

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

**AMEREN ASH POND CLOSURE RULES
(HUTSONVILLE POWER STATION):
PROPOSED 35 ILL. ADM. CODE 840.101
THROUGH 840.144**

**R09-21
(Rulemaking – Land)**

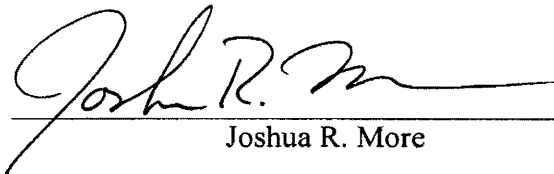
NOTICE OF FILING

To:

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

Persons included on the
ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that we have today filed the attached, **JOINT STATEMENT
IN SUPPORT OF PROPOSED REVISIONS**, with the Office of the Clerk of the Pollution
Control Board.


Joshua R. More

Dated: September 22, 2009

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:)	
)	
AMEREN ASH POND CLOSURE RULES)	R09-21
(HUTSONVILLE POWER STATION))	(Rulemaking – Land)
PROPOSED: 35 ILL. ADM. CODE PART)	
840.101 THROUGH 840.144)	

JOINT STATEMENT IN SUPPORT OF PROPOSED REVISIONS

NOW COME Ameren Energy Generating Company (“Ameren”) and the Illinois Environmental Protection Agency (“Agency”), by their respective attorneys, and state as follows:

Introduction

On May 19, 2009, Ameren filed a proposal for site-specific rule with the Pollution Control Board (“Board”) proposing regulations for the closure of Ash Pond D at Ameren’s Hutsonville Power Station located in Crawford County, Illinois. Ameren’s original proposal adds to the Board’s rules a new Subchapter j, Surface Impoundments, and new Part 840, Site-Specific Closure of Surface Impoundments, consisting of Subpart A, the site-specific rule applicable to Ash Pond D.¹ As provided more fully in the statement of reasons, the proposed rule sets forth the requirements for final closure of the Ash Pond D including the capping and covering of the impoundment; management of impacted groundwater through monitoring; and the installation of a collection trench to mitigate off-site impacts.

On August 18, 2009, the Agency filed proposed revisions to Ameren’s proposal, along with pre-filed testimony of several Agency staff from the Bureaus of Water and Land in support of the proposed revisions. The Agency’s revisions endorsed the closure approach proposed by

¹ In the revised proposal, the Agency has proposed and Ameren has accepted that the new Subchapter and Part be limited to “coal combustion waste” surface impoundments.

Ameren but revised the rule to conform to the Agency's procedural and reporting requirements and preferred mechanism for defining applicable groundwater quality standards both on and off-site. In particular, the Agency proposed revisions for direct administrative oversight of closure and post-closure activities with documentation and procedural due process provisions and groundwater quality standards drawn from provisions and concepts in the Board's Groundwater Quality rules (35 Ill. Adm. Code 620). As an additional optional remedial alternative, the Agency also proposed the establishment of a groundwater management zone (GMZ) to address off-site impacts.

Following the filing of the Agency's proposed amendments, Ameren initiated contact with the Agency, and a series of discussions were held to determine if the outstanding differences could be reduced. As a result, the parties have reached a resolution on a conceptual framework for closing Ash Pond D and have filed with this joint statement proposed regulatory language reflecting that joint agreement. Pertinent substantive revisions to the Agency's proposed amendment and rationale supporting the proposed rule are summarized herein.

Discussion

The Agency and Ameren agree the proposed rule provides for a closure alternative for Ash Pond D which is protective of human health and the environment. Ameren has presented analyses of closure alternatives in Chapter 5 of its Technical Support Document and has concluded the proposed alternative is economically reasonable and technically feasible for Ameren to implement at Hutsonville Power Station. The Agency has not conducted an independent analysis of the costs of closure alternatives, but it has no reason to believe this proposal is economically unreasonable and agrees the approach proposed here is technically feasible. As the Agency notes, "the low permeability cover and the extraction trench proposed

by Ameren will allow Ameren to successfully achieve the applicable groundwater standards at the Hutsonville site.” *Pre-filed Testimony of L. Dunaway, pg. 7.* Groundwater modeling performed by Ameren reflects that over time, water quality will continue to improve and applicable, off-site Class I Groundwater Quality Standards as measured at the down-gradient property boundary will eventually be achieved. Installation of the collection trench will capture impacted groundwater and accelerate the attenuation of off-site impacts. The rule requires Ameren to install a geosynthetic membrane cover which will substantially reduce infiltration of water into the ash material thereby mitigating additional loading of leachate into the groundwater. At the end of the post-closure period, institutional controls will be placed on the Ameren property to permanently restrict the use of impaired groundwater. All of these measures help ensure that impacts relating to Ash Pond D remain largely localized to the Hutsonville Site and are protective of human health and the environment.

Geological conditions at the Hutsonville Site have been well studied and groundwater conditions have been monitored since 1984. The Agency has reviewed the various technical reports and submittals set forth in the Technical Support Document (hydrogeologic assessment, groundwater modeling and groundwater monitoring data) filed by Ameren and concurs that such plans and reports provide useful technical information in support of the proposed rule. Accordingly, while Ameren must develop and submit to the Agency for approval a closure plan including engineering and design of the cap and collection trench and a groundwater monitoring plan and protocols, extensive additional investigations are not expected to be necessary at this time. Nonetheless, the Agency will make its final determination during the review of the closure plan, subject to the review periods set forth in the proposed rule.

The following sections discuss the substantive provisions of the revised rule agreed to by both Ameren and the Agency.² Minor revisions relating to reporting requirements or changes that are simply grammatical or stylistic in nature or meant to maintain consistency with the Board's rulemaking format are not discussed.

General

Section 840.104 Definitions

The parties define the term "statistically significant" in the definitions section because that term is used in several sections of the site-specific rule. The participants also agree to use the terms "upper zone of the underlying aquifer" and "lower zone of the underlying aquifer" as those terms were proposed by the Agency and are defined in the proposed revisions. Ameren's designation in its original proposal of Zone "A" and Zone "B" are eliminated in favor of the Agency's approach with respect to applicable groundwater standards that will apply both onsite and off-site as set forth in Section 840.116. The Agency's approach provides a more straight forward framework for determining compliance obligations and relies largely on standards and requirements previously promulgated by the Board in 35 Ill. Adm. Code 620.

Section 840.114 Groundwater Monitoring Program

The joint revisions remove redundant language and add language from Section 840.118 Demonstration of Compliance to clarify that the groundwater monitoring program for the closure and post-closure of Ash Pond D ends once compliance is achieved as measured at the property boundary in accordance with that section. The rule is drafted so that monitoring frequency may be gradually reduced over time unless there is a statistically significant increasing trend *that is*

² The attached proposed rulemaking language incorporates the Agency's August 18, 2009 proposed revisions and the parties agreed to revisions thereof. The Agency's August 18, 2009 proposed revisions are shown by single underlining and strikeout and the parties agreed to revisions are shown by double underlining and strikeout. For ease of reference a clean version is also enclosed.

attributable to Ash Pond D. Attribution of statistically significant trends to Ash Pond D is a concept that carries over to the compliance determinations under Section 840.118.

Reporting requirements generally have been moved to Section 840.144. Reporting requirements are intended to largely conform to current and ongoing reporting requirements under Hutsonville's existing NPDES permits, which require quarterly monitoring and submittal of data on an annual basis. The rule requires the owner or operator to perform an annual trend analysis of the data and report the results in the annual report. However, sampling and analysis results and any decision to remove a constituent from the monitoring program will be reported within 30 days after sampling and analysis have been completed. Copies of all reports and data will be submitted to the Bureau of Water which currently receives reports required under the Station's permit.

Section 840.116 Groundwater Quality Standards

In recognition of the historical operations at the site, the Agency has proposed, and Ameren agrees, that for the Ash Pond D site-specific rule and with respect to off-site groundwater quality, numeric Class I Groundwater Quality Standards will apply within the upper zone of the underlying aquifer and non-degradation standards will apply within the lower zone of the underlying aquifer. (If an off-site GMZ is established, alternative groundwater quality standards will be determined pursuant to 35 Ill. Adm. Code 620.450(a)(4).) With respect to on-site conditions, the applicable groundwater quality standards shall be the numerical value established through the monitoring program and related requirements. The addition of "numeric" in paragraph (a) of this Section is intended to clarify which groundwater standards apply to the upper zone of the underlying aquifer. Though implicit, the addition of "on-site" in paragraphs (a), (a)(1) and (a)(2) explicitly clarifies the application of this rule.

The institutional control language in subsection (a)(3) has been modified to acknowledge that instruments other than the uniform environmental covenant may be available by the time the corrective action is completed. If so, Ameren may propose the use of an alternative instrument if on-site contamination levels remain above Class I numeric standards. In addition, Ameren has on-site wells drawing both potable and process water from the lower zone of the underlying aquifer. These wells may remain as sources of potable water as long as the water remains fit for human consumption in accordance with accepted water supply principles. See 415 ILCS 5/3.340. Institutional controls are not required for non-potable wells. The revisions to subsection (b) also amend the language of this section to clarify that Ameren may propose and the Agency may approve a groundwater management zone not only in the closure and post-closure care plans, but also in a subsequent modification of those plans.

Section 840.118 Demonstration of Compliance

Following the various monitoring periods set forth in Section 840.114, Section 840.118(a)(2) provides that Ameren must demonstrate off-site compliance at the down-gradient property boundaries of the Hutsonville site with numeric Class I Groundwater Quality standards in the upper zone of the underlying aquifer and non-degradation standards in the lower zone of the underlying aquifer. Based on the information currently available from Ameren's Technical Support Document ("TSD"), one monitoring well (MW 14) indicates some diminishment of groundwater quality at that location in the lower zone of the underlying aquifer. However no existing or potential uses have been precluded at these concentrations. In this corrective action context, the Agency will consider compliance with the non-degradation standard achieved when Ameren demonstrates in accordance with Sections 840.118(a)(2)(A)(ii) and (iii) that there is no statistically significant increasing trend attributable to Ash Pond D and the actual concentrations

are at or below the concentrations reflected in sampling data provided in the TSD. Within the Hutsonville site itself, existing concentrations as determined by the monitoring program will apply. The Agency's proposed amendments added language to paragraph (a)(2)(B) to clarify that if a GMZ is established off-site, then the compliance points will be determined in accordance with procedures for establishing GMZs. *See* 35 Ill. Adm. Code 620.505.

The revisions to paragraph (a)(2)(A)(i) and (ii) are intended to take into account the differing applicable groundwater standards to the upper and lower zones of the underlying aquifer and the ability to demonstrate that there is either no increasing trend or a decreasing trend, as applicable. In demonstrating there is no increasing trend, it is implicit that no trend (steady-state conditions) also will suffice. The revisions to paragraph (b) of this Section remove redundant language and simply reference Sections 840.114 and 840.116(b) for the applicable groundwater quality standards, list of constituents to monitor, and monitoring frequency. The remaining revisions to this section simply ensure that the duty to investigate, notify the Agency, or take action to mitigate depends on the determination of a *statistically significant* increasing trend as required by paragraph (c) of Section 840.118. The participants removed paragraph (d) and incorporated the requirements into the recordkeeping and reporting provision, Section 840.144.

Section 840.120 Groundwater Collection Trench

The participants have revised this section to provide that following four consecutive years of annual monitoring which reflect compliance with applicable Class I Groundwater Quality Standards, Ameren may terminate operation of the trench provided that four quarters of additional confirmatory monitoring data show compliance with the applicable groundwater

standards. In addition, results from the confirmatory sampling must be included in the post-closure report.

Section 840.124 Final Slope and Stabilization

In the event Ameren chooses to use coal combustion waste as part of closure, the proposed revisions set the maximum final grade and slope at five percent. A five percent slope is consistent with prior Agency approvals with respect to the movement of ash for such purposes. If coal combustion waste is not used to establish the final grade and slope, then the slope only has to be designed to support vegetation, minimize erosion, drain runoff away from the cover and to prevent ponding. Under all circumstances, Ameren will perform a stabilization analysis as part of its closure engineering and design activities.

