BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

NOTICE OF ELECTRONIC FILING

To: **Attached Service List**

PLEASE TAKE NOTICE that on June 6, 2014, I electronically filed with the Clerk of the Illinois Pollution Control Board the **Post Hearing Comments of the Environmental Integrity Project, Environmental Law & Policy Center, Prairie Rivers Network, and Sierra Club**. A copy is attached hereto and herewith served upon you.

Dated: June 6, 2014

Respectfully submitted,

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COMMENTS OF ENVIRONMENTAL INTEGRITY PROJECT, ENVIRONMENTAL LAW AND POLICY CENTER, PRAIRIE RIVERS NETWORK, AND SIERRA CLUB

The Environmental Integrity Project, Environmental Law and Policy Center, Prairie Rivers Network, and Sierra Club (collectively, "Environmental Groups") submit the following comments concerning the Environmental Groups' proposed revisions, filed May 13, 2014, to the new Part 841 regulations proposed by the Illinois Environmental Protection Agency ("Agency"). The Illinois Pollution Control Board ("Board") has broad authority to adopt rules to implement the Illinois Environmental Protection Act, limited only by the principle that the rules must promote the purposes and provisions of the Act. 415 ILCS 5/5 and 5/27. The Board specifically has the authority to modify rules proposed by the Agency, after comments, objections, or suggestions, without the agreement of the Agency as the proponent. 415 ILCS 5/28(b)(2). In accordance with this procedure, the Environmental Groups have proposed modifications to the Agency's proposed rule on coal combustion waste ("CCW") impoundments. In advance of upcoming hearings, and to respond to several issues raised at earlier hearings, the Environmental Groups provide the following comments. Copies of the Environmental Groups' updated proposed revisions and the Agency's proposed rules, as filed on March 25, 2014, are attached hereto as Exhibits 1 and 2.

I. The Proposed Rules Should Include a Requirement of Closure Plans for All CCW Impoundments to Be Submitted Within One Year of the Rules' Effective Date.

The Environmental Groups have proposed revisions to the Agency's proposed Sections 841.130 and 841.410 to require that each surface impoundment unit subject to the rule have a closure and post-closure plan for the unit submitted to the Agency within one year of the rule's effective date. *See* Ex. 1, Section 841.130(b) ("If the unit was in operation on or before the effective date of this Part, the owner or operator shall conduct a hydrogeologic site characterization, establish background values, develop a groundwater monitoring system, and submit a . . . closure plan . . . and post-closure plan within one year of the effective date of this Part."); Section 841.410 ("The owner or operator of any unit must develop and submit to IEPA a closure plan for the unit.").

These revisions would ensure that owners and operators have definite and workable plans to deal with their CCW impoundments. The Board's general landfill regulations have an analogous requirement requiring owners and operators to maintain written closure and post-closure plans. 35 Ill. Adm. Code 811.110(d)(1); 35 Ill. Adm. Code 812.115. Preparing closure plans now is the appropriate way to address Illinois' numerous aging CCW impoundments, many inadequately lined, in which, collectively, hundreds of millions of gallons of coal combustion waste and wastewater are being stored. It is clear that the State's CCW impoundments will need to be dealt with, and sooner rather than later. Putting in place plans for doing so now, in conjunction with financial assurance requirements designed to ensure that adequate resources are available to carry out the plans, is a much more reasonable way to deal with the impoundments than continuing to deferring the problem.

At hearing, the Agency stated that it had considered a requirement that a closure plan be prepared for every impoundment, but rejected it because there are presently "uncertainties" about the final size of the impoundment and the precise method of closure. (Tr., Feb. 27, 2014, at 62, lines 5-16). As the Agency conceded, though, it would be possible for the owner or operator to amend a closure plan to reflect changing conditions at the site. (*Id*. at 65, lines 5-13). The Agency's explanation does not provide a basis for rejecting a closure plan requirement. The hydrogeologic site characterization required by proposed Section 841.200 will provide more than enough information to detail what steps would need to be taken to close the impoundment under present conditions, and with present technology. If any relevant facts change, the owner or operator is free to seek to amend the plan. But the potential need to amend a plan is not a reason for not requiring the plan in the first place.

II. The Proposed Rule Should Include a Preference For Closure of Surface Impoundments By Complete Removal of Coal Ash and Leachate.

The Environmental Groups have proposed revisions to Section 841.400, governing closure plans. *See* Ex. 1 at Section 841.400. The revisions retain the Agency's proposed framework that the closure of ash impoundments generally may be accomplished either by removing all coal combustion waste and leachate (841.400(b)) or by dewatering, stabilizing, and covering the impoundment (841.400(c)). The Environmental Groups' proposed revisions put in place a baseline preference for closure by removal, though.

This preference is based on the premise that closure by removal of coal combustion waste and leachate generally is the most protective means of closure for groundwater and surface water quality and, therefore, for human health and the environment. (Tr., May 15, 2014 at 61, line 24 to 62, line 3). First, complete removal of coal combustion waste and leachate is the surest means of "source control" to prevent future groundwater contamination from impoundments that are

unlined or that have a failing liner. Second, some types of sites simply are not suitable for the long-term disposal of large amounts of dangerous coal combustion waste. The Environmental Groups' proposed revisions take these two factors into account.

Closure by removal is increasingly employed in other states as a safe and economical method of dealing with CCW impoundments. For example, Santee Cooper, a South Carolina utility, agreed in November 2013 to remove 1.3 million tons of coal ash from ponds at its Grainger plant in Conway, South Carolina, through a plan that a Santee Cooper executive described as "cost-effective". Steve Jones, *Santee Cooper to empty Grainger ash ponds in Conway*, Myrtle Beach Sun News (Nov. 19, 2013), available at http://www.myrtlebeachonline.com/2013/11/19/3849209/santee-cooper-to-empty-grainger.html. Large-scale removal of coal combustion waste presents difficulties, but is far from impossible.

The Environmental Groups' proposed revisions therefore reflect the conclusion that there are cases where removal of coal combustion waste is technically feasible and will be more protective than leaving the ash in place. The Environmental Group's revisions on this point in Section 841.400(b) fall into two parts.

First, the Environmental Groups propose that, in all cases, closure of surface impoundments should be accomplished by the removal of all coal combustion waste and leachate from the impoundment unless the Agency determines that such removal is technically infeasible or would not result in greater protection of human health and the environment. This revision would establish a baseline rule requiring closure by removal, but leaves open the possibility for the Agency to determine in its best professional judgment that (a) removal will not offer any benefits to human health or the environment greater than those offered by closure in place; or (b)

closure by removal is technically infeasible. If the Agency makes either determination, then closure by removal is not required under the rule.

During the last hearing, the Environmental Groups were asked if they would support an edit of their proposed revisions to include a reference to "economic reasonableness," or a similar concept. The Environmental Groups do not propose to make that change. The Environmental Groups' proposal is meant to make the primary screens for closure alternatives to be technical feasibility and protection of human health and the environment. If the Agency is concludes in a particular case that closure by removal is technically feasible and would clearly afford more protection to human health and the environment, then closure should be by removal.

