the requirements of Section 841.155 of this Part.

ATTACHMENT B Revised Rule Language July 17, 2014

- c) Plans for the groundwater discharge system, including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the corrective action plan.

Section 841.325 Corrective Action Report and Certification

- a) No later than 90 days after the completion of all corrective actions contained in the corrective action plan approved by the Agency, the owner or operator must prepare and submit a corrective action report and corrective action certification for Agency review and approval.
- b) The corrective action report also must contain supporting documentation, including, but not limited to:
 - 1) Engineering and hydrogeology reports, including, but not limited to, monitoring well completion reports and boring logs, all CQA reports, certifications, and designations of CQA officers-in-absentia required by Section 841.155 of this Part;
 - 2) Photographs of construction activities;
 - 3) A written summary of corrective action requirements and activities as set forth in the corrective action plan and this Part; and
 - 4) Any other information relied upon by the professional engineer in making the corrective action certification.
 - 5) The signature and seal of the professional engineer supervising the implementation of the corrective action plan, and the preparation of the corrective action report.
- c) The corrective action certification must be made on forms prescribed by the Agency and must contain a certification by a professional engineer that the release attributable to the unit has been mitigated in accordance with the approved corrective action plan required by Section 841.310 of this Part and the requirements of this Part. The certification must be signed by the owner or operator and by the certifying registered professional engineer.

SUBPART D: CLOSURE

Section 841.400 Surface Impoundment Closure

- a) All units shall be closed in a manner that:
 - 1) Controls, minimizes or eliminates releases from the unit; and

ATTACHMENT B Revised Rule Language July 17, 2014

- 2) Minimizes the need for maintenance during and beyond the post-closure care period;
- b) If closure is to be by removal of all impounded coal combustion waste, and leachate from coal combustion waste, the owner or operator shall remove all coal combustion waste, ~~as well as containment system components (liners, etc).~~⁴⁰ All coal combustion waste must be properly disposed in accordance with the applicable laws and regulations⁴¹ unless beneficially reused.
- c) If closure is not to be by removal of all impounded coal combustion waste and leachate from coal combustion waste, the owner or operator shall:
 - 1) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues.
 - 2) Stabilize remaining wastes to a bearing capacity sufficient to support final cover.
 - 3) Cover the unit with a final cover designed and constructed to meet the requirements of Section 841.420 of this Part.
- d) Deed notation
 - 1) Following closure of a unit at a site, the owner or operator shall record a notation on the deed to the facility property or some other instrument that is normally examined during title search. The owner or operator shall place a copy of the instrument in the operating record, and shall notify the Agency that the notation has been recorded and a copy has been placed in the operating record.
 - 2) The notation on the deed or other instrument must be made in such a way that in perpetuity notify any potential purchaser of the property that:
 - A) The land has been used as a coal combustion waste surface impoundment; and
 - B) The land's use is restricted pursuant to Section 841.430(h)-(i).⁴²

Section 841.405 Closure Prioritization

- a) Whenever any applicable groundwater standards under 35 Ill. Adm. Code 620.Subpart D are exceeded, this exceedence is confirmed pursuant to Section 841.300 of this Part, the owner and operator has not made an alternative cause

⁴⁰ Hearing Exhibit 5, Attachment 3, p.18-19.

⁴¹ Hearing Exhibit 5, Attachment 1, p.25-26.

⁴² Hearing Exhibit 5, Attachment 1, p.27.

ATTACHMENT B Revised Rule Language July 17, 2014

demonstration pursuant to Section 841.305 of this Part, and the owner or operator elects to close the unit(s), the owner or operator shall close the unit according to the following schedule:

- 1) Category 1: Impact to Existing Potable Water Supply
 - A) Category 1 applies where an existing potable water supply well is impacted by a release attributable to the unit. An existing potable water supply is impacted if the level of a contaminant attributable to a release from the unit exceeds an applicable groundwater standard in 35 Ill. Adm. Code 620.Subpart D within the setback of an existing potable water supply well.
 - B) If the unit meets the criteria for Category 1, the owner or operator must take immediate steps to mitigate the impact to any existing potable water supply. The owner or operator of the unit shall act to replace the water supply with a supply of equal or better quality and quantity within 30 days of notice that such impact has occurred.
 - C) If Category 1 applies, the owner or operator shall submit a closure plan to the Agency that meets Section 841.410 of this Part within 180 days from the submission of groundwater monitoring results confirming the impact. The unit shall be closed within two years of the Agency's approval of the closure plan, unless the Agency approves a longer timeline.
- 2) Category 2: Inactive Unit
 - A) Unless Category 1 or 4 apply, Category 2 applies where the unit is inactive. For the purposes of this Part, a unit is considered inactive if it has not received coal combustion waste, or leachate from coal combustion waste within the most recent period of eighteen months.
 - B) If the unit is inactive, a closure plan must be submitted to the Agency within 180 days from the submission of groundwater monitoring results confirming an exceedence of the applicable groundwater quality standards attributable to a release from a unit at an approved compliance point. The unit shall be closed within five years of the Agency's approval of the closure plan, unless the Agency approves a longer timeline.
- 3) Category 3: Active Unit

ATTACHMENT B Revised Rule Language July 17, 2014

- A) Unless Category 1 or 4 apply, Category 3 applies where the unit is active. For the purposes of this Part, a unit is considered active if it has received coal combustion waste, or leachate from coal combustion waste within the most recent period of eighteen months.
 - B) If the unit is active, a closure plan must be submitted to the Agency within 2 years from the submission of groundwater monitoring results confirming an exceedence of the applicable groundwater quality standards attributable to a release from a unit at an approved compliance point. The unit shall be closed within five years of the Agency's approval of the closure plan, unless the Agency approves a longer timeline.
- 4) Category 4: Class IV Groundwater
- A) Unless Category 1 applies, Category 4 applies where the unit is located on a site that has been characterized as Class IV groundwater pursuant to 35 Ill. Adm. Code 620.240⁴³ beyond a lateral distance of 25 feet from the edge of the unit.
 - B) If the unit is located in a Class IV groundwater area, a closure plan must be submitted to the Agency within three years from the submission of groundwater monitoring results confirming an exceedence of the applicable groundwater quality standards attributable to a release from a unit at an approved compliance point. The unit shall be closed within six years of the Agency's approval of the closure plan, unless the Agency approves a longer timeline.
- b) Whenever the applicable groundwater standards under 35 Ill. Adm. Code 620.Subpart D are not exceeded and the owner or operator elects to close the unit, the closure schedule shall be determined by the owner or operator and approved by the Agency in the closure plan.