Section 840.130 Contents of Closure Plan

The proposed revisions to paragraph (o) of this Section are intended to ensure that the duty to mitigate depends on the determination of a *statistically significant* increasing trend as required by Section 840.118.

Section 840.134 Completion of Closure, Closure Report and Certification of Completion of Closure

The parties agreed to revisions to this section to allow for engineering and design activities to occur following enactment of this rule and for a time certain by which construction activities must conclude. The revisions also allow flexibility in the timeline subject to Agency approval.

Section 840.148 Review, Approval, and Modification of Closure Plan and Post-Closure Care Plan

The joint revisions to this section are intended to facilitate timely closure by allowing the owner or operator the authority to appeal to the Board in the event the Agency fails to issue a final determination within the applicable review period. This approach is consistent with

provisions for review of plans and reports in the Petroleum Underground Storage Tank rules and the Site Remediation Program. See 35 Ill. Adm. Code 732.306(a)(4)(B), 732.503(f), 734.450(a)(4)(B), 734.505(f), 740.505(h).

Section 840.152 Resource Conservation and Recovery Act

Reference to the Resource Conservation and Recovery Act ("RCRA") has been revised to make it clear that RCRA currently does not govern the closure of Ash Pond D, but that in the event future federal regulations are deemed to govern the closure of Ash Pond D, and such future requirements are more stringent than, or inconsistent with, the proposed rule, RCRA would govern. The previous version filed by the Agency was drafted as a platform from which the Agency might make final determinations. As revised, the section should be considered a "conflict of laws" provision providing guidance to the Board or the courts in the event an action concerning Ash Pond D comes before them in which a potential conflict with federal law is at issue.

While the United States Environmental Protection Agency ("USEPA") has indicated that it would promulgate federal rules pursuant to Subtitles C or D of RCRA governing the management of coal combustion waste, those rules are yet to be proposed, and the breadth and specifics of those rules are still largely unknown. Furthermore, the extent to which any such rules would be retroactively applied is unknown. Therefore, it is possible a conflict of laws provision would not be needed, but its presence would not be disruptive to the operation of the rules. Once USEPA adopts final regulations, state waste management provisions would need to be revised to conform to those requirements. If necessary, Subpart A would be amended to incorporate any additional requirements as appropriate. In addition to its function as a conflict of laws provision, the value to the Agency is the potential use of the provision as the basis for an

argument that it is unnecessary to amend potentially inconsistent rules prior to submitting an application to the USEPA for delegation, authorization or approval of state coal combustion waste management rules.

Conclusion

As stated above, Ameren and the Agency have reached agreement on a site-specific proposal for the closure of Ash Pond D at the Hutsonville Power Station. The key elements include the hydrogeologic site investigation, the groundwater monitoring system and protocols, corrective action measures including a final cover system for Ash Pond D and the groundwater collection trench and discharge system, and on-site and off-site groundwater quality standards that are based on or reference the Board's requirements for groundwater quality at 35 Ill. Adm. Code 620. These key provisions are supported by provisions for direct oversight by the Agency, the submission of plans, reports and monitoring results for review by the Agency, expanded construction quality assurance requirements, and procedural requirements for reviews leading to final determinations by the Agency.

Based on information and modeling presented by Ameren in its Technical Support Document, the off-site contamination plume will, over time, return to compliance with Board standards, and on-site contamination concentrations will return to compliance or be substantially reduced. Therefore, the parties believe the agreed proposal will be protective of human health and the environment as well as existing on-site uses of groundwater and existing and potential off-site uses of groundwater.

For Ameren, the enactment of this rule is of the utmost importance, as it has been seeking regulatory certainty with respect to closure of Ash Pond D since around 2001. The conceptual

framework set forth herein will assist Ameren as it develops future closure plans to conform with the regulatory requirements embodied in this rule and ultimately adopted by the Board.

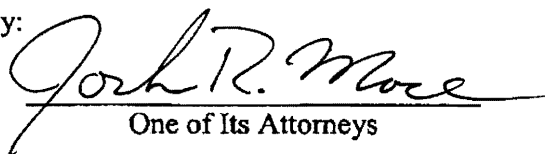
WHEREFORE, for the foregoing reasons, Ameren and the Agency state their joint support for the proposed rulemaking language for the site-specific closure of Ash Pond D at the Hutsonville Power Station as set forth and attached below.

Respectfully submitted,

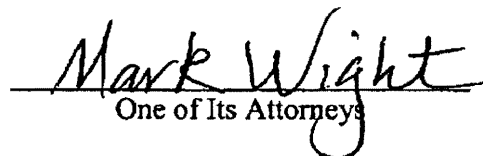
AMEREN ENERGY GENERATING
COMPANY,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By:


One of Its Attorneys

By:


One of Its Attorneys

Dated: September 22, 2009

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Proposed Rule With Agreed To Changes

The attached agreed to proposed rulemaking language incorporates the Agency's August 18, 2009 proposed revisions and the parties agreed to revisions thereof. The Agency's August 18, 2009 proposed revisions are shown by single underlining and strikeout and the parties agreed to revisions are shown by double underlining and strikeout.

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TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER j: COAL COMBUSTION WASTE SURFACE IMPOUNDMENTS

PART 840

SITE-SPECIFIC CLOSURES OF COAL COMBUSTION WASTE SURFACE
IMPOUNDMENTS

SUBPART A: CLOSURE OF ASH POND D, HUTSONVILLE POWER STATION

Section

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840.104	Definitions
840.106	Abbreviations and Acronyms
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<u>840.148</u>	<u>Review, Approval and Modification of Closure Plan and Post-Closure Care Plan</u>
<u>840.150</u>	<u>Review and Approval of Closure Report and Certification of Completion of</u> <u>Closure, Post-Closure Report and Certification of Completion of Post-Closure</u> <u>Care Plan</u>
<u>840.152</u>	<u>Resource Conservation and Recovery Act</u>

AUTHORITY: Implementing Section 22 of the Environmental Protection Act (415 ILCS 5/22) and Section 8 of the Illinois Groundwater Protection Act (415 ILCS 55/8), and authorized by Sections 22, 27, and 28 of the Environmental Protection Act (415 ILCS 51/22, 27, and 28) and Section 8 of the Illinois Groundwater Protection Act (415 ILCS 55/8).

SOURCE: Adopted in R09- _____ at _____ Ill. Reg., effective _____, 2009.

SUBPART A: CLOSURE OF ASH POND D, HUTSONVILLE POWER STATION

Section 840.100 Purpose

This Subpart provides for the closure of Ash Pond D located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

Section 840.102 Applicability

This Subpart exclusively applies to the closure and post-closure care of Ash Pond D, located at the Hutsonville Power Station. ~~and particularly, no other Part of Subtitle G applies to the closure of Ash Pond D.~~

Section 840.104 Definitions

Unless otherwise specified, the definitions of the Environmental Protection Act ("Act") [415 ILCS 5] apply to this Subpart. 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)]

"Ash Pond D" means the surface impoundment designated as Ash Pond D, located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford

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County, Illinois.

"Board" means the Illinois Pollution Control Board.

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

"Hutsonville Power Station" or "Hutsonville site" means the electric generating station located at 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

"Lower zone of underlying aquifer" means the sands and gravels beneath the fine-grained surficial alluvium within the Wabash River bedrock valley.

"On-site" means the same or geographically contiguous property constituting the Hutsonville Power Station.

"Off-site" means any property that is not part of the Hutsonville Power Station.

"Operator" means the person responsible for the operation of Ash Pond D.

"Owner" means the person who owns Ash Pond D.

"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]

"Professional engineer" means a person who has registered and obtained a seal pursuant to the Professional Engineering Practice Act of 1989. [225 ILCS 325]

"Professional geologist" means a person licensed under the laws of the State of Illinois to practice as a professional geologist. [415 ILCS 5/58.2]

"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 this act or regulations thereunder. [415 ILCS 5/3.460]

"Statistically significant" means the application of a Mann-Kendall analysis performed at 95 percent confidence to determine whether consecutive groundwater sampling data

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showing greater or lesser concentrations of constituents is statistically significant.

~~"Surface impoundment" means for purposes of this Subpart a natural topographic depression, a man-made excavation, or a diked area used to retain coal combustion wastes and free liquids that was designed and constructed prior to 1990 and currently operates under or has been subject to a water pollution control permit issued by the Agency. For purposes of this Subpart, a surface impoundment that contains coal combustion waste is not a landfill.~~

"Upper zone of underlying aquifer" means surficial sands and sandstones overlying shale west of the Wabash River bedrock valley, and sand lenses within the surficial fine-grained alluvium.

~~"Zone A" means for purposes of this Subpart the three dimensional region of groundwater that has been impacted by Ash Pond D bounded by a vertical plane 25 feet from the outside edge of the bermed area surrounding Ash Pond D to the south, north, east, and west and extending to the base of the uppermost aquifer.~~

~~"Zone B" means the three dimensional region of the uppermost aquifer outside Zone A the three dimensional region of the uppermost aquifer outside Zone A and located 500 feet South of the Hutsonville Power Station boundary, in the North Half of Section 20, Township 8 North, Range 11 West of the Second Principal Meridian, Crawford County, Illinois, lying East of Township Road 254A which extends in a Northwesterly direction across said Section 20; the area located 500 feet South of the Hutsonville Generation Plant boundary, in the North half of Section 21, Township 8 North, Range 11 West of the Second Principal Meridian, Crawford County, Illinois, lying West of the Wabash River; and the area located within the Hutsonville Power Station, North of the southern Hutsonville Power Station boundary, in the South Half of Section 17, Township 8 North, Range 11 West of the Second Principal Meridian, Crawford County, Illinois, lying West of the Wabash River and extending from the river towards Ash Pond D 2,040 feet, turning North and extending 940 feet towards the Wabash River, and turning Southeasterly and extending 2,200 feet to the point of origin.~~

Section 840.106 Abbreviations and Acronyms

Agency	Illinois Environmental Protection Agency
CQA	Construction Quality Assurance
<u>GMZ</u>	<u>Groundwater Management Zone</u>
Mg/L	milligrams per liter

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NPDES National Pollutant Discharge Elimination System
TDS total dissolved solids

Section 840.108 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 on-
line 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>).

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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).

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

Section 840.~~110~~ 108 Hydrogeologic Site Investigation

The owner or operator of Ash Pond D must design and implement a hydrogeologic site investigation, ~~approved by the Agency in the closure plan,~~ of Ash Pond D to determine the nature and extent of contamination originating from Ash Pond D and to develop hydrogeologic information for the uses set forth below. If approved in the closure plan, any information from any hydrogeologic site investigation performed since 1999 may be used to satisfy the requirements of this Section. The uses of the hydrogeologic site investigation shall include, but not be limited to:

- a) Providing ~~To provide~~ information to define hydrogeology and to assess the groundwater impacts associated with Ash Pond D;
- b) Providing ~~To provide~~ information to perform a model to assess the groundwater impacts associated with closure of Ash Pond D; and
- c) Providing ~~To provide~~ information to establish a groundwater monitoring system.

Section 840.~~112~~ 110 Groundwater Monitoring System

The owner or operator of Ash Pond D must design and install a groundwater monitoring system, ~~approved by the Agency in the closure plan,~~ that enables it to monitor groundwater to evaluate post-closure groundwater quality and trends and to demonstrate compliance with the applicable groundwater quality standards at designated compliance points as set forth in Sections 840.116 and 840.118 of this Subpart. ~~If approved in the closure plan, any~~ Any groundwater monitoring well system in operation since 1999 that complies with the requirements ~~standards~~ set forth in this Section may be used in satisfying to satisfy in part the requirements of this Section.