Second, the Environmental Groups propose that, for three specific categories of sites, it should be presumed that closure by removal is more protective of human health and the environment. These sites are ones where: (a) coal combustion waste from the unit is present in the water table; (b) the unit is located in a floodplain or wetlands; (c) the unit has been constructed over a mine, void, and any other unstable terrain that puts the unit's integrity at risk. These sites are not suitable for the permanent disposal of coal combustion waste. Their unsuitability as places for waste disposal already is recognized in Illinois state law. For example, the Illinois Environmental Protection Act ("Act") and the Board's regulations prohibit the siting of sanitary landfills or waste disposal sites that are pollution control facilities within the boundary of the "100-year floodplain." 415 ILCS 5/22.19a; 35 Ill. Adm. Code 811.102. Location standards in the Board's general landfill regulations incorporate Section 404 of the Clean Water Act, 33 U.S.C. § 1344, relating to wetlands. 35 Ill. Adm. Code 811.102(e). The Act also prohibits the siting of solid waste disposal facilities "located above an active or inactive shaft or tunneled mine or within 200 feet of a fault that has had displacement within Holocene

time, unless engineering measures have been incorporated into the facility design to ensure that the integrity of the structural components of the facility will not be disrupted by geological processes." 415 ILCS 5/22.36. Their unsuitability as sites for coal combustion waste disposal is also recognized in the United States Environmental Protection Agency's ("U.S. EPA") proposed rule, which would restrict new coal combustion waste impoundments from locating within wetlands, less than two feet above the water table, or in unstable areas. U.S. EPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities*, 75 Fed. Reg. 35,128, 35,241-243 (June 21, 2010) (proposed Sections 40 C.F.R. 257.60-257.64).

During the last hearing, the Environmental Groups were asked whether, for the three types of sites covered by Section 841.400(b)(1)-(3), there might be available engineering controls to address issues of concern, so that closure by removal would not be required. The Environmental Groups reiterate their position at hearing that, while engineering measures may be available to address the conditions in (b)(3) (mines, voids, or other unstable terrain), the long-term concerns posed by the conditions in (b)(1) and (2) preclude engineering solutions.

The Environmental Groups also were asked for clarification on some terms used in (b)(1)-(b)(3). The Environmental Groups propose to reference some of the statutory language cited above. The Environmental Groups propose that the "floodplain" referenced in (b)(2) is the "100-year floodplain," as used in 415 ILCS 5/22.19a. For the definition of "wetlands," the Environmental Groups propose incorporating into the proposed rules the federal definition used in 40 C.F.R. 232.2: "The term 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."

Finally, to clarify the meaning of (b)(3), the Environmental Groups propose incorporating language from 415 ILCS 5/22.36, and revising (b)(3) to be applicable to units "located above an active or inactive shaft or tunneled mine or within 200 feet of a fault that has had displacement within Holocene time, unless engineering measures have been incorporated into the facility design to ensure that the integrity of the structural components of the facility will not be disrupted by geological processes." 415 ILCS 5/22.36.

III. The Proposed Rules Should Require Owners and Operators to Provide Financial Assurance for Closure and Post-Closure Care.

The Environmental Groups have proposed financial assurance requirements in a new Subpart F of the rule. *See* Ex. 1 at Sections 841.600-841.610. These requirements are adapted from draft regulations proposed by the Illinois Attorney General's Office during the stakeholder process described in the Agency's Statement of Reasons. (IEPA, Statement of Reasons at 26). The regulations require financial assurance in the amount of the cost estimate to complete closure and post-closure care in accordance with the closure and post-closure care plans that, in the case of existing impoundments, must be submitted to the Agency within one year of the rule's adoption. (See Ex 1 at Section 841.130(b)). The Environmental Groups' proposed Section 841.600 allows for a wide range of mechanisms for providing financial assurance that the owner or operator has sufficient resources to safely complete the closure and post-closure care of its CCW impoundments.

The question of the Board's authority to impose financial assurance requirements in this rule has been raised during this proceeding. The Board has broad authority to adopt rules to implement the Illinois Environmental Protection Act, limited only by the principle that the rules

must promote the purposes and provisions of the Act. *See* 415 ILCS 5/5 and 5/27. This authority provides ample justification for the Board to require assurance that an entity governed by the proposed Part 841 rules has the financial capacity to fulfill its obligations under that Part. Moreover, under Section 21.1 of the Act, the Board is specifically authorized to require financial assurance from "waste disposal operations" that require a permit under Section 21(d) of the Act. 415 ILCS 5/21.1; 21(d). The Board has held that the Hutsonville D ash impoundment was not subject to the Board's landfill regulations. *See In the Matter of: Petition of Ameren Energy Generating Company for Adjusted Standards from 35 Ill. Adm. Code Parts 811, 814, and 815 (Hutsonville Power Station*), PCB AS09-1 (Mar. 5, 2009), slip op. at 11. But that holding does not entail that CCW impoundments are not "waste disposal operations" for purposes of Sections 21 and 21.1 of the Act. 415 ILCS 5/21 and 21.1. The Board therefore has explicit authority to impose financial assurance requirements, and, indeed, the Environmental Groups' proposed revisions fill in a long-standing gap in Illinois environmental regulation.

The financial stakes are high: the cleanup and closure of a leaking impoundment can cost millions of dollars, and a coal ash spill can cost many times more. For instance, the Pennsylvania Department of Environmental Protection recently permitted the closure and associated cleanup of groundwater contamination for the Little Blue Run Impoundment with an estimated cost of more than $169 million, and therefore required a financial assurance bond of that amount.[1] *See* Pennsylvania Department of Environmental Protection, *DEP Issues Permit Requiring Closure of FirstEnergy's Little Blue Run Impoundment*, April 3, 2014, http://www.portal.state.pa.us/portal/server.pt/community/newsroom/14287?id=20442&typeid=1.

[1] The Little Blue Run Impoundment is the largest impoundment in the country. Stephen Huba, *Permit issued mandating closure of Little Blue Run*, The Review, April 5, 2014, https://www.reviewonline.com/page/content.detail/id/573061/Permit-issued-mandating-closure-of-Little-Blue-Run.html?nav=5008.

A coal ash impoundment spill can be even more expensive. U.S. EPA estimated the cleanup cost for the Tennessee Valley Authority spill into the Kingston River in 2008 to be $268.2 million. U.S. EPA, *Action Memorandum (AM) Fact Sheet on Selected Engineering Evaluation/Cost Analysis (EE/CA) Alternative Kingston Fossil Fuel Plant Release Site Harriman, Roane County, Tennessee, May 2010*, available at http://www.epa.gov/region04/kingston/FINAL_TVA_EECA_Fact_Sheet051810.pdf.

If an impoundment required closure and cleanup in Illinois and the owner lacked the funds to cover those costs—let alone the cost of a major spill—the State of Illinois could be forced to pay millions of dollars to remediate the site and protect its groundwater. The fact that most Illinois coal-fired power plants are owned by private companies (known as merchant generators), rather than by regulated utilities, compounds the risk that an owner could be bankrupt, legally unreachable, or otherwise unable or unwilling to pay for cleanup and closure, particularly when these costs may arise decades after the plant ceases to operate. To protect against such an unfair and onerous burden falling on the State and its taxpayers, and to implement Section 21.1 of the Act, 415 ILCS 5/21.1, the Board should include financial assurance requirements in this proposed rule.