Section 841.410 Closure Plan

Before a unit may be closed, the owner or operator must submit a closure plan to the Agency for review and approval.

- a) The closure plan must contain, at a minimum, the following information or documents:

⁴³ Hearing Exhibit 5, Attachment 1, p.27

ATTACHMENT B Revised Rule Language July 17, 2014

- 1) description of the closure activities to be performed in accordance with this Part and any additional activities performed by the owner or operator with regards to closing the unit, including any dewatering;
- 2) results of modeling performed to assess how the proposed closure will result in attainment of the applicable groundwater quality standards set forth in 35 Ill. Adm. Code 620;
- 3) proposed plans, specifications and drawings for the closure of the unit, which may include but are not limited to the following illustrative measures:
 - A) the groundwater collection system and discharge system, if applicable, set forth in Sections 841.315 and 841.320 of this Part;
 - B) the final slope design and construction and demonstration of compliance with the stability criteria required in Section 841.415 of this Part;
 - C) the final cover system required by Section 841.420 of this Part;
 - D) containment using a low permeability vertical barrier; and
 - E) other remedial measures approved by the Agency;
- ~~3) evaluation of alternatives to the proposed closure activities, when requested by the Agency.~~
- 4) proposed timeline for implementation and completion of all proposed closure activities, including an estimate of the time required for hydrostatic equilibrium of groundwater beneath the unit;
- ~~5) estimates of the cost of closure and post-closure care;~~
- ~~5)6) a copy of the following plans and investigations:~~
 - A) groundwater monitoring plan required pursuant to Section 841.210 of this Part,
 - B) hydrogeologic site characterization required by Section 841.200 of this Part and any other hydrogeological site investigation performed under this Part; and
 - C) a copy of the most recent annual statistical analysis required by Section 841.235 of this Part;
- 6) an alternative impact assessment which includes:

ATTACHMENT B Revised Rule Language July 17, 2014

- A) the purpose and anticipated benefits of the proposed closure.
- B) identification and characterization of any surface water or groundwater affected by the proposed closure.
- C) potential impacts of the closure on groundwater and surface water quality.
- D) technical and economic assessment of alternatives to the proposed closure, which may include the following:
 - i) additional treatment levels of any wastewater discharged to waters of the United States, including no discharge alternatives;
 - ii) discharges of waste waters to alternate locations, if applicable;
 - iii) beneficial reuse of CCW;
 - iv) closure by removal of coal combustion waste and leachate from coal combustion waste; and
 - iv) pollution prevention measures such as operation or process changes, wastewater recycling and reuse, rerouting waste streams within the facility, improved operation and maintenance
- ~~7)~~ evaluation of the factors listed in Section 841.500(c)(3)(B);
- ~~8)~~ estimates of the cost of closure and post-closure care;
- ~~9)7)~~ a proposal for a GMZ as set forth in 35 Ill. Adm. Code 620.250, if applicable, and including, but not limited to, plans, specifications, drawings for any structures or devices that must be constructed, and groundwater modeling results and supporting documentation where appropriate;
- ~~10)8)~~ description of the CQA program required by Section 841.155 of this Part;
- ~~11)9)~~ description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls;
- ~~12)10)~~ description of previous preventive response plan developed pursuant to Section 841.235 of this Part or 35 Ill. Adm. Code 620.230, or corrective action pursuant to Subpart C of this Part or 35 Ill. Adm. Code 620.250, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that were constructed; and
- ~~13)11)~~ the signature and seal of the professional engineer supervising the preparation of the closure plan.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.415 Final Slope and Stabilization

When closure is not by removal of all coal combustion waste or leachate from coal combustion waste:

- a) All final slopes, including earthen berms,⁴⁴ must be designed and constructed to achieve a minimum static slope safety factor of 1.5 and a minimum seismic safety factor of 1.3, and a grade capable of supporting vegetation and minimizing erosion.
- b) All slopes must be designed to drain runoff away from the cover and to prevent ponding, unless otherwise approved by the Agency.
- c) The unit must meet the stability criteria of 35 Ill. Adm. Code 811.304.
- d) The owner or operator may use coal combustion waste generated at the site in establishing the final grade and slope as provided below:
 - 1) The earthen berms surrounding the unit must be regraded to eliminate any freeboard between the top of the berm and the adjacent surface of the coal combustion waste, unless otherwise approved by the Agency.
 - 2) Additional coal combustion waste may be placed only directly on top of coal combustion waste that is already in place;

Section 841.420 Final Cover System

- a) When the unit is closed by means other than removal of all coal combustion waste, the owner or operator shall design and install a final cover system for the unit. The final cover must be designed and constructed to:
 - 1) Provide long-term minimization of the migration of liquids through the closed impoundment unit;
 - 2) Function with minimum maintenance;
 - 3) Promote drainage and minimize erosion or abrasion of the final cover; and
 - 4) Accommodate settling and subsidence so that the cover's integrity is maintained.
 - 5) Cover all coal combustion waste used to establish the final grade and slope pursuant to Section 841.415(d).⁴⁵

⁴⁴ Illinois EPA's Post Hearing Comments, Attachment A, p. 4, July 17, 2014.