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- a) 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 the specified ~~desired~~ 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.
- b) The groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield groundwater samples that to:
 - 1) Represent the quality of background water that has not been affected by contamination from Ash Pond D; and
 - 2) Represent the quality of groundwater at the compliance point or points; and
 - 3) Determine compliance with Sections 840.116 and 840.118 of this Subpart.
- ~~b) Standards for the location of monitoring points.~~
 - ~~1) A network of no fewer than three monitoring points must be established at locations downgradient of Ash Pond D with respect to groundwater flow.~~
- ~~c2)~~ Monitoring wells must be located in stratigraphic horizons that could serve as contaminant pathways.
- ~~c) Standards for sample collection and analysis.~~
 - ~~1) The owner or operator of Ash Pond D must utilize sampling and analysis procedures that ensure that collected samples are representative of the zone being monitored and that the results can be relied upon to provide data representative of the zone being monitored.~~
 - ~~2) The owner or operator of Ash Pond D must establish a quality~~

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~~assurance program.~~

- d) The groundwater monitoring system approved in the closure plan must include a maintenance plan.

Section 840.114 ~~112~~ Groundwater Monitoring Program

The owner or operator of Ash Pond D must develop a groundwater monitoring program that enables it to monitor groundwater to evaluate post-closure groundwater quality both on-site and off-site to demonstrate compliance with Sections 840.116 and 840.118 of this Subpart. The owner or operator must begin the groundwater monitoring program upon completion of the installation of the groundwater monitoring system in accordance with Section 840.112 and the approved closure plan. ~~of the final cover system installation.~~ The groundwater monitoring program must comply with following requirements:

- a) The owner or operator of Ash Pond D must monitor each well included in the groundwater monitoring system installed pursuant to Section 840.112 ~~110 for the following constituents~~ on a quarterly basis beginning upon completion of the installation of the groundwater monitoring system and continuing for the first five years after approval of the closure plan. ~~constituents identified in 35 Ill. Adm. Code 620.410(a) and (d) except radium-226 and radium-228. Any constituent that is not detectable non-detect in the down-gradient wells for four consecutive quarters or has a concentration that is not statistically greater than the concentration detected in the up-gradient wells for four consecutive quarters may be removed dropped from the monitoring program in both the up-gradient and down-gradient wells with the exception of boron, iron, manganese, pH, sulfate, and TDS. The owner or operator must also monitor for the following:~~
- b~~1~~) After Five five years after approval of the closure plan, the owner or operator of Ash Pond D may request modification of the post-closure care plan to reduce the frequency of groundwater monitoring to semi-annual sampling by demonstrating upon a determination of all of the following:
- 1A) That monitoring effectiveness will not be compromised by the reduced frequency of monitoring;
- 2B) That sufficient ~~quarterly~~ data has been collected to characterize groundwater; and

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- 3C) That concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site monitoring wells inside Zone B show no statistically significant increasing trends that can be attributed to Ash Pond D.
- c2) ~~Beginning fifteen years after closure, or five years after reducing the monitoring frequency to semi-annual pursuant to subsection (a)(1) of this Section~~ If and concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site monitoring wells inside Zone B show no statistically significant increasing trends that can be attributed to Ash Pond D for the five years after reducing the monitoring frequency to semi-annual, the owner or operator of Ash Pond D may request modification of the post-closure care plan to reduce monitoring frequency to annual sampling by demonstrating all of the factors set forth in subsections (b)(1) through (b)(3) of this Section.
- ~~3)~~ ~~The owner or operator of Ash Pond D may discontinue groundwater monitoring for the constituents in subsection (a) of this Section when no statistically-significant increasing trend that can be attributed to Pond D is detected in the concentration of any such constituent at the down-gradient monitoring wells inside Zone B for three consecutive years after changing to an annual monitoring frequency pursuant to subsection (a)(2) of this Section and all concentrations of constituents monitored in accordance with Section 840.112 are at or below Class I groundwater quality standards for a period of five years.~~
- d) The owner or operator of Ash Pond D may discontinue groundwater monitoring upon Agency approval of the certified post-closure care report as required by Section 840.142.
- e) Sampling and analysis data from groundwater monitoring and decisions to remove ~~drop~~ any constituent from the monitoring program must be reported to the Agency no later than 30 days after the sampling and analysis have been completed as provided in Section 840.144(a) of this Subpart.
- ef) 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 as incorporated by

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reference at Section 840.108 of this Subpart or other procedures approved by the Agency in the closure plan or post-closure care 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";
- 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."

~~fg)~~ The owner or operator of Ash Pond D must establish a groundwater monitoring quality assurance program for sample collection, preservation and analysis.

~~b) The owner or operator of Ash Pond D must monitor each well installed pursuant to Section 840.110 for the following inorganic constituents on an annual basis until monitoring pursuant to subsection (a) of this Section is discontinued in accordance with Section 840.112(a)(3): antimony, arsenic, barium, beryllium, cadmium, chloride, chromium, cobalt, copper, cyanide, fluoride, lead, mercury, nickel, nitrate as N, selenium, silver, thallium, and zinc.~~

- ~~1) Monitoring of inorganic constituents must be performed during the first quarter of each monitoring year as the monitoring year is defined in the closure plan.~~

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- 2) — ~~Any inorganic constituent listed in this subsection observed to exceed its Class I groundwater quality standard must be monitored on a quarterly basis. After four consecutive quarterly samples show no exceedance of the Class I groundwater quality standard for such constituent, the owner or operator of Ash Pond D may reduce the monitoring frequency of that constituent to annual sampling.~~
- e) — ~~Elements of the Groundwater Monitoring Program may be modified upon agreement with the Agency, so long as the modification is in accordance with the provisions of this Subpart.~~

Section 840.116 114 Groundwater Quality Standards Compliance Zones

- a) On-site, ~~Prior~~ to the completion of the post-closure care period, the applicable groundwater quality standards at the Hutsonville site for concentrations of contaminants from Ash Pond D are ~~shall be~~ the concentrations as determined by groundwater monitoring, if such concentrations exceed the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410. After completion of the post-closure care period, the on-site concentrations of contaminants from Ash Pond D as determined by groundwater monitoring, if such concentrations exceed the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410, are ~~shall be~~ the applicable groundwater standards at the Hutsonville site if:
- 1) To the extent practicable, the exceedance has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned on-site;
- 2) Any threat to ~~human~~ public health or the environment on-site has been minimized; and
- 3) An institutional control prohibiting potable uses of groundwater is placed on the Hutsonville site in accordance with the Uniform Environmental Covenants Act (765 ILCS 122) or an alternative instrument authorized for environmental uses under Illinois law and approved by the Agency. Existing potable uses of groundwater may be preserved as long as such uses remain fit for human consumption in accordance with accepted water supply principles.

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~~No generally applicable groundwater quality standards apply within Zone A or Zone B. Within Zone A and Zone B, from the effective date of this rule and continuing indefinitely thereafter, concentrations of constituents may exceed any generally applicable groundwater quality standard established by the Board or the Agency, including the Class I groundwater quality standards, as set forth in 35 Ill. Adm. Code 620.~~

- b) Off-site, the applicable groundwater quality standards for are the numeric standards for Class I: Potable Resource Groundwater are as set forth in 35 Ill. Adm. Code 620.401 (e.g., numerical standards of set forth in 35 Ill. Adm. Code 620.410 in the upper zone of the underlying aquifer; and the nondegradation standard of 35 Ill. Adm. Code 620.Subpart C in the lower zone of the underlying aquifer), unless a groundwater management zone (GMZ) has been established as provided in 35 Ill. Adm. Code 620.250 with the written permission of the affected property owner(s) for for off-site property or properties with groundwater contamination from Ash Pond D so that monitoring wells may be installed and such other corrective actions designed and implemented as necessary to achieve compliance with 35 Ill. Adm. Code 620.
- 1) A GMZ for off-site properties with groundwater contamination from Ash Pond D and any related design and construction activities must be proposed and approved in the closure plan or post-closure care plan or any modification thereof, as appropriate.
- 2) Groundwater quality standards for an off-site GMZ are set forth at 35 Ill. Adm. Code 620.450(a)(4).
- b) ~~As provided in Section 840.116 of this Part, the results of annual trend analysis will be used to determine compliance within Zone B.~~

Section 840.118 116 Demonstration of Compliance

- a) Compliance with the on-site and off-site groundwater quality standards set forth in Sections 840.116(a) and (b) of this SubpPart:
- 1) Compliance with on-site groundwater quality standards will be achieved when no statistically significant increasing trend that can be attributed to Ash Pond D is detected in the concentrations of all constituents monitored in accordance with Section 840.114 of this Part at the down-gradient

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boundaries of the Hutsonville site for four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c) of this SubpPart.

2) Compliance with off-site groundwater quality standards:

A) Compliance with off-site groundwater quality standards set forth in Section 840.116(b) of this Part will be achieved when:

i) A statistically significant decreasing trend in concentrations of constituents monitored in accordance with Section 840.114 of this SubpPart in the upper zone of the underlying aquifer at the down-gradient boundaries of the Hutsonville site is detected in the concentrations of all constituents monitored for a period of four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c) of this SubpPart; and

ii) No statistically significant increasing trend that can be attributed to Ash Pond D is detected in concentrations of constituents monitored in accordance with Section 840.114 of this Subpart in the lower zone of the underlying aquifer at the down-gradient boundaries of the Hutsonville site for four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c) of this Subpart; and

iii) All concentrations of constituents monitored in accordance with Section 840.114 of this SubpPart are at or below the applicable groundwater quality standards as provided in Section 840.116(b) of this SubpPart at the down-gradient boundaries of the Hutsonville site.

B) If a groundwater management zone for off-site properties with groundwater contamination from Ash Pond D is established as provided in Section 840.116(b) of this SubpPart, the compliance points will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.

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- 3) ~~A Mann-Kendall analysis must be performed at 95-percent confidence to determine whether the increasing or decreasing trend is statistically significant.~~

The owner or operator of Ash Pond D must establish and identify in the closure plan and post-closure care plan no fewer than three down-gradient monitoring wells located within Zone B for determining groundwater quality.

- b) For purposes of demonstrating compliance: Compliance must be demonstrated as follows:

- 1) ~~To demonstrate compliance with the on-site groundwater quality standards and subsection (a)(1) of this Section, the~~ The owner or operator of Ash Pond D must perform an annual trend analysis for each monitoring well located at the down-gradient boundaries of the Hutsonville site in Zone B for all constituents monitored in accordance with Section 840.114112(a) of this Subpart and for all constituents monitored in accordance with Section 840.112(b) ~~that are above Class I groundwater quality standards as provided in 35 Ill. Adm. Code 620.410~~, based on a minimum of four consecutive samples, by applying Sen's Estimate of Slope. If the results show an increasing trend, a Mann-Kendall analysis must be performed at 95-percent confidence to determine whether the increasing trend is statistically significant.

- 2) ~~To demonstrate compliance with the off-site groundwater quality standards and subsection (a)(2) of this Section:~~

~~A) The owner or operator of Ash Pond D must perform an annual trend analysis for each monitoring well located at the down-gradient boundaries of the Hutsonville site for all constituents monitored in accordance with Section 840.114 of this Part that are above Class I groundwater quality standards as provided in 35 Ill. Adm. Code 620.401 (e.g., numerical standards of 35 Ill. Adm. Code 620.410 in upper zone of underlying aquifer; nondegradation standard of 35 Ill. Adm. Code 620. Subpart C in lower zone of underlying aquifer) based on a minimum of four consecutive samples, by applying Sen's Estimate of Slope; and~~

~~B) Sampling and analysis results for each monitoring well located at~~

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~~the down-gradient boundaries of the Hutsonville site for all constituents monitored in accordance with Section 840.114 of this Part must achieve the applicable groundwater quality standards as provided in 35 Ill. Adm. Code 620.401 (e.g., numerical standards of 35 Ill. Adm. Code 620.410 in upper zone of underlying aquifer; nondegradation standard of 35 Ill. Adm. Code 620. Subpart C in lower zone of underlying aquifer) at the down-gradient boundaries of the Hutsonville site.~~

~~C) —~~ If a groundwater management zone for off-site properties with groundwater contamination from Ash Pond D is established as provided in Section 840.116(b) of this Subpart, the demonstration of compliance will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.

c) Compliance with nondegradation standards during closure and post-closure care periods:

1) If the results of sampling and analysis show an increasing trend at any monitoring well located at the down-gradient boundaries of the Hutsonville site, a Mann-Kendall analysis must be performed at 95 percent confidence to determine whether the increasing trend is statistically significant. The owner or operator of Ash Pond D must investigate the cause of a statistically significant increasing trend as determined under subsection (b) of this Section. If the statistically significant increasing trend occurs during post-closure care, such investigation must include more frequent inspection of the surface of the cover system and evaluation of background concentrations and the effectiveness of the groundwater collection trench required by Section 840.120118 of this Subpart.