Other states have required financial assurance from owners of coal ash impoundment sites, both when explicitly authorized by statute and when relying on general grants of rulemaking authority. For instance, Louisiana's statute governing solid waste disposal makes no mention of financial assurance, although it does include several other specific requirements: siting, treatment, processing, recordkeeping, and more. La. R.S. 30:2154. The state nevertheless has imposed financial assurance requirements on both its coal ash impoundments and landfills. *See* La. 33:VII.1303(A)(5). Michigan also requires financial assurance from both landfills and

surface impoundments, based on an explicit command of the state's Natural Resources and Environmental Protection Act. *See* Mich. Comp. Laws §324.11523.

Both public health and public financial concerns suggest that the Board should make financial assurance requirements under these rules a priority. If a CCW impoundment owner lacks the funds to pay for corrective action, closure, and post-closure care, it could leave the Agency and the State in the untenable position of choosing between financial pain and public health and environmental pain: either pay millions for site cleanup and coal ash disposal, or jeopardize public health by allowing further groundwater contamination. It is better to prevent the need for such a choice in the first place. The long time horizon for closure and potential contamination, the largely unregulated market in Illinois, and the risk of a costly cleanup process all point to the need for the State to protect itself and the enforceability of these rules with financial assurance requirements.

IV. The Proposed Rules Should Include Design Standards Applicable to Existing and New Impoundments.

The Environmental Groups have proposed the addition of design standards for both existing and new impoundments to the Agency's proposed rule. *See* Ex. 1at Section 841.450. Specifically, the Environmental Groups recommend adopting standards similar to U.S. EPA's "Subtitle D" proposal for existing impoundments: that within five years of the effective date of the rule, all existing impoundments be closed or retrofitted with a composite liner and leachate collection system. U.S. EPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities*, 75 Fed. Reg. at 35,243-245 (proposed Section 40 C.F.R. 257.71). The Environmental Groups' proposed revision is necessary for the rule to be consistent with the Illinois Groundwater Protection Act. *See*, *e.g.*, 415 ILCS 55/2(b). The Agency's proposed rule is in conflict with 415

ILCS 55/2(b) by allowing continued degradation of groundwater by permitting existing unlined and inadequately lined impoundments to remain open without lining or relining, even if they are causing groundwater contamination.

Similarly, for new impoundments, the Environmental Groups recommend adopting design standards similar to U.S. EPA's proposal. 75 Fed. Reg. 35,244-245 (proposed Section 40 C.F.R. 257.72). Again, U.S. EPA's proposed rules would require new impoundments to have a composite liner with a leachate collection system. *Id*. The Agency's proposal contains no design standards for new impoundments. It is beyond comprehension for the Agency to omit such requirements from this rule. In its Statement of Reasons, the Agency acknowledged 89 coal combustion waste surface impoundments at power generating facilities in Illinois, a number of which are unlined. (IEPA, Statement of Reasons at 3). The Agency further acknowledged that fourteen facilities had violations of the numerical groundwater quality standards on-site. (*Id*. at 5). Further, IEPA identified the harms caused by coal combustion waste leaching to groundwater in its Statement of Reasons:

> CCW can contain antimony, arsenic, barium, boron, beryllium, cadmium, chromium, chloride, iron, lead, mercury, manganese, nickel, selenium, silver, sulfate, and thallium. The presence of these contaminants threatens groundwater as these contaminants are soluble and mobile. When the CCW surface impoundments are not lined with impermeable material, these contaminants may leach into the groundwater, affecting the potential use of the groundwater. While some of these contaminants affect the safety of drinking water, others affect taste and odor, and other potential uses such as irrigation.

(*Id*. at 3). Without standards for new impoundments, there is no assurance that new impoundments will not cause all the harms identified in the Agency's Statement of Reasons, just as existing impoundments do now.

Design criteria such as those recommended by the Environmental Groups would help prevent additional impoundment failures and the associated contamination of groundwater and

surface water. Appropriate design criteria would, in helping to prevent impoundment failure and avoiding enforcement for violations, not only protect groundwater resources but also conserve enforcement and response resources of the State of Illinois.

V. The Proposed Rules Should Require an Antidegradation Assessment If a Proposed Corrective Action or Closure Plan Would Involve a New or Increased Discharge to Surface Waters.

The Environmental Groups have proposed that, when a corrective action or closure plan may involve a new or increased discharge of pollutants to surface waters, that the antidegradation assessment required by Board regulations be conducted before that plan is approved the Agency. *See* Ex. 1 at Section 841.310(e)(6) and (g); Section 841.410(a)(4) and (c).

Illinois antidegradation regulations require, among other things, an evaluation of alternatives to proposed increases in pollutant loading. 35 Ill. Adm. Code 302.105(f)(1)(D). That consideration of alternatives is typically undertaken during the NPDES permitting process.

However, in the case of a corrective action plan or a closure plan for a CCW impoundment, the NPDES process comes too late for alternatives to the discharge to be seriously considered. Once the Agency has approved a corrective action plan or a closure plan, it may be several years before the owner/operator seeks an NPDES permit or modification. If the owner/operator has invested years of time and money into the corrective action plan or closure plan, it will likely be much more onerous to change that plan to comply with antidegradation requirements. Instead, alternatives to pollution discharges should be considered at the time corrective action or closure alternatives are considered, and before the corrective action plan or closure plan is approved.

Under the Environmental Groups' proposal, the antidegradation assessment adheres to the same public participation requirements as are currently required under 35 Ill. Adm. Code 302.105(f)(3), but they would occur separately from the NPDES public notice process. Later, at such time as the owner/operator may apply for an NPDES permit or modification, the antidegradation assessment approved at the time the corrective action plan or closure plan was approved will serve as a pre-approved antidegradation assessment for that permit. No new antidegradation assessment need be submitted unless the proposed discharge differs from what was approved at the time the corrective action plan or closure plan was approved. In this way, the revised rule would ensure that any corrective action plan or closure plan is consistent with Clean Water Act requirements before it is approved.

VI. The Proposed Rule Should Be Applicable to Any "Surface Impoundment," Unless Such Unit is Being Regulated as a Permitted Landfill.

During the hearings conducted so far in this rulemaking, there has been some discussion about whether the proposed definition of "surface impoundments" subject to the proposed rule overlaps with the definition of "landfills" permitted under other Board rules. The Board's solid waste disposal regulations already draw a clear distinction between the two types of unit, providing that:

> "Landfill" means a unit or part of a facility in or on which waste is placed and accumulated over time for disposal, and which is not a land application unit, a surface impoundment or an underground injection well.

35 Ill. Adm. Code 810.103 (emphasis added). Under the Board's existing rules, then, a "landfill" is not a "surface impoundment," and a "surface impoundment" is not a "landfill."

The Joliet/Lincoln Quarry has been presented as an example of a structure that might otherwise be considered a "surface impoundment," but has been permitted as a "landfill." *See In the Matter of: Petition of Commonwealth Edison Co. for an Adjusted Standard From 35 Ill. Adm.*

Code Parts 811 and 814, AS96-9 (Aug. 15, 1996), slip op. at 2 ("Since 1975 Edison has deposited the bottom ash and slag into the Main Quarry, which was permitted as a landfill for coal combustion wastes in 1976."). The Main Quarry of the Joliet/Lincoln Quarry has been deemed a "landfill" and under the Board's existing rules therefore cannot also be a "surface impoundment." The Environmental Groups do not approve of the overall manner in which the Joliet/Lincoln Quarry has been regulated, but it is not the Environmental Groups' intention that the Joliet/Lincoln Quarry should be regulated as a "surface impoundment" under the proposed rules.