⁴⁵ Illinois EPA's Post Hearing Comments, Attachment A, p. 4, July 17, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- b) The final cover system must consist of a low permeability layer and a final protective layer.
- 1) Standards for the low permeability layer. The low permeability layer must have a permeability less than or equal to 1×10^{-7} cm/sec. If the CCW unit has a liner system, the low permeability layer must have a permeability less than or equal to the permeability of any bottom liner system. ~~In the event that there is no bottom liner present, the cover shall have a permeability of less than or equal to 1×10^{-7} cm/sec.~~⁴⁶ The low permeability layer must be constructed in accordance with the following standards in either subsections (b)(1)(A) or (b)(2)(B) of this Section, unless the owner or operator demonstrates that another low permeability layer construction technique or material provides equivalent or superior performance to the requirements of either subsections (b)(1)(A) or (b)(2)(B) of this Section and is approved by the Agency.
- A) A compacted earth layer constructed in accordance with the following standards:
- i) The minimum allowable thickness must be 0.91 meter (3 feet); and
- ii) The layer must be compacted to achieve a permeability of 1×10^{-7} centimeters per second or less and minimize void spaces.
- B) A geomembrane constructed in accordance with the following standards:
- i) The geosynthetic membrane must have a minimum thickness of 40 mil (0.04 inches) and, in terms of hydraulic flux, be equivalent or superior to a 3 foot layer of soil with a hydraulic conductivity of 1×10^{-7} centimeters per second.
- ii) The geomembrane must have strength to withstand the normal stresses imposed by the waste stabilization process.
- iii) The geomembrane must be placed over a prepared base free from sharp objects and other materials that may cause damage.
- 2) Standards for the final protective layer. The final protective layer must, unless otherwise approved by the Agency, meet the following requirements:

⁴⁶ Hearing Exhibit 5, Attachment 1, p.28-29.

ATTACHMENT B Revised Rule Language July 17, 2014

- A) Cover the entire low permeability layer.
 - B) Be at least 3 feet thick and must be sufficient to protect the low permeability layer from freezing and minimize root penetration of the low permeability layer.
 - C) Consist of soil material capable of supporting vegetation.
 - D) Be placed as soon as possible after placement of the low permeability layer.
 - E) Be covered with vegetation to minimize wind and water erosion.
- 3) CQA Program. The final cover system must be constructed according to a CQA program that meets the requirements of Section 841.155 of this Part.

Section 841.425 Closure Report and Certification

- a) No later than 90 days after the completion of all closure activities required by this Part and approved in the closure plan, the owner or operator of the unit must prepare and submit to the Agency a closure report and a closure certification for review and approval.
- b) The closure report must contain supporting documentation, including, but not limited to:
 - 1) Engineering and hydrogeology reports, including, but not limited to, monitoring well completion reports and boring logs, all CQA reports, certifications, and designations of CQA officers-in-absentia required by Section 841.155 of this Part;
 - 2) Photographs of the final cover system and groundwater collection system, if applicable, and any other photographs relied upon to document construction activities;
 - 3) A written summary of closure requirements and completed activities as set forth in the closure plan and this Part;
 - 4) Any other information relied upon by the professional engineer in making the closure certification; and
 - 5) The signature and seal of the professional engineer supervising the implementation of the closure plan, and the preparation of the closure report.

ATTACHMENT B Revised Rule Language July 17, 2014

- c) The closure certification must be made on forms prescribed by the Agency and must contain a certification by a professional engineer that the unit has been closed in accordance with the approved closure plan required by Section 841.410 of this Part and the requirements of this Part. The certification must be signed by the owner or operator and by the certifying registered professional engineer.

Section 841.430 Post-Closure Maintenance of Cover System

If a final cover system is used to close the unit, the owner or operator of the unit must maintain the surface of the cover system beginning immediately after construction until approval of the post-closure report by the Agency.

- a) After closure, and until completion of the post-closure report, the owner or operator of the unit must conduct inspections of the cover system quarterly and after a 25-year, 24-hour storm events.⁴⁷
- b) The owner or operator of the unit must fill all rills, gullies, and crevices six inches or deeper. Areas identified as particularly susceptible to erosion must be recontoured.
- c) The owner or operator of the unit must repair all eroded and scoured drainage channels and must replace lining material, if necessary.
- d) The owner or operator of the unit must fill and recontour all holes and depressions created by settling so as to prevent standing water.
- e) The owner or operator of the unit must revegetate all areas of failed or eroded vegetation in excess of 100 square feet, cumulative.
- f) The owner or operator of the unit must repair all tears, rips, punctures, and other damage to the geosynthetic membrane.
- g) The owner or operator must prevent the growth of woody species on the protective cover.
- h) Postclosure use of the property must not disturb the integrity of the final cover, liner, any other components of the containment system, or the function of the monitoring systems, unless necessary to comply with the requirements of this Part.
- i) Any disturbance of the final cover, liner or any other components of the containment system, or the function of monitoring systems and post closure use must be approved by the Agency prior to such disturbance or use.

⁴⁷ Hearing Exhibit 5, Attachment 1, p.14-15.

ATTACHMENT B Revised Rule Language July 17, 2014

Section 841.435 Post-Closure Care Plan

- a) The owner or operator of the unit must prepare and submit to the Agency a post-closure care plan for review and approval at the same time it submits the closure plan pursuant to Section 841.410 of this Part.
- b) The owner or operator must maintain the post-closure care plan on-site or at a location specified in the post-closure care plan.
- c) The post-closure care plan, or modification of the plan, must include, at a minimum, the following elements:
 - 1) description of the post-closure care activities required by Section 841.430 of this Part;
 - 2) description of the operation and maintenance that will be required for the groundwater collection system and discharge systems, if applicable;
 - 3) the information and documents required in the closure plan pursuant to Section 841.410 of this Part; and
 - 4) a description of the planned uses of the property during the postclosure care period.
 - 5) the signature and seal of the professional engineer supervising the preparation of the post-closure care plan.