A1) If an investigation performed in accordance with subsection (c)(1) of this Section attributes a statistically significant increasing trend to a superseding cause, the owner or operator of Ash Pond D must notify the Agency in writing, stating the cause of the increasing trend and providing the rationale used in such a determination.

B2) If there is no superseding cause for the statistically significant

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increasing trend and sampling frequency has been reduced pursuant to Sections 840.114(b) or (c) 840.112(a)(1) or (a)(2) of this Subpart to semiannual or annual sampling, the owner or operator must return to a quarterly sampling schedule. After four consecutive quarterly samples show no statistically significant increasing trend, the frequency of groundwater monitoring may be returned to either semi-annual or annual, whichever frequency was utilized prior to the return to quarterly sampling.

- C) For purposes of this subsection (c)(1), notifications concerning statistically significant increasing trends and revisions of the sampling frequency must be reported to the Agency in writing within 30 days after making the determinations as provided in Section 840.144(f) of this SubPart.

- 2d) If a statistically significant increasing trend is observed to continue over a period of two or more consecutive years and there are no superseding causes for the trend, the owner or operator must perform the following:

A1) A hydrogeologic investigation; and

2) ~~An investigation to determine there are no exceedences of Class I standards attributable to Ash Pond D at the outer edge of Zone B; and~~

B3) Additional site investigation, if necessary.

- 3e) Based on the outcome of the activities required by subsection (c)(2) (d) of this Section, the owner or operator of Ash Pond D must take action to mitigate statistically significant increasing trends ~~exceedences that are causing, threatening or allowing exceedences of off-site groundwater quality standards as set forth in Section 840.116(b)(2), occurring at the outer edge of Zone B.~~ Such actions must be proposed as a modification to the post-closure care plan within 180 days after completion of the activities required by subsection (c)(2) of this Section.

- ~~d) In accordance with Section 840.144 of this Part, the The owner or operator of Ash Pond D must submit an annual report to the Agency with the results of the trend analysis required by subsection (b) of this Section and supporting data. The~~

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~~annual report must include a discussion of any statistically significant increasing trends, actions taken to mitigate increasing trends in accordance with subsection (c)(3) of this Section, within Zone B and a copy of any notice submitted to the Agency pursuant to subsection (c)(1)(A) of this Section.~~

Section 840.120 118 Groundwater Collection Trench

The owner or operator of Ash Pond D must design, install, and, consistent with any applicable wastewater discharge permit conditions, operate a groundwater collection trench along the south property boundary of the Hutsonville Power Station to prevent migration of groundwater impacted by Ash Pond D south of the property boundary. Plans for the groundwater collection trench including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan. The groundwater collection trench must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart. Once compliance with the groundwater quality standards as set forth in Section 840.116 has been achieved in accordance with Section 840.118(a) Upon approval by the Agency completion of the post-closure care certification required by Section 840.142140 of this Subpart, the owner or operator of Ash Pond D may discontinue operation of the groundwater collection trench. Upon discontinuing operation of the groundwater collection trench, the owner or operator must perform four quarterly sampling of the groundwater monitoring system wells as identified in the post-closure care plan, or modification thereof, to ensure compliance with the applicable groundwater quality standards set forth in Section 840.116. Results of the four quarterly sampling must be included in the post-closure report documentation. If compliance is not confirmed, operation of the groundwater collection trench and discharge system must be resumed.

Section 840.122 120 Groundwater Discharge System

Groundwater collected in the groundwater collection trench must be directed to an outfall for which the Hutsonville Power Station has NPDES authorization or to another option as approved by the Agency in the closure plan or post-closure care plan. Ash Pond B at the Hutsonville Power Station consistent with wastewater discharge permit conditions. Groundwater collected must be routed through the outfall from Ash Pond B as authorized by the Hutsonville Power Station's NPDES permit in compliance with applicable water quality standards for the Wabash River. 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 closure plan. The groundwater discharge system collection trench must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart.

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Section 840.~~124~~ 122 Final Slope and Stabilization

- a) All final slopes must be designed and constructed to 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.
- c) Ash Pond D must meet the stability criteria of 35 Ill. Adm. Code 811.304. ~~The owner or operator may use coal combustion waste generated at the site in establishing the final grade and slope. Any coal combustion waste used to establish the final grade and slope is considered coal combustion byproduct, and its use does not require any independent approval pursuant to 415 ILCS 5/3.135.~~
- 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 Ash Pond D must be regraded to eliminate any freeboard between the top of the berm and the adjacent surface of the coal combustion waste;
 - 2) Additional coal combustion waste only may be placed directly on top of coal combustion waste that is already in place;
 - 3) The maximum final slope must be no greater than ~~three (3)~~ five (5) percent;
 - 4) Any additional coal combustion waste used to establish the final grade and slope is considered coal combustion by-product, and its use does not require any independent approval pursuant to Section 3.135 of the Act (415 ILCS 5/3.135).

Section 840.~~126~~ 124 Final Cover System

The owner or operator of Ash Pond D must design and install a final cover system for Ash Pond D. The final cover system must consist of a low permeability layer and a final protective layer.

- a) Standards for the low permeability layer. The low permeability layer must be designed to minimize surface infiltration and must consist of a geosynthetic

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membrane cover and be constructed in accordance with the following standards:

- 1) 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 three (3) foot layer of soil with a hydraulic conductivity of 1×10^{-7} centimeters per second. ~~or less.~~
 - 2) The geosynthetic membrane must be placed over a prepared base free from sharp objects and other materials that may cause damage.
- b) Standards for the final protective layer.
- 1) The final protective layer must cover the entire geosynthetic membrane.
 - 2) The final protective layer must be at least three feet thick and must be sufficient to protect the geosynthetic membrane from freezing and minimize root penetration of the geosynthetic membrane.
 - 3) The final protective layer must consist of soil material capable of supporting vegetation.
 - 4) The final protective layer must be placed as soon as possible after placement of the geosynthetic membrane.
 - 5) The final protective layer must be covered with vegetation to minimize wind and water erosion.
- c) Construction Quality Assurance Program. The final cover system must be constructed according to a construction quality assurance program that meets the following requirements of Section 840.146 of this Subpart. ÷
- 1) ~~The operator must designate a construction quality assurance ("CQA") officer.~~
 - 2) ~~At the end of each week of construction of the final cover system until construction is complete, a summary report must be either prepared by the CQA officer or under the supervision of the CQA officer. The report must include descriptions of the weather, locations where construction occurred~~

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~~during the previous week, materials used, results of testing, inspection reports, and procedures used to perform the inspections. The CQA officer must certify the report.~~

~~3) The CQA officer must exercise judgment to certify the following:~~

~~A) That the bedding material contains no undesirable objects;~~

~~B) That the closure plan has been followed;~~

~~C) That the anchor trench and backfill are constructed to prevent damage to the geosynthetic membrane;~~

~~D) That all tears, rips, punctures, and other damage are repaired; and~~

~~E) That all geosynthetic membrane seams are properly constructed and tested in accordance with manufacturer's specifications.~~

Section 840.128 126 Closure Plan

- a) Within 180 days after the effective date of this rule, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure plan for review and approval.
- b) The owner or operator of Ash Pond D must maintain the closure plan onsite or at a location specified in the closure plan.

Section 840.130 128 Contents of Closure Plan

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

- a) Site map. The site map must identify all pertinent features and buildings at the Hutsonville Power Station and must clearly identify the following:
 - 1) All of the surface impoundments located at the site;
 - 2) All existing and proposed groundwater collection trenches associated

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with the operation or closure of Ash Pond D; and

- 3) All existing and proposed groundwater monitoring wells. ~~;~~ and
- 4) ~~Diagrams depicting Zone A and Zone B.~~
- b) Description of Ash Pond D. The description of Ash Pond D must include all of the following information:
 - 1) A description of the contents of Ash Pond D;
 - 2) The estimated volume of material contained in Ash Pond D; and
 - 3) An analysis of the structural integrity of Ash Pond D.
- c) Description of the closure activities to be performed in accordance with this Subpart and any additional activities performed by the owner or operator to close Ash Pond D, including any dewatering.
- d) Description and results of the hydrogeologic site investigation required by Section 840.~~110~~108 of this Subpart.
- e) Description of the groundwater trend analysis methods as required by Section 840.~~118~~116 of this Subpart.
- f) Plans, specifications and drawings for ~~Description of~~ the groundwater monitoring system required by Section 840.~~112~~110 of this Subpart.
- g) Description of the groundwater monitoring program required by Section 840.~~114~~112 of this Subpart including, but not limited to, a description of the quality assurance program for sample collection, preservation and analysis.
- h) Identification of the location of the monitoring wells used for trend analyses required by Section 840.~~118~~116 of this Subpart.
- i) Plans, specifications and drawings for the groundwater collection trench and discharge system set forth in Sections 840.120 and 840.122.

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- j) Plans, specifications and drawings for the final slope design and construction and demonstration of compliance with the stability criteria required in Section 840.124.
- ki) Plans, specifications and drawings for ~~Description of~~ the final cover system required by Section 840.126124 of this Subpart.
- lj) Estimates of the amount of time to complete closure, ~~including an estimate of the time required for hydrostatic equilibrium of groundwater beneath Ash Pond D,~~ the cost of closure, and the cost of post-closure care.
- m) A proposal for a groundwater management zone as set forth in Section 840.116(b) of this SubpPart, if applicable, and including, but not limited to, plans, specifications and drawings for any structures or devices that must be constructed.
- n) Description of the Construction Quality Assurance program required by Section 840.146 of this SubpPart including, but not limited to, the sampling programs required by Section 840.146(b)(7) of this SubpPart.
- o) Description of actions proposed to mitigate statistically significant increasing trends in accordance with Section 840.118(c) of this SubpPart, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that must be constructed.
- p) The signature and seal of the professional engineer supervising the preparation of the closure plan.

Section 840.132 130 Modification of Existing Permits

Within ~~six months~~ 180 days of the effective date of this Subpart A, the The owner or operator of Ash Pond D must timely submit to the Agency an application to revise any state operating permit or NPDES permit issued by the Agency as required by Sections ~~Section~~ 840.120118 and 840.122 of this Subpart, if necessary.

Section 840.134 132 Completion of Closure, Closure Report and Certification of Completion of Closure

- a) The owner or operator must complete engineering and design activities for the ~~complete~~ closure of Ash Pond D within 180 days after the effective date of this

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~~rule, eighteen months after the Agency's approval of the closure plan.~~

- b) The owner or operator must complete closure of Ash Pond D within 18 months after the Agency's approval of the closure plan, unless the Agency approves an alternative timeline.
- ~~cb)~~ No later than 90 days after the completion of all closure activities required by this Subpart and approved in the closure plan, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure report for review and approval. The report must include certification by a professional engineer that Ash Pond D has been closed in accordance with the approved closure plan required by Section 840.128~~126~~ of this Part and the requirements of this Subpart. The report also must contain supporting documentation including, but not limited to: and include all CQA reports required by Section 840.124(e)(2).
- 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 840.146 of this Subpart;
- 2) Photographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities;
- 3) A written summary of closure requirements and activities as set forth in the closure plan and this Subpart A;
- 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, the preparation of the closure report, and making the certification of completion of closure.

Section 840.136 ~~134~~ Post-Closure Maintenance of Cover System

The owner or operator of Ash Pond D 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

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operator of Ash Pond D must conduct ~~annual~~ inspections of the cover system at the same time and frequency as the groundwater monitoring sampling schedule set forth in Section 840.114 of this Subpart.