It also was suggested at hearing that the proposed definition of "surface impoundment" in the proposed rule as excluding "landfills" could allow the owner and operators of units that might otherwise be regulated under this rule as "surface impoundments" to claim , instead, that the units are actually unpermitted "landfills" that are not subject to the rule. *See* Agency's Post-Hearing Comments (Mar. 25, 2014), Attachment 1, at 15-16 (proposing definition of "surface impoundment" as excluding "landfills"). It is not the Environmental Groups' intention to leave a loophole that would leave any units outside the coverage of effective regulations. To ensure that any structure is regulated as either a "surface impoundment" under the proposed rules or as a permitted "landfill" (like the Joliet/Lincoln Quarry), the Environmental Groups therefore propose that the definition be changed slightly so it reads:

> "Surface impoundment" 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~~ that is designed to hold and/or transfer liquid waste or wastes containing free liquids, and which is not a landfill ~~as defined in 35 Ill. Adm. Code 810.103~~**permitted under Illinois Solid Waste Disposal rules at 35 Ill. Adm. Code, Parts 813 or 814**.

VII. The Proposed Rules Should Retain the Agency's Original Definition of "Leachate."

During the hearing conducted so far during this rulemaking, the Environmental Groups were asked whether their proposed revisions to the Agency's rule were intended to include stormwater impoundments within the scope of the rule's applicability. In their May 13, 2014 filing, the Environmental Groups had proposed to delete the following sentence from the definition of "leachate" in proposed Section 841.110: "Leachate does not include stormwater runoff that may come into contact with fugitive ash." The Environmental Groups acknowledge that one effect of that deletion would be to make the proposed rule applicable to impoundments that do not actually contain significant amounts of coal combustion waste or leachate, but only stormwater that has briefly come into contact with coal combustion waste.

It is not our intention to regulate surface impoundments that only contain stormwater that has come briefly into contact with (a) raw coal or (b) fugitive coal ash. (Tr., May 14, 2014, at 226-230). We recommend the following:

1. The Agency and the Board consider the constituents of concern that might be present if stormwater that has come into contact with raw coal or fugitive ash is routed to an impoundment that already contains coal combustion waste. Coal combustion waste contains different chemical constituents than stormwater that has come into contact with raw coal. This in turn would affect the leachate, the potential for groundwater contamination, and the resulting chemical constituents that may be found in groundwater contaminated with leachate from CCW impoundments. (Tr., May 14, 2014, at 231, line 21, to 233, line 2).
2. The Agency and the Board ensure that the rule covers all impoundments that are receiving stormwater (either through precipitation or stormwater being routed to a CCW

impoundment) even if the impoundment is no longer actively receiving coal combustion waste.

As a result, Environmental Groups have revised our proposal to include the sentence previously stricken from the Agency's proposed definition of "leachate." Further, by including the Environmental Groups' proposed definition of "operate" (*see* Ex. 1 at Section 841.110), the proposed rule would be applicable to all units receiving stormwater, and would address the concern that open units containing coal combustion waste and receiving stormwater pose a threat of leachate contaminating groundwater. (Tr., May 14, 2014, at 235, lines 11-14).

VIII. The Proposed Rules Should Include More Stringent Requirements for an Alternative Cause Demonstration.

The Environmental Groups have recommended the addition of requirements to the Agency's proposed section governing alternative cause demonstrations. *See* Ex. 1 at Section 841.305. As proposed, the rule's requirements for an alternative cause demonstration were insufficient and lacking in detail. First, the Environmental Groups recommend that the alternative cause demonstration report describe and justify the specific cause in the demonstration according to the categories identified in the rule: error, natural cause, or alternate contamination source. *See* Ex. 1 at Section 841.305(a); (Tr., May 15, 2014, at 47, lines 15-21). Second, the alternative cause demonstration requirements need to require a reasonable level of detail in the report. (Soderberg Test. at 8).

As proposed, the effect of an alternative cause demonstration is unclear and the Agency's proposed rule on alternative cause demonstrations conflicts with groundwater quality standards. *Compare* Ex. 2, Section 841.305 *with* 35 Ill. Adm. Code 620 Subpart D. As became clear at hearing, when Dr. Soderberg testified that statewide background data could be useful in an alternative cause demonstration, IEPA questioning implied that an alternative cause

demonstration is unnecessary when elevated concentrations are due to natural causes. (Tr., May 15, 2014 at 33, lines 18-22 ("So if the standards apply except due to natural causes, can you explain to me how the statewide background would help provide necessary information in determining an alternative cause demonstration?")). This is contrary to IEPA's proposed rule on CCW impoundments.

IEPA's proposed rule states that "A release is not attributable to a unit when . . . any exceedence is due to natural causes." Ex. 2 at Section 841.305. An owner or operator may make an alternative cause demonstration showing that an exceedance of a groundwater quality standard is not attributable to a release from a unit. *Id*. When groundwater quality standards are exceeded, and the exceedence is confirmed, and if "the owner or operator has not made an alternative cause demonstration pursuant to Section 841.305," the owner or operator shall undertake corrective action. *Id*. at Section 841.310. In other words, the need to undertake an alternative cause demonstration is only triggered by an exceedences of groundwater quality standards. *Id*.

Turning to the groundwater quality standards under 35 Ill. Adm. Code 620 Subpart D, however, it is clear that the two rules would not work together. The groundwater quality standards indicate that the numeric standards apply except due to natural causes. 35 Ill. Adm. Code 620.410 and 620.420. The groundwater standards provide that "concentrations of the following chemical constituents must not be exceeded in . . . groundwater" except "due to natural causes." 35 Ill. Adm. Code 620.410 and 620.420. In short, if a constituent is elevated due to natural causes, there is no exceedence. *Id*.

IEPA's proposed provision on the need to do an alternative cause demonstrations showing natural causes is triggered by exceedance, Section 841.305, directly contradicts the

groundwater quality standards which states there is no exceedance when constituent concentrations are elevated due to natural causes, 35 Ill. Adm. Code 620.410 and 620.420. As Dr. Soderberg was attempting to point out, this is the exact scenario in which comparing site specific data to statewide background data would be useful in determining whether constituents are elevated due to a site-specific cause or natural conditions across the state. (Tr. at 33-34, May 15, 2014).

IX. The Proposed Rules Should Include a Requirement That Closure is Required If Corrective Action is Ineffective in Containing Groundwater Contamination.

The Environmental Groups also propose the addition of a requirement that the failure of corrective action to promptly control contamination triggers a requirement of closure. *See* Ex. 1, Section 841.405(a)(2)(B). The Agency's proposed rule allows continued contamination of groundwater, putting it into conflict with the Illinois Groundwater Protection Act, 415 ILCS 55/2(b), because the Agency's rule lacks provisions to address ongoing contamination from impoundments where there has been an unsuccessful attempt at corrective action. This allows existing unlined and inadequately lined impoundments that are causing groundwater contamination to remain open without a viable corrective action plan. Consequently, the Board should adopt a rule that contains a requirement for closure where the owner or operator fails to implement a viable corrective action plan.