Section 841.440 Post-Closure Report and Certification

- a) Post-closure care must continue for ten years, or until one of the following occurs, whichever is later:
 - 1) compliance with the groundwater quality standards for the appropriate class set forth in 35 Ill. Adm. Code 620.410, 620.420, 620.430, 620.440 is achieved at the compliance point or points; or ~~or in a groundwater management zone established pursuant to 35 Ill. Adm. Code 620.250;~~ and
 - 2) compliance with alternative groundwater quality standards approved by the Agency pursuant to 35 Ill. Adm. Code 620.450(a)(4) ~~a minimum of ten years from the Agency's approval of the closure report.~~⁴⁸
- b) The owner or operator of the unit must prepare and submit to the Agency for review and approval a post-closure report and post-closure certification within 90 days after the post closure period specified in subsection (a) of this Section.

⁴⁸ Illinois EPA's Post Hearing Comments, Attachment 1, p. 4-5, April 30, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- c) A professional engineer or professional geologist may supervise post-closure care activities as appropriate under the Professional Engineering Practice Act [225 ILCS 325] or the Professional Geologist Licensing Act [225 ILCS 745].
- d) The post-closure report also must contain supporting documentation, including, but not limited to:
 - 1) Engineering and hydrogeology reports, including, but not limited to, documentation of compliance with the applicable groundwater quality standards;
 - 2) Any photographs relied upon to document construction activities, including but not limited to, photographs of the final cover system and groundwater collection system, if applicable;
 - 3) A written summary of post-closure care requirements and activities as set forth in the post-closure care plan and their completion;
 - 4) Any other information relied upon by the professional engineer or professional geologist, as appropriate for the activity, in making the post-closure care certifications;
 - 5) The signature and seal of the professional engineer or professional geologist supervising the implementation of the post-closure care plan; and
 - 6) The signature and seal of the professional engineer supervising preparation of the post-closure report.
- e) The post-closure certification must be made on forms prescribed by the Agency and must contain a certification by a professional engineer that the post-closure care period for the unit was performed in accordance with the specifications in the approved post-closure plan required by Section 841.435 of this Part and the requirements set forth in this Part. The certification must be signed by the owner or operator and by the certifying registered professional engineer.

Section 841.445 Closure and Post-Closure Annual Reporting

- a) The owner or operator of the unit must file an annual report with the Agency no later than January 31 of each year during the closure of the unit and for the entire post-closure care period. Once the requirements of Section 841.440 of this Part have been met, annual reports are no longer required.
- b) All annual reports must contain the following information:

ATTACHMENT B Revised Rule Language July 17, 2014

- 1) Annual statistical analyses required by Section 841.235 of all groundwater monitoring data generated by the groundwater monitoring program required by Section 841.210 of this Part;
- 2) A copy of any notice submitted to the Agency pursuant to Section 841.235(c)(1) of this Part;
- 3) A discussion of any statistically significant increasing concentrations and actions taken to mitigate such increases in accordance with Section 841.235(c)(3) of this Part; and
- 4) The completed closure or post-closure activities performed during the preceding year.

Section 841.450 Resource Conservation and Recovery Act

Nothing in this Subpart shall be construed to be less stringent than or inconsistent with the provisions of the federal Resource Conservation and Recovery Act of 1976 (P.L. 94-580), as amended, or regulations adopted under that Act. To the extent that any rules adopted in this Subpart are less stringent than or inconsistent with any portion of RCRA applicable to the closure of a unit, RCRA will prevail.

SUBPART E: AGENCY REVIEW PROCEDURES

Section 841.500 Plan Review, Approval, and Modification

Any plan prepared and submitted to the Agency pursuant to this Part, and any modifications to those plans, must be reviewed and approved by the Agency prior to implementation.

- a) The Agency will have 90 days from the receipt of a plan or proposed modification to conduct a review and make a final determination to approve or disapprove a plan or modification or to approve a plan or modification with conditions.
 - 1) The Agency's record of the date of receipt of a plan or proposed modification to a plan will be deemed conclusive unless a contrary date is proved by a dated, signed receipt from the Agency or certified or registered mail.
 - 2) Submission of an amended plan or amended modification to a plan restarts the time for review.
 - 3) The owner or operator may in writing waive the Agency's decision deadline upon a request from the Agency or at the owner's or operator's discretion.

ATTACHMENT B Revised Rule Language July 17, 2014

- b) A proposed modification to any plan must include the reason for the modification, all the information and supporting documentation that will be changed from or will supplement the information provided in the original or most recently approved plan, and the signature and seal of the professional engineer or professional geologist, as appropriate, supervising the preparation of the proposed modification.
- c) When reviewing a plan or modification, the Agency must consider:
 - 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to this Part and has been accompanied by the information and supporting documentation necessary to evaluate the compliance of the proposed plan relative to the standards and requirements of this Part;
 - 2) Whether the activities, structures and devices proposed are in accordance with the applicable standards and requirements of this Part and are otherwise consistent with generally accepted engineering practices and principles of hydrogeology, accepted groundwater modeling practices, appropriate statistical analyses, and appropriate sampling techniques and analytical methods;
 - 3) When reviewing a corrective action plan, closure plan or post closure plan, or modification to any of these plans, the following factors:
 - A) The likelihood that the plan or modification will result in the containment of the coal combustion waste or leachate from coal combustion waste and the attainment of the applicable groundwater quality standards set forth in 35 Ill. Adm. Code 620.
 - B) The management of risk to human health and the environment relative to any remaining contamination, including, but not limited to: ~~provisions for~~
 - i) location of the CCW surface impoundment in a wetland, flood plain, fault area, unstable area;
 - ii) whether CCW will remain in contact with the natural water table after closure;
 - iii) the surface impoundment design and the long term reliability of the surface impoundment;
 - iv) use of engineering measures designed to mitigate risk to human health and the environment;