- b) The owner or operator of Ash Pond D must fill all rills, gullies, and crevices six inches or deeper ~~identified during the inspection.~~ Areas identified as particularly susceptible to erosion must be recontoured.
- c) The owner or operator of Ash Pond D must repair all eroded and scoured drainage channels ~~identified during inspections~~ and replace lining material, if necessary.
- d) The owner or operator of Ash Pond D must fill and recontour all holes and depressions created by settling so as to prevent standing water.
- e) The owner or operator of Ash Pond D must revegetate all areas in excess of 100 square feet, cumulative, with failed or eroded vegetation. ~~that had previously been vegetated.~~
- f) The owner or operator of Ash Pond D must repair all tears, rips, punctures, and other damage to the geosynthetic membrane. ~~, if necessary.~~
- g) The owner or operator must prevent the growth of woody species on the protective cover.

Section 840.~~138~~ 136 Post-Closure Care Plan

- a) Within 180 days after the effective date of this Subpart A, the ~~The~~ owner or operator of Ash Pond D must prepare and submit to the Agency a post-closure care plan for review and approval.
- b) The owner or operator must maintain the post-closure care plan onsite or at a location specified in the post-closure care plan.

Section 840.~~140~~ 138 Contents of Post-Closure Care Plan

The post-closure care plan, or modification thereof, must include, at a minimum, the following elements:

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- a) Description of the post-closure care activities required by Section 840.136~~134~~ of this Subpart;
- b) Description of the groundwater monitoring system required by Section 840.112~~110~~ of the Subpart and a description of the maintenance plan for the groundwater monitoring system;
- c) Description of the groundwater monitoring program required by Section 840.114~~112~~ of this Subpart;
- d) Identification of the location of the monitoring wells used for trend analyses required by Section 840.118~~116~~ of this Subpart; and
- e) Description of the operation and maintenance that will be required for the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this SubpPart; A copy of the certification of closure required by Section 840.132 of this Subpart.
- f) Description of the groundwater trend analysis methods as required by Section 840.118 of this Subpart;
- g) A proposal for a groundwater management zone as set forth in Section 840.116(b) of this Part, if applicable;
- h) Description of actions proposed to mitigate statistically significant increasing trends in accordance with Section 840.118(c) of this SubpPart, if applicable, and the operation and maintenance of any structures or devices; and
- i) The signature and seal of the professional engineer supervising the preparation of the post-closure care plan.

Section 840.142~~140~~ Post-Closure Report and Certification of Completion of Post-Closure Care Plan

Post-closure care must continue until a demonstration of compliance with the groundwater quality standards as set forth in Section 840.116 has been approved by the Agency. The owner or operator of Ash Pond D must prepare and submit to the Agency for review and approval a post-closure report within 60 days after satisfying the requirements of the approved post-closure care plan and achieving the applicable groundwater quality standards as set forth in the plan and

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Sections 840.116 through 840.118 of this Part. Sections 840.134 and 840.112(a)(3) of this Subpart. The post-closure report must include a certification(s) by a professional engineer or professional geologist that the standards and requirements set forth in this Subpart A and approved in the post-closure care plan of Section 840.134 and Section 840.112(a)(3) of this Subpart have been met. A professional geologist may supervise post-closure care activities as appropriate under the Professional Geologist Licensing Act (225 ILCS 745). The report also must contain supporting documentation including, but not limited to:

- a) Engineering and hydrogeology reports including, but not limited to, documentation of compliance with the groundwater quality standards of this Subpart A and results of the four quarterly sampling performed under Section 840.120 of this Subpart;
- b) Photographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities;
- c) A written summary of post-closure care requirements and activities as set forth in the post-closure care plan and this Subpart A and their completion;
- d) Any other information relied upon by the professional engineer or professional geologist, as appropriate for the activity, in making the post-closure care certification(s); and
- e) The signature and seal of the professional engineer and professional geologist supervising the implementation of the post-closure care plan, and the signature and seal of the professional engineer supervising preparation of the post-closure report and making the certification of completion of the post-closure care plan.

Section 840.~~144~~ 142 Recordkeeping and Reporting Requirements

- a) ~~The owner or operator of Ash Pond D must file groundwater monitoring data electronically with the Agency each year during the closure of Ash Pond D and for the entire post-closure care period. The owner or operator must submit sampling data no later than 30 days after the end of the sampling period.~~
- ab) The owner or operator of Ash Pond D must file an annual report with the Agency no later than January 31 of each year during the closure of Ash Pond D and for the entire post-closure care period. Once the requirements of Section 840.~~142~~140 of this Subpart have been met, annual reports are no longer required. The owner

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or operator must submit groundwater sampling and analysis data and decisions to remove constituents from the monitoring program no later than 30 days after the sampling and analysis have been completed.

- be) All annual reports must contain the following information:
- 1) Trend analyses required by Section 840.118(b) of all groundwater monitoring data generated by the groundwater monitoring program required by Section 840.114112 of this Subpart; ~~during the preceding year and any additional data or information required by Section 840.118(d) of this Part; and~~
 - 2) A copy of any notice submitted to the Agency pursuant to Section 840.118(c)(1)(A);
 - 3) A discussion of any statistically significant increasing trends and actions taken to mitigate such trends in accordance with Section 840.118(c)(3) or information required by Section 840.118(d) of this Part; and
 - 4) The completed closure or post-closure activities performed during the preceding year; and
 - 3) A summary of all modifications made to the closure plan or post-closure care plan during the preceding year and copies of the updated closure and post-closure plans reflecting any such modifications.
- cd) The owner or operator of Ash Pond D must maintain onsite or at a location specified in the closure or post-closure care plan all monitoring data and trend analysis data for 10 years following generation of the data.
- de) The owner or operator of Ash Pond D must maintain the closure plan until the end of the post-closure care period.
- ef) The owner or operator of Ash Pond D must maintain the post-closure care plan for 10 years following the certification of the post-closure report as required by Section 840.142140.
- fg) All reports, plans, modifications and notifications required under this Subpart to be submitted to the Agency must be submitted in writing to the Bureau of Water

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Land, Division of Public Water Supplies, Attn: Hydrogeology and Compliance Unit, 1021 North South Grand Avenue East, P.O. Box 19276, Springfield, Illinois 62794-9276 or electronically as authorized and directed by the Agency.

Section 840.146 144 Construction Quality Assurance Program ~~Modification of Closure Plan or Post-Closure Care Plan~~

- a) The following components must be constructed according to a construction quality assurance program:
 - 1) Installation of the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Part;
 - 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.
- b) The construction quality assurance program must meet the following requirements:
 - 1) The operator must designate a construction quality assurance ("CQA") officer who is an Illinois licensed professional engineer (LPE).
 - 2) At the end of each week of construction of the final cover system until construction is complete, a summary report must be either prepared 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 certify the report.
 - 3) The CQA officer must exercise judgment to certify the following:
 - A) That the bedding material contains no undesirable objects;
 - B) That the closure plan has been followed;

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- C) That the anchor trench and backfill are constructed to prevent damage to the geosynthetic membrane;
 - D) That all tears, rips, punctures, and other damage are repaired;
 - E) That all geosynthetic membrane seams are properly constructed and tested in accordance with manufacturer's specifications;
 - F) That the groundwater trench is constructed to intersect the water table;
 - G) That the groundwater trench is properly constructed to slope towards extraction points, and the extraction equipment is properly designed and installed;
 - H) That an appropriate operations and maintenance plan for the trench and extraction and discharge equipment is provided;
 - I) That proper filter material consisting of uniform granular fill, to avoid clogging, is used in construction; and
 - J) That the filter material as placed must possess structural strength adequate to support the maximum loads imposed by the overlying materials and equipment used at the facility.
- 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:
 - A) Compaction of the subgrade and foundation to design parameters;
 - B) Application of final cover, including installation of the geomembrane;

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- C) Installation of the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Subpart; and
- D) Construction of ponds, ditches, lagoons and berms.
- 6) If the CQA officer is unable to be present to perform, as required by subsection (b)(5) of this Section, the CQA officer must provide, in writing, the reasons for his or her absence, a designation of a person who must exercise professional judgment in carrying out the duties of the CQA officer-in-absentia, 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.
- 7) The sampling program must be implemented as part of the CQA plan for all construction activities in order to ensure, at a minimum, that construction materials and operations meet design specifications.
 - A) The sampling program must be designed prior to construction;
 - B) The sampling program must be based upon statistical sampling techniques and must establish and specify criteria for acceptance or rejection of materials and operations.

~~The owner or operator of Ash Pond D may modify the closure or post-closure plan so long as the modification is in accordance with the provisions of this Subpart. The updated plans must be filed with the Agency pursuant to Section 840.142(c)(3) of this Subpart.~~

Section 840.148 Review, Approval, and Modification of Closure Plan and Post-Closure Care Plan

The closure plan and post-closure care plan prepared and submitted to the Agency in accordance with Sections 840.128 and 840.138 of this Subpart, and any modifications to those plans, must be reviewed and approved by the Agency prior to implementation.

- a) A closure plan satisfying the requirements of Section 840.130 of this Subpart, a post-closure care plan satisfying the requirements of Section 840.140 of this Subpart, and any modifications to approved plans must be submitted to the

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Agency for review and approval prior to implementation. 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 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 a closure plan or post-closure care 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 supervising the preparation of the proposed modification.
- c) When reviewing a closure plan or modification, the Agency must consider:
- 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to Section 840.130 of this Subpart 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 Subpart A;
 - 2) Whether the activities, structures and devices proposed are in accordance with the applicable standards and requirements of this Subpart A 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) The likelihood that the plan or modification will result in the containment of the ash and associated contaminants and the attainment of the

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applicable groundwater quality standards as set forth in Sections 840.116 and 840.118 of this Subpart;

- 4) Whether the plan or modification contains the required professional signatures and seals.
- d) When reviewing a post-closure care plan or proposed modification, the Agency must consider:
- 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to Section 840.140 of this Subpart 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 Subpart A;
 - 2) Whether the activities, structures and devices proposed will be completed, operated and maintained in accordance with the applicable standards and requirements of this Subpart A 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) 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;
 - 4) Whether the plan or modification contains the required professional signatures and seals.
- e) 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 made by certified or registered mail post-marked with a date stamp and with return receipt requested. 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:

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- 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 Subpart A, 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 Subpart A, 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.
- f) If the Agency disapproves a plan or modification, approves a plan or modification with conditions, or fails to issue a final determination within the applicable review period, the owner or operator may, within 35 days after receipt of the final determination or expiration of the review period, file an appeal with the Board. Appeals to the Board are subject to ~~must be in the manner provided for the review under of permit decisions in~~ Section 40 of the Act (415 ILCS 5/40).

Section 840.150 Review and Approval of Closure Report and Certification of Completion of Closure, Post-Closure Report and Certification of Completion of Post-Closure Care Plan

The closure report and post-closure report prepared and submitted to the Agency in accordance with Sections 840.134 and 840.142 of this SubpPart must be reviewed and approved by the Agency prior to the completion of closure or post-closure care.

