***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 20

MWG LETTER OF RESPONSE TO THE WILL COUNTY VIOLATION NOTICE

NIJMAN · FRANZETTI LLP
10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com

Jennifer T. Nijman
n@nijmanfranzetti.com

Susan M. Franzetti
sf@nijmanfranzetti.com

July 27, 2012

VIA OVERNIGHT MAIL

Illinois EPA
Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice: Midwest Generation, LLC, Will County Generating Station
Identification No.: 6283
Violation Notice No.: W-2012-00058

Dear Ms. Rhodes:

In response to the above-referenced June 11, 2012 Violation Notice ("VN"), received on June 13, 2012, this written response is timely submitted on behalf of the Midwest Generation, LLC ("MWG"), Will County Generating Station ("Will County"). MWG also requests a meeting with the Illinois Environmental Protection Agency ("Illinois EPA" or "Agency") to discuss the VN and the information provided in this response.

MWG regrets that the Illinois EPA decided to issue the VN because MWG has tried to work cooperatively with the Illinois EPA concerning the hydrogeologic assessment of the coal ash ponds at Will County even though it had significant concerns and objections to how the VN has proceeded in this matter.[1] Nevertheless, MWG complied with the Agency's request that it conduct a hydrogeologic assessment of the area around the coal ash ponds and followed its requirements and comments for how the hydrogeologic assessment should be conducted, even though it was under no legal obligation to do so.[2] At no time however did MWG agree that the scope and nature of the hydrogeologic assessment the Agency required it to perform would

[1] *See, e.g.*, MWG (B. Constantelos) letter to Illinois EPA (A. Keller) dated July 15, 2009. MWG is also working cooperatively with the USEPA with regards to the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640, and is trying to coordinate the responses and requirements of both Agencies. USEPA first issued the proposed rules on June 21, 2010, and requested additional comments and information on October 12, 2011. The additional information comment period closed on November 14, 2011, and MWG is now waiting for the USEPA to issue the final rule.

[2] MWG continues to reserve its objection that the Illinois EPA did not have the legal authority to require the hydrologic assessments of the ash ponds under Sections 4 or 12 of the Illinois Environmental Protection Act (the "Act") or the Groundwater Quality Regulations, 35 Ill. Adm. Code Part 620.

provide any basis for concluding that the ash ponds were impacting groundwater. The alleged violations in the VN are based solely on the results of the hydrogeologic assessment MWG performed at the Agency's request. The results of the hydrogeologic assessment do not show that the coal ash ponds at the Will County Station are impacting the groundwater and do not provide the necessary evidence to support the alleged violations contained in the VN.

Well prior to the issuance of this VN, MWG met with the Agency to discuss the groundwater monitoring results and to discuss cooperatively how to proceed based on those results, including what additional actions, if any, the Agency believed were necessary. The Agency told MWG that it had not yet decided how to proceed. The next development was the issuance of the VN. The VN itself provides no information concerning the basis for the Agency's apparent conclusion that ash impoundments are the cause of the alleged groundwater impacts, other than the conclusory statement that "[o]perations at ash impoundments have resulted in violations of the Groundwater Quality Standards." The VN also provides no information concerning the nature or type of corrective action which the Agency may deem acceptable to address the alleged violations. The Agency is not pursuing this matter in a way that allows MWG to prepare an effective response or a Compliance Commitment Agreement.

This letter provides a detailed response to each of the alleged violations in Attachment A of the VN to the extent possible given lack of information provided in the VN. It also advances MWG's general objection to the legal sufficiency of the notice of the alleged violations contained in the VN. MWG maintains that the Illinois EPA cannot prove the alleged violations in the VN, and does not, by submitting this response, make any admissions of fact or law, or waive any of its defenses to those alleged violations.