ATTACHMENT B Revised Rule Language July 17, 2014

- v) the use of long-term restrictions on the use of groundwater as a potable water supply, if appropriate;
 - vi) the long-term and short-term effectiveness and protectiveness of the alternative corrective action or closure options evaluated in the alternative impact assessment as required by Section 841.410(e)(6) or Section 841.410(a)(6);
 - vii) the extent to which the corrective action or closure plan will reduce further releases;
 - viii) the potential need for replacement or amendment of the selected corrective action or closure alternative;
 - ix) the length of time until full corrective action or closure is completed;
 - x) the type and degree of long-term management required, including monitoring, operation, and maintenance;
 - xi) the available capacity and location of needed treatment, storage, and disposal services.⁴⁹
- 4) Whether the plan or modification contains the required professional signatures and seals.
- d) Upon completion of the review, the Agency must notify the owner or operator in writing of its final determination on the plan or proposed modification. The notification must be post-marked with a date stamp. The Agency's final determination will be deemed to have taken place on the post-marked date that the notice is mailed. If the Agency disapproves a plan or modification or approves a plan or modification with conditions, the written notification must contain the following information, as applicable:
- 1) An explanation of the specific type of information or documentation, if any, that the Agency deems the owner or operator did not provide;
 - 2) A list of the provisions of the Act, this Part, or other applicable regulations that may be violated if the plan or modification is approved as submitted;
 - 3) A statement of the specific reasons why the Act, this Part, or other applicable regulations may be violated if the plan or modification is approved as submitted; and
 - 4) A statement of the reasons for conditions if conditions are required.

⁴⁹ Illinois EPA's Post Hearing Comments, Attachment A, p. 5-13, July 17, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

- e) If the Agency disapproves a plan or modification, or approves a plan or modification with conditions, the owner or operator may, within 35 days after the date of service of the Agency's final decision~~after the post-marked date that the notice is mailed~~⁵⁰ or after the expiration of the review period specified in subsection (a) of this section, file an appeal with the Board. Appeals to the Board are subject to review under Section 40 of the Act [415 ILCS 5/40]. The Agency's failure to issue a final determination within the applicable review time shall be considered a disapproval of the plan or modification.
- f) If the Agency disapproves any plan submitted pursuant to Sections 841.130(b), 841.310(d) or 841.405, and the owner or operator does not elect to appeal the Agency's decision to the Board, the owner or operator must resubmit the plan within 90 days of the post-marked date the notice is mailed.⁵¹

Section 841.505 Review and Approval of Reports and Certifications

The corrective action report, certification of corrective action, closure report, certification of closure, post-closure report, and certification of completion of post-closure care prepared and submitted to the Agency in accordance with this Part must be reviewed and approved by the Agency prior to the completion of corrective action, closure, or post-closure care.

- a) Corrective action, closure and post-closure activities will not be deemed complete until the reports are approved by the Agency.
- b) Submission, review, and approval procedures and deadlines, notification requirements, and rights of appeal shall be the same as those set forth in Section 841.500 of this Part.
- c) When reviewing a corrective action report and certification of corrective action, the Agency must consider whether the documentation demonstrates that the activities, structures and devices approved in the corrective action plan have been completed, operated and maintained in accordance with this Part and the approved corrective action plan.
- d) When reviewing a closure report and certification of completion of closure, the Agency must consider whether the documentation demonstrates that the activities, structures and devices approved in the closure plan have been completed in accordance with this Part and the approved closure plan.
- e) When reviewing a post-closure report and certification of completion of post-closure care plan, the Agency must consider whether the documentation demonstrates that the activities, structures and devices approved in the post-

⁵⁰ Hearing Exhibit 5, Attachment 1, p.30.

⁵¹ Illinois EPA's Post Hearing Comments, Attachment 1, p. 17, March 25, 2014.

ATTACHMENT B Revised Rule Language July 17, 2014

closure care plan have been completed, operated and maintained in accordance with this Part and the approved post-closure care plan.

ATTACHMENT C Required Risk Evaluation Information

I. Tools for Saturated Ash

Section 841.200 Hydrogeologic Site Characterization

- Geologic well logs/boring logs;
- Geologic cross-sections;
- Soil characteristics
- Identification of confining layers;
- Identification of potential migration pathways;
- Vertical and horizontal extent of the geologic layers to a minimum depth of 100 feet below land surface;
- Chemical and physical properties of the geologic layers to a minimum depth of 100 feet below land surface;
- Hydraulic characteristics of the geologic layers to a minimum depth of 100 feet below the land surface, including:
 - Water table depth;
 - Direction and velocity of groundwater flow
 - Map of the potentiometric surface;

Section 841.310 Corrective Action Plan

- description of the activities to be performed at the site, in accordance with the requirements of this Part, to mitigate the groundwater quality standard exceedence;
- proposed plans, specifications, and drawings for the proposed corrective action;
- proposed timeline for implementation and completion of all proposed corrective actions;

II. Tools for 100 year flood Plain

Section 841.200 Hydrogeologic Site Characterization

- Identification of nearby surface water bodies;
- Geologic setting;
- Water table depth;
- Direction and velocity of groundwater flow;
- Map of the potentiometric surface;