- a) A closure report satisfying the requirements of Section 840.134 of this SubpPart and a post-closure report satisfying the requirements of Section 840.142 of this SubpPart must be submitted to the Agency for review and approval. Closure and post-closure activities will not be deemed complete until the reports are approved by the Agency.
- b) Submission, ~~and~~ review, and approval procedures ~~requirements~~ and deadlines, notification requirements, and rights of appeal shall be the same as those set forth in Section 840.148 of this SubpPart for closure plans and post-closure care plans.
- c) When reviewing a closure report and certification of completion of closure, the

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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 Subpart A and the approved closure plan including, but not limited to:

- 1) The performance of the hydrogeologic site investigation required by Section 840.110 of this Subpart;
 - 2) The installation of the groundwater monitoring system required by Section 840.112 of this Subpart;
 - 3) The installation of the groundwater collection trench and discharge system or alternative as approved by the Agency as required by Sections 840.120 and 840.122;
 - 4) The construction of the final slope and compliance with the stability criteria as required by Section 840.124 of this Subpart;
 - 5) The installation of the final cover system as required by Section 840.126 of this Subpart;
 - 6) Compliance with the Construction Quality Assurance requirements of Section 840.146 of this Subpart;
 - 7) The establishment of a groundwater management zone in accordance with Section 840.116(b), if applicable;
 - 8) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Subpart, if applicable;
 - 9) The presence of professional signatures and seals as required by Section 840.134.
- d) 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 Subpart A and the approved post-closure care plan including, but not limited to:

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- 1) The post-closure maintenance of the cover system as required by Section 840.136;
- 2) The maintenance of the groundwater monitoring system in accordance with Section 840.112(d);
- 3) The implementation of the groundwater monitoring program as required by Section 840.114 of this SubpPart;
- 4) The operation and maintenance of the groundwater collection trench and discharge system, or alternative approved by the Agency, as required by Sections 840.120 and 840.122;
- 5) The performance of the groundwater trend analysis as required by Section 840.118 of this SubpPart;
- 6) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this SubpPart, if applicable;
- 7) Compliance with the requirements of the groundwater management zone as established pursuant to Section 840.116(b), if applicable;
- 8) Compliance with the groundwater quality standards set forth in Sections 840.116(a) and 840.116(b) as demonstrated in accordance with Section 840.118; and
- 9) The presence of professional signatures and seals as required by Section 840.140.

Section 840.152 Resource Conservation and Recovery Act

Nothing in this Subpart A 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. 94-480), as amended, or regulations adopted thereunder. To the extent that any rules adopted in this Subpart A are less stringent than or inconsistent with any such laws applicable to the closure of Ash Pond D, such laws will prevail. ~~Any rules adopted in this Subpart A that are less stringent than or inconsistent with such federal laws applicable to Ash Pond D or state laws adopted to obtain federal delegation, authorization or approval of a state program administered pursuant to such~~

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~~federal laws are void by operation of law.~~

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Proposed Rule With Agreed To Changes

The attached agreed to proposed rulemaking language incorporates the Agency's August 18, 2009 proposed revisions and the parties agreed to revisions thereof. This is a clean version of the agreed to language.

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TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER j: COAL COMBUSTION WASTE SURFACE IMPOUNDMENTS

PART 840

SITE-SPECIFIC CLOSURES OF COAL COMBUSTION WASTE SURFACE
IMPOUNDMENTS

SUBPART A: CLOSURE OF ASH POND D, HUTSONVILLE POWER STATION

Section

840.100	Purpose
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840.104	Definitions
840.106	Abbreviations and Acronyms
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840.116	Groundwater Quality Standards
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840.142	Post-Closure Report and Certification of Completion of Post-Closure Care Plan
840.144	Recordkeeping and Reporting Requirements
840.146	Construction Quality Assurance Program
840.148	Review, Approval and Modification of Closure Plan and Post-Closure Care Plan

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- 840.150 Review and Approval of Closure Report and Certification of Completion of
 Closure, Post-Closure Report and Certification of Completion of Post-Closure
 Care Plan
- 840.152 Resource Conservation and Recovery Act

AUTHORITY: Implementing Section 22 of the Environmental Protection Act (415 ILCS 5/22) and Section 8 of the Illinois Groundwater Protection Act (415 ILCS 55/8), and authorized by Sections 22, 27, and 28 of the Environmental Protection Act (415 ILCS 51/22, 27, and 28) and Section 8 of the Illinois Groundwater Protection Act (415 ILCS 55/8).

SOURCE: Adopted in R09- _____ at _____ Ill. Reg., effective _____, 2009.

SUBPART A: CLOSURE OF ASH POND D, HUTSONVILLE POWER STATION

Section 840.100 Purpose

This Subpart provides for the closure of Ash Pond D located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

Section 840.102 Applicability

This Subpart exclusively applies to the closure and post-closure care of Ash Pond D, located at the Hutsonville Power Station.

Section 840.104 Definitions

Unless otherwise specified, the definitions of the Environmental Protection Act ("Act") [415 ILCS 5] apply to this Subpart. 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)]

"Ash Pond D" means the surface impoundment designated as Ash Pond D, located at the Hutsonville Power Station, 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

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"Board" means the Illinois Pollution Control Board.

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

"Hutsonville Power Station" or "Hutsonville site" means the electric generating station located at 15142 East 1900 Avenue, Hutsonville, Crawford County, Illinois.

"Lower zone of underlying aquifer" means the sands and gravels beneath the fine-grained surficial alluvium within the Wabash River bedrock valley.

"On-site" means the same or geographically contiguous property constituting the Hutsonville Power Station.

"Off-site" means any property that is not part of the Hutsonville Power Station.

"Operator" means the person responsible for the operation of Ash Pond D.

"Owner" means the person who owns Ash Pond D.

"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]

"Professional engineer" means a person who has registered and obtained a seal pursuant to the Professional Engineering Practice Act of 1989. [225 ILCS 325]

"Professional geologist" means a person licensed under the laws of the State of Illinois to practice as a professional geologist. [415 ILCS 5/58.2]

"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 this act or regulations thereunder. [415 ILCS 5/3.460]

"Statistically significant" means the application of a Mann-Kendall analysis performed at 95 percent confidence to determine whether consecutive groundwater sampling data showing greater or lesser concentrations of constituents is statistically significant.

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“Upper zone of underlying aquifer” means surficial sands and sandstones overlying shale west of the Wabash River bedrock valley, and sand lenses within the surficial fine-grained alluvium.

Section 840.106 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

Section 840.108 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 on-
line 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/>).

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"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>).

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).

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

Section 840.110 Hydrogeologic Site Investigation

The owner or operator of Ash Pond D must design and implement a hydrogeologic site investigation to determine the nature and extent of contamination originating from Ash Pond D and to develop hydrogeologic information for the uses set forth below. If approved in the closure plan, any information from any hydrogeologic site investigation performed since 1999 may be used to satisfy the requirements of this Section. The uses of the hydrogeologic site investigation shall include, but not be limited to:

- a) Providing information to define hydrogeology and to assess the groundwater impacts associated with Ash Pond D;
- b) Providing information to perform a model to assess the groundwater impacts associated with closure of Ash Pond D; and
- c) Providing information to establish a groundwater monitoring system.

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Section 840.112 Groundwater Monitoring System

The owner or operator of Ash Pond D must design and install a groundwater monitoring system that enables it to monitor groundwater to evaluate post-closure groundwater quality and trends and to demonstrate compliance with the applicable groundwater quality standards at designated compliance points as set forth in Sections 840.116 and 840.118 of this Subpart. If approved in the closure plan, any groundwater monitoring well in operation since 1999 that complies with the requirements set forth in this Section may be used in satisfying the requirements of this Section.

- a) 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 the 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.
- b) 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 quality of background water that has not been affected by contamination from Ash Pond D;
 - 2) Represent the quality of groundwater at the compliance point or points; and
 - 3) Determine compliance with Sections 840.116 and 840.118 of this Subpart.
- c) Monitoring wells must be located in stratigraphic horizons that could serve as contaminant pathways.
- d) The groundwater monitoring system approved in the closure plan must include a maintenance plan.

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Section 840.114 Groundwater Monitoring Program

The owner or operator of Ash Pond D must develop a groundwater monitoring program that enables it to monitor groundwater to evaluate post-closure groundwater quality both on-site and off-site to demonstrate compliance with Sections 840.116 and 840.118 of this Subpart. The owner or operator must begin the groundwater monitoring program upon completion of the installation of the groundwater monitoring system in accordance with Section 840.112 and the approved closure plan. The groundwater monitoring program must comply with following requirements:

- a) The owner or operator of Ash Pond D must monitor each well included in the groundwater monitoring system pursuant to Section 840.112 on a quarterly basis for the constituents identified in 35 Ill. Adm. Code 620.410(a) and (d) except radium-226 and radium-228. Any constituent that is not detectable in the down-gradient wells for four consecutive quarters or has a concentration that is not statistically greater than the concentration detected in the up-gradient wells for four consecutive quarters may be removed from the monitoring program in both the up-gradient and down-gradient wells with the exception of boron, iron, manganese, pH, sulfate, and TDS. The owner or operator must also monitor for the following: specific conductance, groundwater elevation, and monitoring well depth.
- b) Five years after approval of the closure plan, the owner or operator of Ash Pond D may request modification of the post-closure care plan to reduce the frequency of groundwater monitoring to semi-annual sampling by demonstrating all of the following:
 - 1) That monitoring effectiveness will not be compromised by the reduced frequency of monitoring;
 - 2) That sufficient data has been collected to characterize groundwater; and
 - 3) That concentrations of constituents monitored pursuant to subsection (a) of this Section at the down-gradient boundaries of the Hutsonville site show no statistically significant increasing trends that can be attributed to Ash Pond D.
- c) If concentrations of constituents monitored pursuant to subsection (a) of this

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Section at the down-gradient boundaries of the Hutsonville site show no statistically significant increasing trends that can be attributed to Ash Pond D for the five years after reducing the monitoring frequency to semi-annual, the owner or operator of Ash Pond D may request modification of the post-closure care plan to reduce monitoring frequency to annual sampling by demonstrating all of the factors set forth in subsections (b)(1) through (b)(3) of this Section.

- d) The owner or operator of Ash Pond D may discontinue groundwater monitoring upon Agency approval of the certified post-closure care report as required by Section 840.142.
- e) Sampling and analysis data from groundwater monitoring and decisions to remove any constituent from the monitoring program must be reported to the Agency as provided in Section 840.144(a) of this Subpart.
- f) 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 as incorporated by reference at Section 840.108 of this Subpart or other procedures approved by the Agency in the closure plan or post-closure care 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";
 - 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;

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- 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."
- g) The owner or operator of Ash Pond D must establish a groundwater monitoring quality assurance program for sample collection, preservation and analysis.

Section 840.116 Groundwater Quality Standards

- a) On-site, prior to the completion of the post-closure care period, the applicable groundwater quality standards at the Hutsonville site for concentrations of contaminants from Ash Pond D are the concentrations as determined by groundwater monitoring, if such concentrations exceed the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410. After completion of the post-closure care period, the on-site concentrations of contaminants from Ash Pond D as determined by groundwater monitoring, if such concentrations exceed the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410, are the applicable groundwater standards at the Hutsonville site if:
 - 1) To the extent practicable, the exceedence has been minimized and beneficial use, as appropriate for the class of groundwater, has been returned on-site;
 - 2) Any threat to human health or the environment on-site has been minimized; and
 - 3) An institutional control prohibiting potable uses of groundwater is placed on the Hutsonville site in accordance with the Uniform Environmental Covenants Act (765 ILCS 122) or an alternative instrument authorized for environmental uses under Illinois law and approved by the Agency. Existing potable uses of groundwater may be preserved as long as such uses remain fit for human consumption in accordance with accepted water supply principles.
- b) Off-site, the applicable groundwater quality standards are the numeric standards for Class I: Potable Resource Groundwater set forth in 35 Ill. Adm. Code 620.410 in the upper zone of the underlying aquifer and the nondegradation standard of 35 Ill. Adm. Code 620.Subpart C in the lower zone of the underlying aquifer, unless

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a groundwater management zone (GMZ) has been established as provided in 35 Ill. Adm. Code 620.250 with the written permission of the affected owner(s) for off-site property or properties with groundwater contamination from Ash Pond D so that monitoring wells may be installed and such other corrective actions designed and implemented as necessary to achieve compliance with 35 Ill. Adm. Code 620.

- 1) A GMZ for off-site properties with groundwater contamination from Ash Pond D and any related design and construction activities must be proposed and approved in the closure plan or post-closure care plan or any modification thereof, as appropriate.
- 2) Groundwater quality standards for an off-site GMZ are set forth at 35 Ill. Adm. Code 620.450(a)(4).