I. General Objection to the Legal Sufficiency of the Violation Notice

The VN does not comply with the requirements of Section 31 of the Act. Section 31(a)(1)(B) of the Act requires the Illinois EPA to provide a detailed explanation of the violations alleged. 415 ILCS 5/31(a)(1)(B). Under the Act, MWG is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation.[3] The VN fails to provide adequate notice to MWG of either the alleged violations or the activities which the Agency believes are necessary to address them. The VN states that "[o]perations at ash impoundments have resulted in violations of the Groundwater Quality Standards...." (Violation Notice, Attachment A, page 1, 1st paragraph) No further description of the alleged "ash impoundments" is provided in the VN. Multiple ash impoundments exist at the Will County Station. It is impossible to identify from the contents of the VN what operations or activities at the Will County Station the Agency is claiming are the cause of the alleged violations, including whether it is the Agency's position that each of the Station's ash ponds, or

[3] *Citizens Utilities Co., v. IPCB*, 9 Ill.App.3d 158, 164, 289 N.E.2d 642, 648 (2nd Dist., 1972) (a person is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation). *See also, City of Pekin v. Environmental Protection Agency*, 47 Ill.App.3d 187, 192, 361 N.E.2d 889, 893 (3rd Dist., 1977.

only certain ones, have caused the alleged violations. Absent an accurate or complete description of the activities or operations that the Agency is alleging caused the violations, it is also not possible to identify what action might be necessary to resolve them. Attachment A to the VN states: "Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation." However, no such explanation is provided in the VN. In sum, the VN fails to comply with the legal requirement that it include a detailed explanation of the violations alleged, does not inform MWG of the specific conduct constituting the alleged violations and provides no notice of what is necessary to resolve the alleged violations. The Section 31 process is based on fundamental principles of due process. MWG should not have to speculate about what activities it allegedly engaged in that caused the violations and how to address them to resolve the alleged violations. In the absence of this material, statutorily-required information, the Agency also has effectively denied MWG's statutory right to formulate an acceptable Compliance Commitment Agreement to submit for the Agency's approval.

The VN is also deficient regarding its explanation of what laws MWG has allegedly violated. The VN solely alleges that MWG violated "Section 12" of the Act. 415 ILCS 5/12. It does not provide any further specification as to which of the provisions of Section 12 MWG has allegedly violated.

Section 12 of the Act has nine subsections, consecutively numbered (a) through (i). Each of these subsections describes a different and distinct water pollution prohibition. 415 ILCS 5/12(a)-(i). However, the VN issued to MWG does not identify which of the nine subsections the Agency is alleging MWG violated. Based on the contents of Section 12 of the Act, the Agency is taking the position that MWG violated each and every one of the provisions of Section 12. Based on the relevant facts, it is highly unlikely that this is the intent of the VN. Therefore, the VN's general reference to Section 12 of the Act, without any other explanation, is not a "detailed explanation of the violations." This is yet another example of how the VN fails to provide MWG with adequate notice as a matter of law and thereby violates MWG's due process rights.[4]

By failing to provide a detailed explanation of the violations and any explanation of the activities that the Illinois EPA believes may resolve the violations, the Illinois EPA has effectively denied MWG the opportunity to properly and thoroughly respond to the alleged violations and to make an acceptable offer to resolve them. The VN's deficiencies conflict with the intent and purpose of Section 31 of the Act, which is to avoid unnecessary litigation. Therefore, MWG respectfully requests that Illinois EPA rescind the VN and suspend any further enforcement action unless and until it has taken the necessary actions to correct and cure the legal deficiencies in the notice of the alleged violations by following the statutory requirements under Section 31(a)(1)(B) of the Act. 415 ILCS 5/31(a)(1)(B).

[4] *See, e.g., Grigoleit Co. v. IEPA*, PCB 89-184, slip op at p. 11 (November 29, 1990) (Failure to notify permit applicant of alleged violations and provide an opportunity to provide information in response was a violation of applicant's due process rights).