Section 841.310 Corrective Action Plan

- description of the activities to be performed at the site, in accordance with the requirements of this Part, to mitigate the groundwater quality standard exceedence;
- proposed plans, specifications, and drawings for the proposed corrective action;
- proposed timeline for implementation and completion of all proposed corrective actions;

ATTACHMENT C Required Risk Evaluation Information

III. Tools for wetlands

Section 841.200 Hydrogeologic Site Characterization

- Identification of nearby surface water bodies;
- Geologic setting;
- Identification of confining layers;
- Identification of potential migration pathways
- Chemical and physical properties of the geologic layers to a minimum depth of 100 feet below land surface
- Water table depth
- Direction and velocity of groundwater flow;
- Map of the potentiometric surface;

Section 841.310 Corrective Action Plan

- description of the activities to be performed at the site, in accordance with the requirements of this Part, to mitigate the groundwater quality standard exceedence;
- proposed plans, specifications, and drawings for the proposed corrective action;
- proposed timeline for implementation and completion of all proposed corrective actions;

IV. Tools for Faults/seismic zones

Section 841.200 Hydrogeologic Site Characterization

- Geologic setting;
- Structural characteristics;
- Geologic cross-sections;

Section 841.415 Final Slope and Stabilization

- All final slopes must be designed and constructed to achieve a minimum static slope safety factor of 1.5 and a minimum seismic safety factor of 1.3, and a grade capable of supporting vegetation and minimizing erosion.
- The unit must meet the stability criteria of 35 Ill. Adm. Code 811.304.

V. Tools for unstable areas

Section 841.200 Hydrogeologic Site Characterization

- Geologic setting;
- Structural characteristics;
- Geologic cross-sections;
- Soil characteristics
- Vertical and horizontal extent of the geologic layers to a minimum depth of 100 feet below land surface
- Chemical and physical properties of the geologic layers to a minimum depth of 100 feet below land surface

ATTACHMENT C Required Risk Evaluation Information

- Hydraulic characteristics of the geologic layers to a minimum depth of 100 feet below the land surface, including:
- Water table depth;
- Map of the potentiometric surface;

Section 841.310 Corrective Action Plan

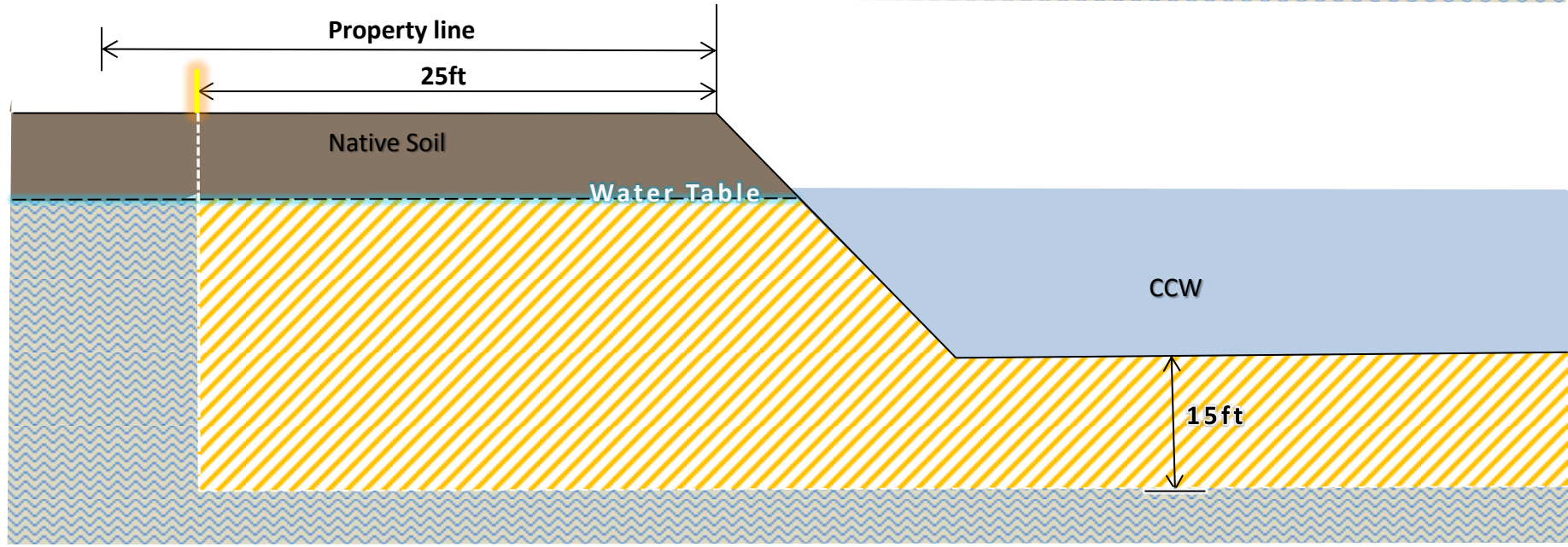
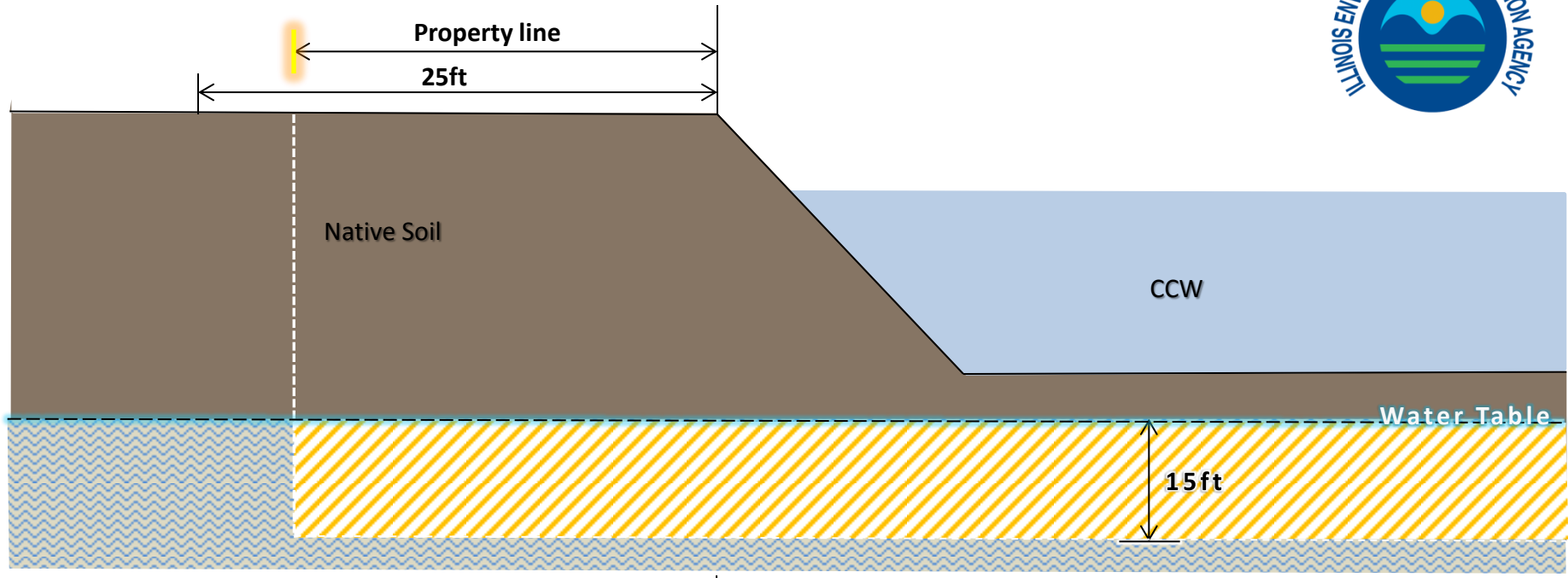
- description of the activities to be performed at the site, in accordance with the requirements of this Part, to mitigate the groundwater quality standard exceedence;
- proposed plans, specifications, and drawings for the proposed corrective action;
- proposed timeline for implementation and completion of all proposed corrective actions;