Section 840.118 Demonstration of Compliance

- a) Compliance with the on-site and off-site groundwater quality standards set forth in Sections 840.116(a) and (b) of this Subpart:
 - 1) Compliance with on-site groundwater quality standards will be achieved when no statistically significant increasing trend that can be attributed to Ash Pond D is detected in the concentrations of all constituents monitored in accordance with Section 840.114 of this Part at the down-gradient boundaries of the Hutsonville site for four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c) of this Subpart.
 - 2) Compliance with off-site groundwater quality standards:
 - A) Compliance with off-site groundwater quality standards set forth in Section 840.116(b) of this Part will be achieved when:
 - i) A statistically significant decreasing trend in concentrations of constituents monitored in accordance with Section 840.114 of this Subpart in the upper zone of the underlying aquifer at the down-gradient boundaries of the Hutsonville site is detected in the concentrations of all constituents monitored for a period of four consecutive years after

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changing to an annual monitoring frequency pursuant to Section 840.114(c) of this Subpart;

- ii) No statistically significant increasing trend that can be attributed to Ash Pond D is detected in concentrations of constituents monitored in accordance with Section 840.114 of this Subpart in the lower zone of the underlying aquifer at the down-gradient boundaries of the Hutsonville site for four consecutive years after changing to an annual monitoring frequency pursuant to Section 840.114(c) of this Subpart; and
- iii) All concentrations of constituents monitored in accordance with Section 840.114 of this Subpart are at or below the applicable groundwater quality standards as provided in Section 840.116(b) of this Subpart at the down-gradient boundaries of the Hutsonville site.

- B) If a groundwater management zone for off-site properties with groundwater contamination from Ash Pond D is established as provided in Section 840.116(b) of this Subpart, the compliance points will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.

- b) For purposes of demonstrating compliance:

- 1) The owner or operator of Ash Pond D must perform an annual trend analysis for each monitoring well located at the down-gradient boundaries of the Hutsonville site for all constituents monitored in accordance with Section 840.114 of this Subpart, based on a minimum of four consecutive samples, by applying Sen's Estimate of Slope.
- 2) If a groundwater management zone for off-site properties with groundwater contamination from Ash Pond D is established as provided in Section 840.116(b) of this Subpart, the demonstration of compliance will be determined as set forth in the GMZ approved in the closure plan or post-closure care plan, as appropriate.

- c) Compliance with nondegradation standards during closure and post-closure care

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periods:

- 1) If the results of sampling and analysis show an increasing trend at any monitoring well located at the down-gradient boundaries of the Hutsonville site, a Mann-Kendall analysis must be performed at 95 percent confidence to determine whether the increasing trend is statistically significant. The owner or operator of Ash Pond D must investigate the cause of a statistically significant increasing trend as determined under subsection (b) of this Section. If the statistically significant increasing trend occurs during post-closure care, such investigation must include more frequent inspection of the surface of the cover system and evaluation of background concentrations and the effectiveness of the groundwater collection trench required by Section 840.120 of this Subpart.
 - A) If an investigation performed in accordance with subsection (c)(1) of this Section attributes a statistically significant increasing trend to a superseding cause, the owner or operator of Ash Pond D must notify the Agency in writing, stating the cause of the increasing trend and providing the rationale used in such a determination.
 - B) If there is no superseding cause for the statistically significant increasing trend and sampling frequency has been reduced pursuant to Sections 840.114(b) or (c) of this Subpart to semi-annual or annual sampling, the owner or operator must return to a quarterly sampling schedule. After four consecutive quarterly samples show no statistically significant increasing trend, the frequency of groundwater monitoring may be returned to either semi-annual or annual, whichever frequency was utilized prior to the return to quarterly sampling.
 - C) For purposes of this subsection (c)(1), notifications concerning statistically significant increasing trends and revisions of the sampling frequency must be reported to the Agency in writing within 30 days after making the determinations as provided in Section 840.144(f) of this Subpart.
- 2) If a statistically significant increasing trend is observed to continue over a period of two or more consecutive years and there are no superseding

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causes for the trend, the owner or operator must perform the following:

- A) A hydrogeologic investigation; and
 - B) Additional site investigation, if necessary.
- 3) Based on the outcome of the activities required by subsection (c)(2) of this Section, the owner or operator of Ash Pond D must take action to mitigate statistically significant increasing trends that are causing, threatening or allowing exceedences of off-site groundwater quality standards as set forth in Section 840.116(b). Such actions must be proposed as a modification to the post-closure care plan within 180 days after completion of the activities required by subsection (c)(2) of this Section.

Section 840.120 Groundwater Collection Trench

The owner or operator of Ash Pond D must design, install, and, consistent with any applicable wastewater discharge permit conditions, operate a groundwater collection trench along the south property boundary of the Hutsonville Power Station to prevent migration of groundwater impacted by Ash Pond D south of the property boundary. Plans for the groundwater collection trench including, but not limited to, a plan for operation and maintenance, must be approved by the Agency in the closure plan. The groundwater collection trench must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart. Once compliance with the groundwater quality standards as set forth in Section 840.116 has been achieved in accordance with Section 840.118(a), the owner or operator of Ash Pond D may discontinue operation of the groundwater collection trench. Upon discontinuing operation of the groundwater collection trench, the owner or operator must perform four quarterly sampling of the groundwater monitoring system wells as identified in the post-closure care plan, or modification thereof, to ensure compliance with the applicable groundwater quality standards set forth in Section 840.116. Results of the four quarterly sampling must be included in the post-closure report documentation. If compliance is not confirmed, operation of the groundwater collection trench and discharge system must be resumed.

Section 840.122 Groundwater Discharge System

Groundwater collected in the groundwater collection trench must be directed to an outfall for which the Hutsonville Power Station has NPDES authorization or to another option as approved

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by the Agency in the closure plan or post-closure care plan. 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 closure plan. The groundwater discharge system must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart.

Section 840.124 Final Slope and Stabilization

- a) All final slopes must be designed and constructed to 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.
- c) Ash Pond D 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 Ash Pond D must be regraded to eliminate any freeboard between the top of the berm and the adjacent surface of the coal combustion waste;
 - 2) Additional coal combustion waste only may be placed directly on top of coal combustion waste that is already in place;
 - 3) The maximum final slope must be no greater than five (5) percent;
 - 4) Any additional coal combustion waste used to establish the final grade and slope is considered coal combustion by-product, and its use does not require any independent approval pursuant to Section 3.135 of the Act (415 ILCS 5/3.135).

Section 840.126 Final Cover System

The owner or operator of Ash Pond D must design and install a final cover system for Ash Pond D. The final cover system must consist of a low permeability layer and a final protective layer.

- a) Standards for the low permeability layer. The low permeability layer must be

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designed to minimize surface infiltration and must consist of a geosynthetic membrane cover and be constructed in accordance with the following standards:

- 1) 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 three (3) foot layer of soil with a hydraulic conductivity of 1×10^{-7} centimeters per second.
 - 2) The geosynthetic membrane must be placed over a prepared base free from sharp objects and other materials that may cause damage.
- b) Standards for the final protective layer.
- 1) The final protective layer must cover the entire geosynthetic membrane.
 - 2) The final protective layer must be at least three feet thick and must be sufficient to protect the geosynthetic membrane from freezing and minimize root penetration of the geosynthetic membrane.
 - 3) The final protective layer must consist of soil material capable of supporting vegetation.
 - 4) The final protective layer must be placed as soon as possible after placement of the geosynthetic membrane.
 - 5) The final protective layer must be covered with vegetation to minimize wind and water erosion.
- c) Construction Quality Assurance Program. The final cover system must be constructed according to a construction quality assurance program that meets the requirements of Section 840.146 of this Subpart.

Section 840.128 Closure Plan

- a) Within 180 days after the effective date of this rule, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure plan for review and approval.

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- b) The owner or operator of Ash Pond D must maintain the closure plan onsite or at a location specified in the closure plan.

Section 840.130 Contents of Closure Plan

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

- a) Site map. The site map must identify all pertinent features and buildings at the Hutsonville Power Station and must clearly identify the following:
 - 1) All of the surface impoundments located at the site;
 - 2) All existing and proposed groundwater collection trenches associated with the operation or closure of Ash Pond D; and
 - 3) All existing and proposed groundwater monitoring wells.
- b) Description of Ash Pond D. The description of Ash Pond D must include all of the following information:
 - 1) A description of the contents of Ash Pond D;
 - 2) The estimated volume of material contained in Ash Pond D; and
 - 3) An analysis of the structural integrity of Ash Pond D.
- c) Description of the closure activities to be performed in accordance with this Subpart and any additional activities performed by the owner or operator to close Ash Pond D, including any dewatering.
- d) Description and results of the hydrogeologic site investigation required by Section 840.110 of this Subpart.
- e) Description of the groundwater trend analysis methods as required by Section 840.118 of this Subpart.
- f) Plans, specifications and drawings for the groundwater monitoring system required by Section 840.112 of this Subpart.

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- g) Description of the groundwater monitoring program required by Section 840.114 of this Subpart including, but not limited to, a description of the quality assurance program for sample collection, preservation and analysis.
- h) Identification of the location of the monitoring wells used for trend analyses required by Section 840.118 of this Subpart.
- i) Plans, specifications and drawings for the groundwater collection trench and discharge system set forth in Sections 840.120 and 840.122.
- j) Plans, specifications and drawings for the final slope design and construction and demonstration of compliance with the stability criteria required in Section 840.124.
- k) Plans, specifications and drawings for the final cover system required by Section 840.126 of this Subpart.
- l) Estimates of the amount of time to complete closure, including an estimate of the time required for hydrostatic equilibrium of groundwater beneath Ash Pond D, the cost of closure, and the cost of post-closure care.
- m) A proposal for a groundwater management zone as set forth in Section 840.116(b) of this Subpart, if applicable, and including, but not limited to, plans, specifications and drawings for any structures or devices that must be constructed.
- n) Description of the Construction Quality Assurance program required by Section 840.146 of this Subpart including, but not limited to, the sampling programs required by Section 840.146(b)(7) of this Subpart.
- o) Description of actions proposed to mitigate statistically significant increasing trends in accordance with Section 840.118(c) of this Subpart, if applicable, including, but not limited to, plans, specifications, and drawings for any structures or devices that must be constructed.
- p) The signature and seal of the professional engineer supervising the preparation of the closure plan.

Section 840.132 Modification of Existing Permits

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Within 180 days of the effective date of this Subpart A, the owner or operator of Ash Pond D must timely submit to the Agency an application to revise any state operating permit or NPDES permit issued by the Agency as required by Sections 840.120 and 840.122 of this Subpart, if necessary.

**Section 840.134 Completion of Closure, Closure Report and Certification of
Completion of Closure**

- a) The owner or operator must complete engineering and design activities for the closure of Ash Pond D within 180 days after the effective date of this rule.
- b) The owner or operator must complete closure of Ash Pond D within 18 months after the Agency's approval of the closure plan, unless the Agency approves an alternative timeline.
- c) No later than 90 days after the completion of all closure activities required by this Subpart and approved in the closure plan, the owner or operator of Ash Pond D must prepare and submit to the Agency a closure report for review and approval. The report must include certification by a professional engineer that Ash Pond D has been closed in accordance with the approved closure plan required by Section 840.128 of this Part and the requirements of this Subpart. The 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 840.146 of this Subpart;
 - 2) Photographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities;
 - 3) A written summary of closure requirements and activities as set forth in the closure plan and this Subpart A;
 - 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

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implementation of the closure plan, the preparation of the closure report, and making the certification of completion of closure.

Section 840.136 Post-Closure Maintenance of Cover System

The owner or operator of Ash Pond D 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 Ash Pond D must conduct inspections of the cover system at the same time and frequency as the groundwater monitoring sampling schedule set forth in Section 840.114 of this Subpart.
- b) The owner or operator of Ash Pond D 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 Ash Pond D must repair all eroded and scoured drainage channels and replace lining material, if necessary.
- d) The owner or operator of Ash Pond D must fill and recontour all holes and depressions created by settling so as to prevent standing water.
- e) The owner or operator of Ash Pond D must revegetate all areas in excess of 100 square feet, cumulative, with failed or eroded vegetation.
- f) The owner or operator of Ash Pond D 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.

Section 840.138 Post-Closure Care Plan

- a) Within 180 days after the effective date of this Subpart A, the owner or operator of Ash Pond D must prepare and submit to the Agency a post-closure care plan for review and approval.
- b) The owner or operator must maintain the post-closure care plan onsite or at a

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location specified in the post-closure care plan.