II. Response to Alleged Violations in the VN

Subject to and without waiving its objections to the legal sufficiency of the VN, MWG nevertheless has attempted to discern the legal basis for the alleged violations and to prepare this response in defense to those allegations based on various assumptions. MWG reserves the right to supplement this response, including by submitting a separate response should the Agency provide the legally required notice under Section 31 of the Act.

The VN alleges that the "[o]perations at ash impoundments" at MWG's Will County Station have resulted in violations of certain of the Groundwater Quality Standards at the respective monitoring wells identified in the VN. (Violation Notice at Attachment A) MWG believes the Agency's use of the term "ash impoundments" is intended to refer to the structures that the Will County Station commonly refers to as "ash ponds," and that is how they will be referred to here. The Agency further alleges that the alleged violations of the groundwater quality standards in 35 Ill. Admin. Code § 620 also constitute violations of Section 12 of the Act and the underlying groundwater regulations in 35 Ill. Admin. Code § 620. It is undisputable that the Agency has the burden to prove these alleged violations both in proceedings before the Illinois Pollution Control Board and in the courts.[5] However, the groundwater monitoring data on which the Agency primarily, if not solely, relies to assert these violations is not sufficient, legally or technically, to prove that any "ash impoundments" is the source of the alleged groundwater impacts. Further, based on the existing condition of the ash ponds, it is not likely that they are a source of the alleged groundwater impacts.

To support its defense to the alleged violations, MWG has set forth below a description of: (1) the condition and use of the ash ponds at Will County; (2) the hydrogeologic assessment performed at the Will County Station; (3) the site hydrology; and (4) why the analytical data from the monitoring wells does not establish that the ash ponds are the source of the alleged exceedances of the groundwater standards.[6] In addition, for certain of the alleged exceedances, additional information not considered by the Agency shows that it is either more likely, or at least as likely, that the source of the alleged exceedance is something other than the ash ponds. In either case, the Agency cannot sustain its burden to prove the alleged violations.

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[5] Section 31(e) of the Act provides in relevant part: "In hearings before the Board under this Title, the burden shall be on the Agency…to show either that the respondent has caused or threatened to cause…water pollution or that the respondent has violated or threatens to violate any provision of this Act or any rule or regulation of the Board or permit or term or condition thereof." 415 ILCS 5/31(e); *Citizens Utilities v. IPCB*, 9 Ill. App. 3d 158, 164, 289 N.E.2d 642, 646 (1972) (the Agency has the burden of proof in enforcement actions).

[6] In preparing this response, MWG closely reviewed the groundwater monitoring reports previously submitted to the Agency for the monitoring wells that are identified in the VN. In the course of this review, some data transcription errors were found in the previously submitted data tables included in the groundwater monitoring reports. Copies of the corrected data tables are enclosed. The tables are annotated to identify the nature of the corrections made to the previously submitted reports. However, none of the transcription errors affected the values noted in the VN.

A. The Condition of the Ash Ponds

For several reasons, the construction and operation of the Will County ash ponds makes it unlikely that they are the cause of the alleged violations. The current construction and use of the ash ponds minimizes the potential for leakage from the ash ponds to groundwater.

First, the Will County ash ponds are relatively small and they are not used as permanent disposal sites for ash. Ash is stored in the ponds and removed as needed for operational purposes. This operating condition serves to minimize the potential for the release of ash constituents to the groundwater.