Section 841.415 Final Slope and Stabilization

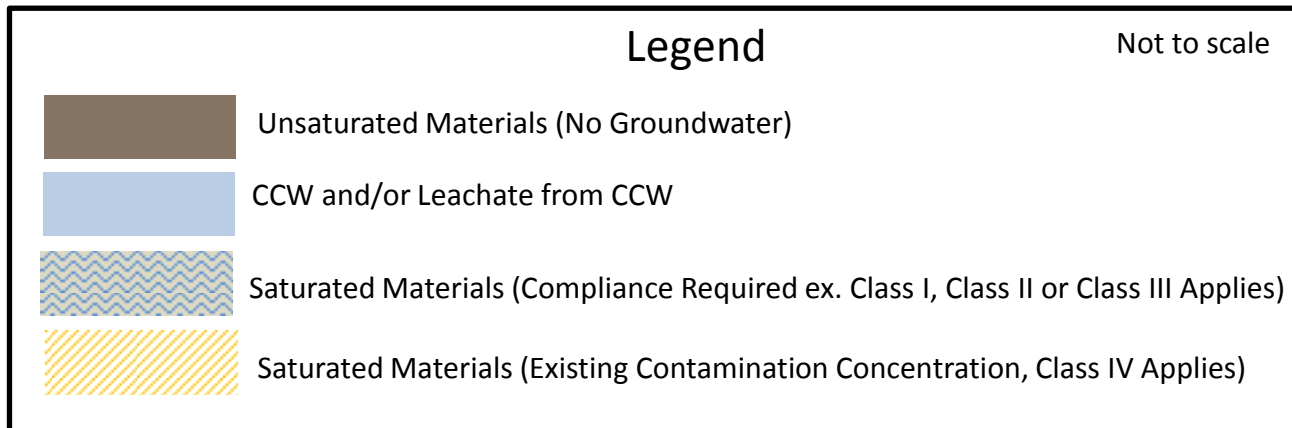
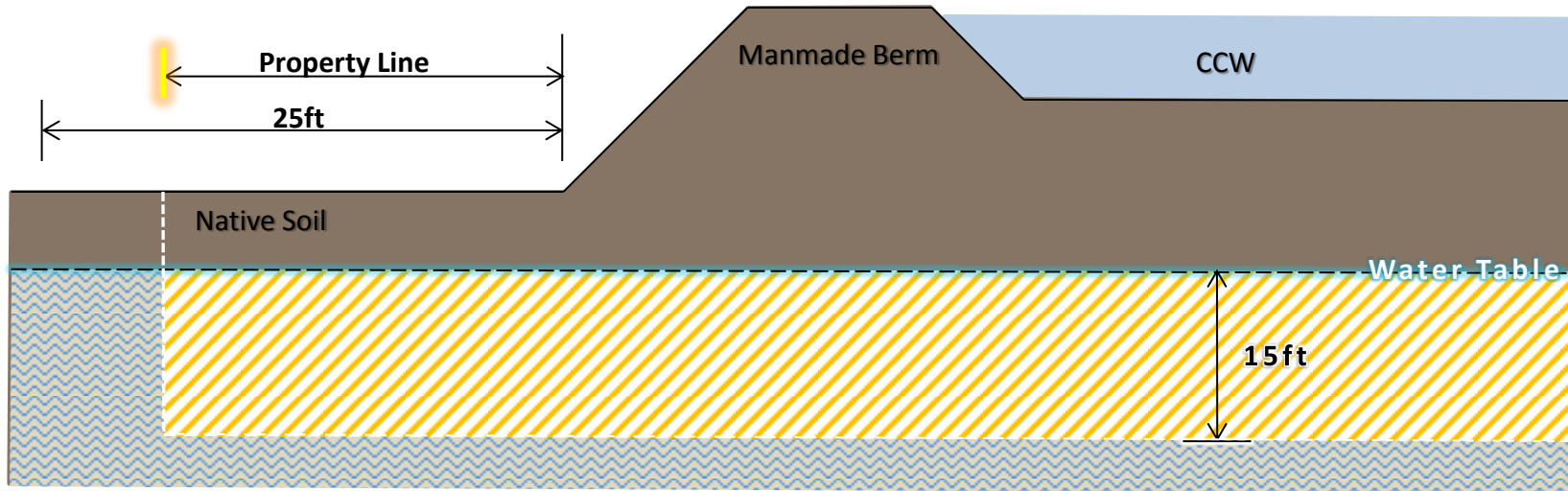
- All final slopes must be designed and constructed to achieve a minimum static slope safety factor of 1.5 and a minimum seismic safety factor of 1.3, and a grade capable of supporting vegetation and minimizing erosion.
- The unit must meet the stability criteria of 35 Ill. Adm. Code 811.304.