X. The Proposed Rules Should Include a Prohibition on Using CCW for Final Grade and Slope.

The Environmental Groups' proposed revisions to the Agency's proposed rule include a modification to the closure requirements on final slope and stabilization. *See* Ex. 1 at Section 841.415. Specifically, the Environmental Groups recommend that Section 841.415 prohibit "the use of CCW in establishing the final grade and slope." *Id*. The Environmental Groups' witness

Dr. Soderberg explained the rationale: using CCW for the final grade and slope might lead to exposed CCW on the berms. (Tr. at 69-70 May 15, 2014); Soderberg Prefiled Test. at 10. Under the proposed rules, the final cover system is not required to cover the berms, nor is it required to minimize erosion of the berms. Rather, it is only required to minimize erosion of the final cover itself: "The final cover must be designed and constructed to: Promote drainage and minimize erosion or abrasion of the final cover." *See* Ex. 2 at Section 841.420. None of the requirements referenced in the Agency's prefiled questions on this topic and none of the requirements of Section 841.415 on Final Slope and Stabilization or Section 841.420 on Final Cover System actually require a final cover system to eliminate exposed CCW used for the final grade and slope or address that CCW that may be exposed on the berms. Thus, a prohibition on using CCW for final grade and slope is the only effective means of ensuring that there will not be exposed CCW on the berms that could be subject to erosion and lead to contamination of groundwater or surface waters. Moreover, a prohibition of using CCW to establish final grade and slope is particularly appropriate in the case of inadequately lined impoundments; adding more CCW to such impoundments only deepens their existing threat to human health and the environment.

XI. Conclusion

The Environmental Groups respectfully request that the Board adopt the revisions to the Agency's proposed new Part 841 rules attached hereto as Exhibit 1, and will be available to answer any questions about the proposed revisions at hearing later this month.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Andrew Armstrong, hereby certify that I have filed the attached **Post Hearing Comments of the Environmental Law & Policy Center, Environmental Integrity Project, Sierra Club, and Prairie Rivers Network** in R14-10 upon the attached service list by depositing said documents in the United States Mail, postage prepaid, in Chicago, Illinois on June 6, 2014.

Respectfully submitted,

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Illinois Pollution Control Board
R2014-10

Exhibit 1 – Environmental Groups' Proposed Revisions to Proposed New Part 841 (June 6, 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: GENERAL

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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
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841.165 Public Notice
841.170 Inspection

SUBPART B: MONITORING

Section
841.200 Hydrogeologic Site Characterization
841.205 Groundwater Monitoring System
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841.215 Chemical Constituents and Other Data to Be Monitored
841.220 Determining Background Values
841.225 Statistical Methods
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~~841.240 Inspection~~

SUBPART C: CORRECTIVE ACTION

SUBPART D: CLOSURE

SUBPART E: AGENCY REVIEW PROCEDURES

SUBPART F: FINANCIAL ASSURANCE

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, and design standards and financial assurance requirements for surface impoundment units containing coal combustion waste or leachate from coal combustion waste at power generating facilities.

Section 841.105 Applicability

a) Except as specified in subsection (b) of this Section, this Part applies to all surface impoundment units 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.~~

b) Except for the requirements of subsection (c) of this Section, ~~T~~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;~~

1) subject to 35 Ill. Adm. Code 840;

2) not operated after the effective date of these rules, and whose coal combustion waste or leachate from coal combustion waste does not cause or contribute to an exceedence of the groundwater quality standards;~~.~~

3) 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 X10^{-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) that does not contain more than one cubic yard of CCW and is used to only collect stormwater runoff that~~, which~~ does not contain leachate.

~~BOARD NOTE:~~

c) A unit ~~not subject to~~that is otherwise exempt from the requirements of this Part under the operation of subsection (b) of this Section ~~should~~ shall maintain records demonstrating how an~~the~~ exemption in subsection (b) of this Section applies~~. or how the unit is outside the scope of application set forth in subsection (a)~~. Justification for an exemption under subsection (b) of this Part also shall be included in any hydrogeologic site characterization for the exempted unit's power generating facility, the groundwater monitoring plan for any unit at the same power generating facility, and each statistical analysis for any unit at the same power generating facility.

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.

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

"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 and projected vertically downward, or property boundary, whichever is ~~less~~closer to the unit, and a depth of 15 feet from the bottom of the unit or 15 feet into the groundwater table, whichever is greater. 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.

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

"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]

~~"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.~~

"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.

"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.

"Operate" means receiving waste or stormwater flow. A surface impoundment that is open to receive stormwater as direct precipitation, runoff, or process water is "receiving waste or stormwater flow".

"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]

"Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment. [415 ILCS 5/3.395]

"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]

"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.~~

"Surface impoundment" 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~~that is designed to hold and/or transfer liquid waste or wastes containing free liquids, and which is not a landfill~~, as defined in 35 Ill. Adm. Code 810.103~~ permitted under Illinois Solid Waste Disposal rules at 35 Ill. Adm. Code, Parts 813 or 814.

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

"Waters" means all accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this State. [415 ILCS 5/3.550].

"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.

"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.

Section 841.115 Abbreviations and Acronyms

~~Agency~~	~~Illinois Environmental Protection Agency~~
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).

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.

USEPA, United States Environmental Protection Agency, Region IV Science and Ecosystem Support Division.

"Operating Procedure: Pore Water Sampling" (Feb. 28, 2013).

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

"Field Techniques for Estimating Water Fluxes Between Surface Water and Ground Water," Techniques and Methods 4-D2 (2008).

"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)

b) This Section incorporates no later editions or amendments.

Section 841.125 Groundwater Quality Standards

a) The owner or operator shall comply with the groundwater standards in 35 Ill. Adm. Code 620 at all times, notwithstanding the compliance period established in Section 841.130 of this Part~~, including the corrective action process in 35 Ill. Adm. Code 620.250~~.

b) Compliance with the groundwater quality standards shall be measured at the compliance point, or compliance points if more than one compliance point exists.

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.

Section 841.130 Compliance Period

a) Except as provided in this Section, the~~The~~ compliance period for this Part 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, closure plan, and post-closure care 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;

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 30~~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.

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. If an application to revise an operating permit or NPDES permit is denied, then the owner or operator must submit a revised preventive response, corrective action, or closure plan to the Agency within 90 days. -

Section 841.155 Construction Quality Assurance Program

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 owner or -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

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.

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:

Ai) the reasons for his or her absence;

Bii) a designation of a person who must exercise professional judgment in carrying out the duties of the CQA officer-in-absentia;

Ciii) 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 alternative cause demonstrations, corrective action plans, ~~and~~ closure plans, and post-closure care plans, or modifications thereto, on the Agency's webpage for a period not shorter than 60~~30~~ days.

b) The Agency shall accept written comments for a period of 60~~30~~ days beginning on the day the proposed alternative cause demonstration, corrective action, ~~or~~ closure plan, or post-closure care plan, or modification thereto, was posted on the Agency's webpage.

c) The Agency shall hold a public informational meeting whenever it finds a significant degree of public interest in a proposed plan on the basis of public comment. In holding meetings under this Part, the Agency is not required to comply with the procedures of 35 Ill. Adm. Code Part 164.

d~~c~~) While the Agency may respond to the comments received pursuant to subsection (b) of this Section, such response is not required.

e~~d~~) The Agency shall take any comments received into consideration in making its final decision and shall post its final decisions on the proposed alternative cause demonstration, corrective action plans, ~~and~~ closure plans, and post-closure care plans, or modifications thereto, on the Agency's webpage on the postmarked date that the notice is mailed and maintain it there for a period not shorter than 35 consecutive~~0~~ days.