Second, unlike many other ash ponds in Illinois, the four ash ponds at Will County are not simply earthen ponds with no protection against the migration of constituents into the land or groundwater. Each of the Will County ash ponds is lined to prevent releases to groundwater. Moreover, as further described below, MWG previously instituted a program which evaluated the ash ponds maintained at its stations with regard to the potential risk of migration of ash constituents to the environment. Pursuant to this internal evaluation, MWG scheduled one of the ash ponds at Will County, Pond 3S, for replacement of its liner because its evaluation showed that this pond theoretically presented the highest threat of a release as compared to the other ponds. However, when MWG initiated the liner replacement project, it found that the existing liner of Pond 3S, consisting of Poz-o-Pac material used to line all of the Will County ash ponds at issue here, was intact and in excellent condition. It did not need to be replaced. Because the new liner materials had already been purchased and the funds committed for the liner replacement, MWG nevertheless proceeded to install the new liner on Pond 3S in 2009. In the course of that project, MWG further discovered that the Poz-o-Pac lining was in such good condition, that it was a significant challenge just to remove it from the ash pond so that the new liner could be installed. Because the Pond 3S liner project showed that the condition and integrity of its Poz-o-Pac liner was excellent, and the other three ash ponds have liners constructed of the same Poz-o-Pac material, the liners in the other three Will County ash ponds have not been replaced. The facts regarding the Pond 3S liner evaluation project serves to rebut the Agency's contention that the ash ponds are the source of the alleged groundwater impacts in the VN.

The other three Will County ash ponds that are still constructed of Poz-o-Pac material meet accepted standards for preventing the migration of constituents to the environment. Each has a bottom constructed of two 12-inch layers of Poz-o-Pac, surrounding 12 inches of fill material, and sides constructed of 3 feet of Poz-o-Pac.[7] The permeability of the Poz-o-Pac liner is 10^{-7} cm/sec. Notably, this is the same degree of permeability that is required in the Illinois Pollution Control Board ("Board") Regulations for constructing a new solid waste landfill where, unlike the ash ponds, waste materials are to be disposed of on a permanent basis. *See* 35 Ill. Admin. Code § 811.306(d). The liners in the Will County ash ponds achieve the level of permeability which the Illinois regulations expressly recognize is sufficient to prevent the release

[7] Poz-o-Pac is an aggregate liner similar to concrete.

of constituents to the environment. Hence, the facts regarding the liners in place for these three ash ponds also support the conclusion that the ash ponds are not the source of the exceedances of groundwater standards alleged in the VN.

The facts to rebut the Agency's alleged violations are even more persuasive regarding the fourth ash pond, Pond 3S. As noted above, Pond 3S was relined in 2009 with a high-density polypropylene (HDPE) liner. The existing Poz-o-Pac liner on the sides of Pond 3S remained in place, with the new HDPE liner placed on top of it, providing even greater protection against the release of ash constituents. The 2009 HDPE liner alone has a permeability of approximately 10^{-13} cm/sec. Hence, the current liner in Pond 3S achieves a level of permeability that is significantly better than the Illinois permeability requirements for solid waste landfills.

The VN contains no facts concerning the condition of the liners in the Will County ash ponds that would indicate that they are allowing ash constituents to escape from the ponds. For example, the Agency does not contend that there are any breaches in the integrity of the ash pond liners that are allowing ash constituents to be released to the groundwater. The Agency similarly does not claim that the materials used for the existing liners are inadequate to prevent the migration of constituents. The Agency would be hard pressed to make such a claim because the liner materials either meet or exceed the analogous requirements for Illinois landfills and the Agency approved the use of these materials when it issued the necessary construction permit for the liner installations. In the absence of such evidence, it is certainly far more likely than not that the existing ash ponds at the Will County Station are not the source of the groundwater impacts alleged in the VN.

B. Hydrogeologic Assessment and Site Hydrology

The VN appears to be based on the flawed premise that the hydrogeologic assessment which the Agency directed MWG to perform in the vicinity of the ash ponds would be sufficient to identify the ash ponds as the source of any elevated levels of constituents in the groundwater. This is simply not the case. The results of the hydrogeologic assessment at best give rise to more questions about the source of the alleged groundwater impacts, and do not prove that the existing ash ponds are the source of those impacts.