ATTACHMENT D

Incised CCW Impoundment Cross Section



Bermed CCW Impoundment Cross Section



CERTIFICATE OF SERVICE

Joanne M. Olson, Assistant Counsel for the Illinois EPA, herein certifies that she has served a copy of the foregoing NOTICE OF FILING and ILLINOIS ENVIRONMENTAL PROTECTION AGENCY'S PREFILED ANSWERS upon persons listed on the Service List by mailing, unless otherwise noted on the Service List, a true copy thereof in an envelope duly addressed bearing proper first class postage and deposited in the United States mail at Springfield, Illinois on July 17, 2014.

By: /s/Joanne M. Olson

THIS FILING IS SUBMITTED ELECTRONICALLY AND SERVED ON RECYCLED PAPER

SERVICE LIST

Matthew J. Dunn, Chief
Environmental Enforcement/Asbestos
Litigation Division
Illinois Attorney General's Office
500 South Second Street
Springfield, IL 62706

Stephen Sylvester
Environmental Enforcement/Asbestos
69 West Washington, St.
Suite 1800
Chicago, IL 62706

Virginia Yang
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

Alec Messina
Illinois Environmental Regulatory Group
215 East Adams Street
Springfield, IL 62701

Mark A. Bilut
McDermott, Will & Emery
227 West Monroe Street
Chicago, IL 60606-5096

Christine G. Zeman
City of Springfield
Office of Public Utilities
800 East Monroe, 4th Floor, Municipal Bldg. East
Springfield, IL 62757-0001

Amy Antonioli
6600 Willis Tower
233 South Wacker Drive
Chicago, IL 60606-6473

Andrew Armstrong
Environmental Law and Policy Center
35 E. Wacker Drive
Suite 1600
Chicago, IL 60601

Jessica Dexter
Environmental Law and Policy Center
35 E. Wacker Drive
Suite 1600
Chicago, IL 60601

Jack Darin
Sierra Club
70 E. Lake Street, Suite 1500
Chicago, IL 60601-7447

Ameren Services
One Ameren Plaza
PO Box 66149
St. Louis, MO 63166

Jason McLaurin
Southern Illinois Power Cooperative
11543 Lake of Egypt Road
Marion, IL 62959-8500

Exelon Law Department
10 South Dearborn, 49th Floor
Chicago, IL 60603

Traci Barkley
Prairie Rivers Network
1902 Fox Drive, Suite 6
Champaign, IL 61820

Susan M. Franzetti
Nijman Franzetti LLP
10 South LaSalle Street
Suite 3600
Chicago, IL 60603

Rick Diericx
Senior Director
Dynergy Midwest Generation, Inc.
604 Pierce Blvd.
O'Fallon, IL 62269

Michael Smallwood
Consulting Engineer
Ameren
1901 Chouteau Avenue
St. Louis, MO 63103

Abel Russ
Environmental Integrity Project
1000 Vermont Avenue NW
Suite 1100
Washington, DC 20005

Christopher Foley
Senior Counsel
Midwest Generation
500 West Madison Street
Suite 2640
Chicago, IL 60661

Tim Fox
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph
Suite 11-500
Chicago, Illinois 60601

Kincaid Generation LLC
P.O. Box 260
Kincaid
IL 62540

Prairie Power, Inc.
P.O. Box 10
Peral, IL 62361

Prairie State Generating Company
4190 County Highway 12
Marissa, IL 62257

Electric Energy, Inc.
2100 Portland Road
P.O. Box 165
Joppa, IL 62953

David Rieser
Much Shelist PC
191 North Wacker Drive
Suite 1800
Chicago, IL 60607

Christina Archer
Much Shelist PC
191 North Wacker Drive
Suite 1800
Chicago, IL 60607

Walter Stone
Vice President
NRG Energy, Inc.
8301 Professional Place
Suite 230
Landover, MD 20785

Nicole Wallace
Much Shelist PC
191 North Wacker Drive
Suite 1800
Chicago, IL 60607

Faith E. Bugel
Environmental Law and Policy Center
35 E. Wacker Drive
Suite 1600
Chicago, IL 60601

Jennifer L. Cassel
Environmental Law and Policy Center
35 E. Wacker Drive
Suite 1600
Chicago, IL 60601

Josh Zaharoff
Environmental Law and Policy Center
35 E. Wacker Drive
Suite 1600
Chicago, IL 60601

Elizabeth Quirk-Hendry
General Counsel East Region
NRG Energy, Inc.
211 Carnegie Center
Princeton, NJ 08540