Section 841.170 Inspection

a) While a unit is in operation, the owner or operator must inspect it~~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 promptly perform repairs necessary to correct any problem observed during an inspection.

c) 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.

ed) 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.

e) At all units that have incorporated in their design an earthen dam, the owner or operator shall install, maintain, and monitor instruments to monitor the water content or pore water pressures within the earthen dam.-

SUBPART B: MONITORING

Section 841.200 Hydrogeologic Site Characterization

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 or surface water 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 and surface water impact mitigation alternatives, including but not limited to corrective action and closure of the unit.–

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 and downgradient hyporheic zones where exchanges between groundwater and surface water occurs;

4) Identification of nearby pumping wells including but not limited to all down gradient or downstream community water supplies;

5) Identification of any potential hydrologic connection between the unit and nearby surface water bodies and pumping wells;

6~~5~~) Geologic setting;

7~~6~~) Structural characteristics;

8~~7~~) Geologic cross-sections;

9~~8~~) Soil characteristics;

10~~9~~) Identification of confining layers;

11~~10~~) Identification of potential migration pathways;

12~~11~~) Groundwater quality data;

13~~12~~) Vertical and horizontal extent of the geologic layers to a minimum depth of 100 feet below land surface;

14~~13~~) Chemical and physical properties of the geologic layers to a minimum depth of 100 feet below land surface;

15~~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~~

16~~15~~) Identification of any unit at the same power generating facility that is subject to an exemption under Section 841.105(b) of this Part, including the justification for the exemption's applicability; and

17) 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 water level measurements and 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;

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;

5) assess the overall groundwater flow and direction at the site, as well as changes to the flow regime due to leachate from the unit; and~~-~~

6) establish the hydraulic gradient between the unit and any nearby surface water, including the installation of monitoring points for measuring water levels and collecting water samples from multiple depths within the hyporheic zone where exchange between groundwater and surface water occurs.

d) The groundwater monitoring system must include monitoring~~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.

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, and to determine the potential for any release of a contaminant to surface water through groundwater contaminated by the unit.

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:

i) the date when each unit began receiving coal combustion waste, or leachate from coal combustion waste, and the date or anticipated date of the installation of any pollution control technology that affected, or will affect, the type or composition of coal combustion waste received by the unit;

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, including a description of all potential hydrogeologic connections between each unit at the site and surface waters, a map of the potentiometric surface, and an identification of any unit at the same power generating facility that is subject to an exemption under Section 841.105(b) of this Part, including the justification for the exemption's applicability.

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 concentrations and the potentiometric surface., ~~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";

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.”

10) “Field Techniques for Estimating Water Fluxes Between Surface Water and Ground Water.”

11) “Operating Procedure – Pore Water Sampling.”

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, 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

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)~~b)~~ 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)~~c)~~ 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~~three -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.

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. 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 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.

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 a minimum of eight data points, as recommended by the 2009 Unified Guidance, and 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 Frequency

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 chemical constituents that differ to a statistically significant degree.

2)~~c)~~ ~~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 any unit that is up gradient of or is otherwise associated with ~~the~~

~~the unit or units associated with~~ the monitoring well does~~es~~ not have a liner that complies with the surface impoundment design standard in Section 841.450 of this Part or that ~~with two feet of compacted earthen material with a hydraulic conductivity of less than or equal to 1 x10^{-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~~ year~~s~~ for a chemical constituent that has not been detected in that monitoring well in the last five years 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~~ year~~s~~ for a chemical constituent that has not been detected in that monitoring well in the last five years.

3) Monitoring frequency may not be reduced pursuant to this subsection (c) for the following chemical constituents: arsenic, boron, manganese, sulfate, and total dissolved solids.

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.

Section 841.235 ~~Annual~~ Statistical Analysis

a) The owner or operator of a unit must perform a~~n 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, every time that monitoring is conducted pursuant to Section 841.230 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 35 Ill. Adm. Code 620.210(a)(1), (a)(2), or (a)(3), or Class III groundwater under 35 Ill. Adm. Code 620.230; 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~~;

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

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 a release attributable to a unit causes, threatens or allows an impairment or exclusion of existing or potential use, ~~, and the groundwater is 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 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~~, 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 90~~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) The statistical analysis shall include an updated potentiometric surface map for the unit's site.

e~~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.

f~~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).

g~~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.

~~**Section 841.240 Inspection**~~

~~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; or

2) submit to the Agency a corrective action plan as provided in Section 841.310 of this Part~~;~~ and initiate closure ~~plan~~ of all units, releases from which have caused an exceedence of the groundwater quality standard at the compliance point, 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. In order to demonstrate an alternative cause, the report must describe and justify a specific cause, with documentation that establishes the existence of the asserted error, natural cause, or alternate contamination source.

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 and initiate closure ~~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.

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, and 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) proposed plans, specifications, and drawings for the proposed corrective action;

3) proposed timeline for implementation and completion of all proposed corrective actions;

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;

5) an assessment of alternatives to the proposed corrective action, including whether any alternative corrective action would result in greater protection of human health and the environment;

6) if the corrective action would lead to a new or increased loading of pollutants to surface waters, an antidegradation demonstration as required by 35 Ill. Admin. Code 302.105(f);

~~6~~7) estimates of the cost of the corrective action, including of each evaluated corrective action alternative;

8~~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;

9~~8~~) description of the CQA program required by Section 841.155 of this Part.

10~~9~~) description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls.;

11~~10~~) an evaluation of the effects of a cover, when requested by the Agency;

12~~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

13~~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.

~~f~~g) The Agency shall put any antidegradation demonstration submitted under 841.310(e)(6) on public notice as required by 35 Ill. Admin. Code 302.105(f)(3). If required, the antidegradation demonstration must be approved by the Agency before a corrective action plan can be approved. The approved antidegradation

demonstration may then be deemed complete for the purposes of a NPDES modification necessary to implement the corrective action plan.

hg) 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.

ih) The owner or operator shall continue corrective action measures to the extent necessary to ensure that no groundwater quality standard is exceeded at the compliance point or points.

ji) 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.

k) If the Agency determines that the corrective action program no longer satisfies the requirements of this Section, it shall notify the owner or operator, and the operator shall, within 90 days of that notification, submit a modification of the corrective action plan to the Agency.

lj) 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.

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 and ~~,~~ eliminates or minimizes to the greatest extent practicable ~~or eliminates~~ releases from the unit; and

2) Minimizes the need for maintenance during and beyond the post-closure care period;

b) Closure shall~~If closure is to~~ be by removal of all impounded coal combustion waste, and leachate from coal combustion waste, unless the Agency determines that removal is technically infeasible or would not result in greater protection of human health and the environment. If any of the following criteria are present, closure shall be by removal unless technically infeasible:

1) Coal combustion waste from the unit is present in the water table;

2) The unit is located in a 100-year floodplain or wetlands; or

3) The unit is located above an active or inactive shaft or tunneled mine or within 200 feet of a fault that has had displacement within Holocene time, unless engineering measures have been incorporated into the facility design to ensure that the integrity of the structural components of the facility will not be disrupted by geological processes.