Section 840.140 Contents of Post-Closure Care Plan

The post-closure care plan, or modification thereof, must include, at a minimum, the following elements:

- a) Description of the post-closure care activities required by Section 840.136 of this Subpart;
- b) Description of the groundwater monitoring system required by Section 840.112 of the Subpart and a description of the maintenance plan for the groundwater monitoring system;
- c) Description of the groundwater monitoring program required by Section 840.114 of this Subpart;
- d) Identification of the location of the monitoring wells used for trend analyses required by Section 840.118 of this Subpart;
- e) Description of the operation and maintenance that will be required for the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Subpart;
- f) Description of the groundwater trend analysis methods as required by Section 840.118 of this Subpart;
- g) A proposal for a groundwater management zone as set forth in Section 840.116(b) of this Part, if applicable;
- h) Description of actions proposed to mitigate statistically significant increasing trends in accordance with Section 840.118(c) of this Subpart, if applicable, and the operation and maintenance of any structures or devices; and
- i) The signature and seal of the professional engineer supervising the preparation of the post-closure care plan.

Section 840.142 Post-Closure Report and Certification of Completion of Post-Closure Care Plan

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Post-closure care must continue until a demonstration of compliance with the groundwater quality standards as set forth in Section 840.116 has been approved by the Agency. The owner or operator of Ash Pond D must prepare and submit to the Agency for review and approval a post-closure report within 60 days after satisfying the requirements of the approved post-closure care plan and achieving the applicable groundwater quality standards as set forth in the plan and Sections 840.116 through 840.118 of this Part. The post-closure report must include a certification(s) by a professional engineer that the standards and requirements set forth in this Subpart A and approved in the post-closure care plan have been met. A professional geologist may supervise post-closure care activities as appropriate under the Professional Geologist Licensing Act (225 ILCS 745). The report also must contain supporting documentation including, but not limited to:

- a) Engineering and hydrogeology reports including, but not limited to, documentation of compliance with the groundwater quality standards of this Subpart A and results of the four quarterly sampling performed under Section 840.120 of this Subpart;
- b) Photographs of the final cover system and groundwater collection trench and any other photographs relied upon to document construction activities;
- c) A written summary of post-closure care requirements and activities as set forth in the post-closure care plan and this Subpart A and their completion;
- d) Any other information relied upon by the professional engineer or professional geologist, as appropriate for the activity, in making the post-closure care certification(s); and
- e) The signature and seal of the professional engineer and professional geologist supervising the implementation of the post-closure care plan, and the signature and seal of the professional engineer supervising preparation of the post-closure report and making the certification of completion of the post-closure care plan.

Section 840.144 Recordkeeping and Reporting Requirements

- a) The owner or operator of Ash Pond D must file an annual report with the Agency no later than January 31 of each year during the closure of Ash Pond D and for the entire post-closure care period. Once the requirements of Section 840.142 of this Subpart have been met, annual reports are no longer required. The owner or

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operator must submit groundwater sampling and analysis data and decisions to remove constituents from the monitoring program no later than 30 days after the sampling and analysis have been completed.

- b) All annual reports must contain the following information:
- 1) Trend analyses required by Section 840.118(b) of all groundwater monitoring data generated by the groundwater monitoring program required by Section 840.114 of this Subpart;
 - 2) A copy of any notice submitted to the Agency pursuant to Section 840.118(c)(1)(A);
 - 3) A discussion of any statistically significant increasing trends and actions taken to mitigate such trends in accordance with Section 840.118(c)(3); and
 - 4) The completed closure or post-closure activities performed during the preceding year.
- c) The owner or operator of Ash Pond D must maintain onsite or at a location specified in the closure or post-closure care plan all monitoring data and trend analysis data for 10 years following generation of the data.
- d) The owner or operator of Ash Pond D must maintain the closure plan until the end of the post-closure care period.
- e) The owner or operator of Ash Pond D must maintain the post-closure care plan for 10 years following the certification of the post-closure report as required by Section 840.142.
- f) All reports, plans, modifications and notifications required under this Subpart 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 and directed by the Agency.

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- a) The following components must be constructed according to a construction quality assurance program:
 - 1) Installation of the groundwater collection trench and discharge system required by Sections 840.120 and 840.122 of this Part;
 - 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.
- b) The construction quality assurance program must meet the following requirements:
 - 1) The operator must designate a construction quality assurance (CQA) officer who is an Illinois licensed professional engineer (LPE).
 - 2) At the end of each week of construction of the final cover system until construction is complete, a summary report must be either prepared 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 certify the report.
 - 3) The CQA officer must exercise judgment to certify the following:
 - A) That the bedding material contains no undesirable objects;
 - B) That the closure plan has been followed;
 - C) That the anchor trench and backfill are constructed to prevent damage to the geosynthetic membrane;
 - D) That all tears, rips, punctures, and other damage are repaired;

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- E) That all geosynthetic membrane seams are properly constructed and tested in accordance with manufacturer's specifications;
 - F) That the groundwater trench is constructed to intersect the water table;
 - G) That the groundwater trench is properly constructed to slope towards extraction points, and the extraction equipment is properly designed and installed;
 - H) That an appropriate operations and maintenance plan for the trench and extraction and discharge equipment is provided;
 - I) That proper filter material consisting of uniform granular fill, to avoid clogging, is used in construction; and
 - J) That the filter material as placed must possess structural strength adequate to support the maximum loads imposed by the overlying materials and equipment used at the facility.
- 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:
 - 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 trench and discharge system required by Sections 840.120 and 840.122 of this Subpart; and
 - D) Construction of ponds, ditches, lagoons and berms.

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- 6) If the CQA officer is unable to be present to perform, as required by subsection (b)(5) of this Section, the CQA officer must provide, in writing, the reasons for his or her absence, a designation of a person who must exercise professional judgment in carrying out the duties of the CQA officer-in-absentia, 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.
- 7) The sampling program must be implemented as part of the CQA plan for all construction activities in order to ensure, at a minimum, that construction materials and operations meet design specifications.
 - A) The sampling program must be designed prior to construction;
 - B) The sampling program must be based upon statistical sampling techniques and must establish and specify criteria for acceptance or rejection of materials and operations.

Section 840.148 Review, Approval, and Modification of Closure Plan and Post-Closure Care Plan

The closure plan and post-closure care plan prepared and submitted to the Agency in accordance with Sections 840.128 and 840.138 of this Subpart, and any modifications to those plans, must be reviewed and approved by the Agency prior to implementation.

- a) A closure plan satisfying the requirements of Section 840.130 of this Subpart, a post-closure care plan satisfying the requirements of Section 840.140 of this Subpart, and any modifications to approved plans must be submitted to the Agency for review and approval prior to implementation. 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

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the time for review.

- 3) The owner or operator may 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 a closure plan or post-closure care 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 supervising the preparation of the proposed modification.
- c) When reviewing a closure plan or modification, the Agency must consider:
 - 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to Section 840.130 of this Subpart 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 Subpart A;
 - 2) Whether the activities, structures and devices proposed are in accordance with the applicable standards and requirements of this Subpart A 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) The likelihood that the plan or modification will result in the containment of the ash and associated contaminants and the attainment of the applicable groundwater quality standards as set forth in Sections 840.116 and 840.118 of this Subpart;
 - 4) Whether the plan or modification contains the required professional signatures and seals.
- d) When reviewing a post-closure care plan or proposed modification, the Agency must consider:
 - 1) Whether the plan or modification contains, at a minimum, all the elements required pursuant to Section 840.140 of this Subpart and has been

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accompanied by the information and supporting documentation necessary to evaluate the compliance of the proposed plan relative to the standards and requirements of this Subpart A;

- 2) Whether the activities, structures and devices proposed will be completed, operated and maintained in accordance with the applicable standards and requirements of this Subpart A 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) 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;
 - 4) Whether the plan or modification contains the required professional signatures and seals.
- e) 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 made by certified or registered mail post-marked with a date stamp and with return receipt requested. 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 Subpart A, 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 Subpart A, or other applicable regulations may be violated if the plan or modification is approved as submitted; and

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- 4) A statement of the reasons for conditions if conditions are required.
- f) If the Agency disapproves a plan or modification, approves a plan or modification with conditions, or fails to issue a final determination within the applicable review period, the owner or operator may, within 35 days after receipt of the final determination or expiration of the review period, file an appeal with the Board. Appeals to the Board are subject to review under Section 40 of the Act (415 ILCS 5/40).

Section 840.150 Review and Approval of Closure Report and Certification of Completion of Closure, Post-Closure Report and Certification of Completion of Post-Closure Care Plan

The closure report and post-closure report prepared and submitted to the Agency in accordance with Sections 840.134 and 840.142 of this Subpart must be reviewed and approved by the Agency prior to the completion of closure or post-closure care.

- a) A closure report satisfying the requirements of Section 840.134 of this Subpart and a post-closure report satisfying the requirements of Section 840.142 of this Subpart must be submitted to the Agency for review and approval. 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 840.148 of this Subpart for closure plans and post-closure care plans.
- c) 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 Subpart A and the approved closure plan including, but not limited to:
 - 1) The performance of the hydrogeologic site investigation required by Section 840.110 of this Subpart;
 - 2) The installation of the groundwater monitoring system required by Section 840.112 of this Subpart;

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- 3) The installation of the groundwater collection trench and discharge system or alternative as approved by the Agency as required by Sections 840.120 and 840.122;
 - 4) The construction of the final slope and compliance with the stability criteria as required by Section 840.124 of this Subpart;
 - 5) The installation of the final cover system as required by Section 840.126 of this Subpart;
 - 6) Compliance with the Construction Quality Assurance requirements of Section 840.146 of this Subpart;
 - 7) The establishment of a groundwater management zone in accordance with Section 840.116(b), if applicable;
 - 8) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Subpart, if applicable;
 - 9) The presence of professional signatures and seals as required by Section 840.134.
- d) 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 Subpart A and the approved post-closure care plan including, but not limited to:
- 1) The post-closure maintenance of the cover system as required by Section 840.136;
 - 2) The maintenance of the groundwater monitoring system in accordance with Section 840.112(d);
 - 3) The implementation of the groundwater monitoring program as required by Section 840.114 of this Subpart;
 - 4) The operation and maintenance of the groundwater collection trench and

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discharge system, or alternative approved by the Agency, as required by Sections 840.120 and 840.122;

- 5) The performance of the groundwater trend analysis as required by Section 840.118 of this Subpart;
- 6) The implementation of actions to mitigate increasing trends as required by Section 840.118(c) of this Subpart, if applicable;
- 7) Compliance with the requirements of the groundwater management zone as established pursuant to Section 840.116(b), if applicable;
- 8) Compliance with the groundwater quality standards set forth in Sections 840.116(a) and 840.116(b) as demonstrated in accordance with Section 840.118; and
- 9) The presence of professional signatures and seals as required by Section 840.140.

Section 840.152 Resource Conservation and Recovery Act

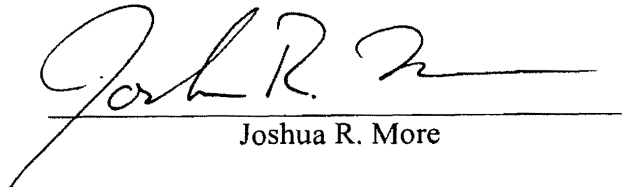
Nothing in this Subpart A shall be construed to be less stringent than or inconsistent with the provisions of the federal Resource Conservation and Recovery Act of 1976 (P.L. 94-480), as amended, or regulations adopted thereunder. To the extent that any rules adopted in this Subpart A are less stringent than or inconsistent with any such laws applicable to the closure of Ash Pond D, such laws will prevail.

CERTIFICATE OF SERVICE

I, the undersigned, certify that on this 22nd day of September, 2009, I have served electronically the attached, **JOINT STATEMENT IN SUPPORT OF PROPOSED REVISIONS**, upon the following persons:

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
Suite 11-500
100 West Randolph
Chicago, Illinois 60601

and by first class mail, postage affixed upon persons included on the **ATTACHED SERVICE LIST**.



Joshua R. More

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