The owner or operator shall remove all coal combustion waste~~, as well as containment system components (liners, etc)~~. If the owner or operator does not also remove the containment system components (liners, etc.), the containment system components left in place shall be cleaned to remove all coal combustion waste and punctured to allow stormwater to cross through the system. All coal combustion waste must be properly disposed in accordance with the applicable laws and regulations 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, either by disposal off-site in accordance with the applicable laws and regulations or by an authorized discharge through a properly permitted outfall, 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).

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 demonstration pursuant to Section 841.305 of this Part, and the owner or operator elects to close the unit(s), thet~~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 or 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, ~~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 T~~the unit shall be closed within two years of the Agency's approval of the closure plan, or within two years of notice that an impact on an existing potable water supply has occurred, whichever occurs later, unless the Agency approves a longer timeline.

2) Category 2: ~~Inactive~~ Other Units~~-~~

A) Unless Category 1 applies~~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, or within

five years from the submission of groundwater monitoring results confirming an exceedence of the applicable groundwater quality standard attributable to a release from the unit at an approved compliance point, whichever occurs later.~~unless the Agency approves a longer timeline.~~ The requirement to close the impoundment following the exceedence of an applicable groundwater quality standard is waived if no groundwater quality standard is exceeded for four consecutive quarters following the groundwater monitoring results confirming the exceedence. -

~~3) Category 3: Active Unit~~

~~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 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

The owner or operator of any unit must develop and submit to IEPA a closure plan for the unit. Before a unit may be closed, ~~owner or operator must submit a closure plan to the Agency for review and approval~~a closure plan must have been reviewed and approved by the Agency. As appropriate, the owner or operator may submit a combined corrective action and 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) 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, including whether any alternative closure activities would result in greater protection of human health and the environment and, if closure is not proposed by removal of all coal combustion waste and leachate from coal combustion waste, an explanation of why removal is technically infeasible or would not result in greater protection of human health and the environment. ~~when requested by the Agency~~

4) if the closure plan would lead to a new or increased loading of pollutants to surface waters, an antidegradation demonstration as required by 35 Ill. Adm. Code 302.105(f);

5~~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.

6~~5~~) estimates of the cost of closure and post-closure care, including of each evaluated closure alternative;

7~~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;

8~~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;

9~~8~~) description of the CQA program required by Section 841.155 of this Part.

10~~9~~) description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls;

1~~0~~) 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

1~~2~~) the signature and seal of the professional engineer supervising the preparation of the closure plan.

b) The Agency may request additional information from the owner or operator when necessary to evaluate the proposed closure plan.

c) The Agency shall put any antidegradation demonstration submitted under Section 841.410 (a)(4) of this Part on public notice as required by 35 Ill. Admin. Code 302.105 (f)(3). If required, the antidegradation demonstration must be approved by the Agency before a corrective action plan can be approved. The approved antidegradation demonstration may then be deemed complete for the purposes of a NPDES modification necessary to implement the closure plan.

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 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 not 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.

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 X 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 X 10^{-7} cm/sec.~~ -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. The permeability of the cover system must be demonstrated by a standard field or laboratory demonstration method.

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 x 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:

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.

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~~.

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.

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 until

1) compliance with the groundwater quality standards set forth in 35 Ill. Adm. Code 620 or in a groundwater management zone established pursuant to 35 Ill. Adm. Code 620.250; and

2) a minimum of ~~ten~~ thirty years from the Agency's approval of the closure report.

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.

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:

1) A certification that the owner or operator has performed all post-closure maintenance activities required by Section 841.430 of the Part during the preceding year, including a certification that there are presently no "tears, rips, punctures, and other damage to the geosynthetic membrane" and no "disturbance of the final cover, liner, or any other components of the containment system," unless approved by the Agency prior to the disturbance;

2) ~~Annual~~sStatistical analyses as required by Section 841.235 of this Part of all groundwater monitoring data generated by the groundwater monitoring program required by Section 841.210 of this Part;

3~~2~~) A copy of any notice submitted to the Agency pursuant to Section 841.235(c)(1) of this Part;

4~~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

5~~4~~) The completed closure or post-closure activities performed during the preceding year.

Section 841.450 Design Standards for New and Existing Impoundments

a) No later than five years after the effective date of this Part, all operating units shall be constructed:

1) With a composite liner, as defined in paragraph (a)(2) of this section, and a leachate collection system, or with a liner system of equivalent or superior performance. The design shall be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

2) For purposes of this section, "composite liner" means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane line (FML), and the lower component must consist of at least two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

3) Any impoundment that was in operation on or before the effective date of this Part shall be lined with a composite liner system as defined in paragraph (a)(2) of this Section and leachate collection system, within five years of the effective date of this Part or have been closed in accordance with this Subpart.

b) Any new unit that begins operation after the effective date of this Part must be constructed:

1) With a composite liner, as defined in paragraph (a)(2) of this section, and a leachate collection system, or with a liner system of equivalent or superior performance. The design shall be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

2) For purposes of this section, "composite liner" means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane line (FML), and the lower component must consist of at least two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML

component must be installed in direct and uniform contact with the compacted soil component.

Section 841.4550 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 or with any regulation adopted under that Act applicable to the closure of a unit, RCRA or the regulation adopted under that Act will prevail.

SUBPART E: AGENCY REVIEW PROCEDURESCOAL

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~~ 120 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.

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:

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 relative to any remaining contamination, including, but not limited to, provisions for the use of long-term restrictions on the use of groundwater as a potable water supply, if appropriate;

C) The likelihood that the plan or modification will protect human health and the environment, including surface water quality, and the possibility that alternative plans or modifications would be more protective.

4~~5~~) 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.

e~~f~~) 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~~ 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) The Agency's approval of a plan or modification submitted to it pursuant to this Part 841 shall not be a defense to violations of the Act or the Board's Regulations.

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

f) The Agency's approval of a report or certification submitted to it pursuant to this Part 841 shall not be a defense to violations of the Act or the Board's Regulations.

SUBPART F: FINANCIAL ASSURANCE

Section 841.600 Mechanisms for Providing Financial Assurance

a) Any of the following mechanisms may be utilized to provide financial assurance under this subpart: a trust fund, a surety bond guaranteeing payment, a surety bond guaranteeing performance, a letter of credit, closure insurance, self-insurance, a local government financial test, a local government guarantee, a corporate financial test, or a corporate guarantee.

b) An owner or operator may satisfy the requirements of this subpart by establishing more than one financial mechanism per unit.

c) An owner or operator may use a financial assurance mechanism to meet the requirements of this subpart for more than one unit if the amount of funds available through the mechanism is no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each unit.

Section 841.605 Amount of Financial Assurance Required

a) The amount of financial assurance required under this Subpart shall be equal to the cost estimate to complete the closure and post-closure activities under the closure and post-closure plans approved by the Agency.

Section 841.610 Time Frame for Compliance with Financial Assurance Requirements

a) The owner or operator of any new unit that begins operation after the effective date of this Part must be in compliance with this Subpart prior to beginning operation.

b) The owner and operator of any unit that was in operation on or before the effective date of this Part shall be in compliance with this Subpart no later than 2 years after the effective date of this Part.

Exhibit 2 – Agency's Proposed Rule (March 25, 2014)

Attachment 2 – Revised Proposed Part 841

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: GENERAL

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841.120 Incorporations by Reference
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SUBPART B: MONITORING

Section
841.200 Hydrogeologic Site Characterization
841.205 Groundwater Monitoring System
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841.215 Chemical Constituents and Other Data to Be Monitored
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SUBPART C: CORRECTIVE ACTION

Section
841.300 Confirmation Sampling

[1] Hearing Exhibit 5, attachment 1, p.22.
[2] Hearing Exhibit 5, attachment 1, p.22.

Attachment 2 – Revised Proposed Part 841

SUBPART D: CLOSURE

SUBPART E: AGENCY REVIEW PROCEDURES

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 2 – Revised Proposed Part 841

Section 841.105 Applicability

a) 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.

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 $X10^{-7}$ 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

5) that does not contain more than one cubic yard of CCW and is [3]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).[4]

[3] Hearing Exhibit 5, attachment 1, p.11.
[4] Illinois EPA's Post Hearing Comments, attachment 1, p. 4, March 25, 2014.

Attachment 2 – Revised Proposed Part 841

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.[5]

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

"Compliance point"[6] 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 less, and a depth of 15 feet from the bottom of the unit or 15 feet into the groundwater table, whichever is greater. 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

[5] Hearing Exhibit 5, attachment 1, p.20.
[6] Hearing Exhibit 5, attachment 1, p.12-13.

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.

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

"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][7]

"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.[8]

"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.

"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]

[7] Hearing Exhibit 5, attachment 1, p.12.
[8] Hearing Exhibit 5, attachment 4, p.9.

"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]

"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.~~[9]

"Surface impoundment"[10] 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.

"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.[11]

[9] Hearing Exhibit 5, attachment 1, p.14-15.
[10] Illinois EPA's Post Hearing Comments, attachment 1, p. 15-16, March 25, 2014.
[11] Hearing Exhibit 5, attachment 1, p.14-15.

Attachment 2 – Revised Proposed Part 841

Section 841.115 Abbreviations and Acronyms

~~Agency~~	~~Illinois Environmental Protection Agency~~[12]
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,

[12] Hearing Exhibit 5, attachment 1, p.15.

III, IIIA, and IIIB (Doc. No. 955-001-00000-1), (available on-line at http://www.epa.gov/epaoswer/hazwaste/test/main.htm).

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)[13]

b) This Section incorporates no later editions or amendments.

Section 841.125 Groundwater Quality Standards[14]

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) Compliance with the groundwater quality standards shall be measured at the compliance point, or compliance points if more than one compliance point exists.

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.

[13] Hearing Exhibit 5, attachment 1, p.14-15.
[14] Hearing Exhibit 5, attachment 4, p.11; Illinois EPA's Post Hearing Comments, attachment 1, p. 17, March 25, 2014.

Attachment 2 – Revised Proposed Part 841

Section 841.130 Compliance Period[15]

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;

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;

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

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.

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.

Attachment 2 – Revised Proposed Part 841

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 Program[16]

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 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;

[16] Hearing Exhibit 5, attachment 4, p.8; Illinois EPA's Post Hearing Comments, attachment 1, p. 8-9, March 25, 2014.

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.

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:

i) the reasons for his or her absence;

ii) a designation of a person who must exercise professional judgment in carrying out the duties of the CQA officer-in-absentia;

iii) 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.

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 Inspection[17]

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 Characterization[18]

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:

[17] Hearing Exhibit 5, attachment 1, p.22.
[18] See Hearing Exhibit 5, attachment 4, p.8-9; Illinois EPA's Post Hearing Comments, attachment 1, p. 10-11, March 25, 2014.

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;

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;

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~~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.[19]

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:

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

[19] Hearing Exhibit 5, attachment 1, p.19.

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";

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,[20] 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

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.

[20] Hearing Exhibit 5, attachment 3, p.24.

c)~~b)~~ 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)~~c)~~ 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.[21]

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.[22] 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 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.

[21] Illinois EPA's Post Hearing Comments, attachment 1, p. 1-4, March 25, 2014.
[22] Illinois EPA's Post Hearing Comments, attachment 1, p. 4-5, March 25, 2014.

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.

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 Frequency[23]

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 chemical constituents that differ to a statistically significant degree.

2)~~c)~~ ~~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;

[23] Illinois EPA's Post Hearing Comments, attachment 1, p. 1-4, March 25, 2014.

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 $x10^{-7}$ 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.

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~~;[24]

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

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~~

[24] Hearing Exhibit 5, attachment 4, p.9.

~~groundwater under 35 Ill. Adm. Code 620.230~~,[25] 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).[26]

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.

~~Section 841.240 Inspection~~[27]

~~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;~~

[25] Hearing Exhibit 5, attachment 4, p.9.
[26] Illinois EPA's Post Hearing Comments, attachment 1, p. 1-4, March 25, 2014.
[27] Hearing Exhibit 5, attachment 1, p.22.

~~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;

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.

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) proposed plans, specifications, and drawings for the proposed corrective action;

3) proposed timeline for implementation and completion of all proposed corrective actions;

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) estimates of the cost of the corrective action;

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;

8) description of the CQA program required by Section 841.155 of this Part.

9) description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls.;

10) an evaluation of the effects of a cover, when requested by the Agency;

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

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 to the extent necessary to ensure that no groundwater quality standard is exceeded at the compliance point or points.

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.

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.

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

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)~~.[28] All coal combustion waste must be properly disposed in accordance with the applicable laws and regulations[29] 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.

[28] Hearing Exhibit 5, attachment 3, p.18-19.
[29] Hearing Exhibit 5, attachment 1, p.25-26.

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).[30]

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 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

[30] Hearing Exhibit 5, attachment 1, p.27.

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

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 620.240[31] 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:

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) 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

[31] Hearing Exhibit 5, attachment 1, p.27

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;

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;

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;

8) description of the CQA program required by Section 841.155 of this Part.

9) description of institutional controls prohibiting potable uses, if applicable, and copies of the instruments achieving those controls;

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

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

b) The Agency may request additional information from the owner or operator when necessary to evaluate the proposed closure plan.

Attachment 2 – Revised Proposed Part 841

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 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.

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 X 10^{-7} cm/sec.~~[32] 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 x 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 x 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:

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.

[32] Hearing Exhibit 5, attachment 1, p.28-29.

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.

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.

Attachment 2 – Revised Proposed Part 841

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~~.[33]

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.

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.

[33] Hearing Exhibit 5, attachment 1, p.14-15.

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 until

1) compliance with the groundwater quality standards set forth in 35 Ill. Adm. Code 620 or in a groundwater management zone established pursuant to 35 Ill. Adm. Code 620.250; and

2) a minimum of ten years from the Agency's approval of the closure report.

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.

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:

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.

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:

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 relative to any remaining contamination, including, but not limited to, provisions for the use of long-term restrictions on the use of groundwater as a potable water supply, if appropriate;

5) 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.

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~~[34] 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.

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

[34] Hearing Exhibit 5, attachment 1, p.30.