The results of the hydrogeologic assessment show that the site hydrology at Will County consists of a complex flow system through the underlying shallow dolomite bedrock. The local groundwater flow in the vicinity of the ash ponds appears to be divergent. However, based on the current water level data, it is not possible to conclude whether the ponds are the cause of the divergence or if other conditions may be affecting the groundwater flow system. Some general observations based on the groundwater monitoring data can be made relative to upgradient versus downgradient monitoring wells. The location of monitoring wells MW-1 and MW-2 generally can be considered to be upgradient of monitoring wells MW-7 and MW-8. Monitoring wells MW-3 through MW-6 can be generally considered to be located upgradient of wells MW-9 and MW-10. The results of a comparison of the groundwater monitoring results for these sets of upgradient and downgradient wells do not support the VN's allegation that the ash ponds are the

source of the alleged groundwater impacts. The monitoring data shows that the distribution of parameter concentrations is so random that the more defensible conclusion is that the ash ponds are not the source.

Generally, the parameters detected in downgradient monitoring wells are at equivalent or lower concentrations of constituents than in the associated upgradient well.[8] In fact, there are more exceedances of the groundwater standards detected in the upgradient wells than in wells downgradient of those locations. Some of the highest concentrations of constituents were found in monitoring well MW-4. The monitoring wells located downgradient of MW-4 (MW-9 and MW-10), which are also downgradient of the ash ponds themselves, consistently have lower parameter concentrations than those found in the upgradient MW-4 monitoring well. This is particularly true of the boron and sulfate levels, which are two typical ash leachate indicators. The detections in monitoring well MW-4 are consistently almost twice as high for boron and three to four times as high for sulfate than the levels found in downgradient monitoring wells MW-9 and MW-10. This pattern of boron and sulfate detections is totally inconsistent with the VN's allegation that the ash ponds are the source of the groundwater exceedances.

The following additional examples taken from the groundwater monitoring data show constituent distributions that are not consistent with the VN's allegation that the ash ponds are the source of impacts to groundwater:

Antimony: Only two monitoring wells, MW-1 and MW-2, show exceedances of antimony. Both of these wells are upgradient of monitoring wells MW-7 and MW-8 where antimony was never detected.

Manganese: The highest concentration of manganese in any of the monitoring wells was 1.0 milligrams per liter (mg/L) at monitoring well MW-4, a monitoring well that is upgradient of MW-9 and MW-10. If the ash ponds were causing the manganese exceedances, there should be higher concentrations of manganese in MW-9 and MW-10 than in MW-4. The reverse is the case here. Manganese has not been detected in MW-9 and the concentrations of manganese in MW-10 are significantly lower than in MW-4.

Additional, similar examples for the other alleged constituent exceedances can be found in the groundwater data from the monitoring wells. In sum, the pattern of the constituent concentrations across these monitoring wells clearly does not support the Agency's contention that the ash ponds are the source of these constituents. The data are more consistent with the opposite conclusion that the ash ponds are not causing these alleged exceedances.

The VN's allegation that the ash ponds are the source of the elevated levels of chloride detected in the groundwater is also wrong. A careful review of the chloride data shows that the

[8] An exception is boron in monitoring well MW-7.

source of the elevated chloride levels is unrelated to the ash ponds. All but one of the chloride exceedances occurred in March 2011. It is well documented that both shallow groundwater and surface water commonly exhibit higher concentrations of chloride in the spring due to rain and snow melt transporting dissolved road salt.[9] Also consistent with the identification of road salt as the source of the chloride exceedances is the fact that the highest concentrations of chloride were found in March 2011 in MW-9. It should also be noted that monitoring well MW-9 is located very close to the Des Plaines River. The Des Plaines River is a known receptor for chloride-containing stormwater and snow melt run-off. Thus, the presence of elevated chloride levels due to the use of road salt is a known occurrence in the vicinity of these monitoring wells. Additional evidence that road salt is the likely source of the chloride exceedances is provided by the March 2012 groundwater monitoring results. There were no exceedances of the chloride groundwater standards in any of the Will County Station monitoring wells in March 2012. These results are consistent with the fact that the Chicago Area had relatively little snow in the 2012 winter and road salt was rarely needed, resulting in lower chloride levels in both surface waters and groundwater.[10]

In sum, the results of the groundwater monitoring conducted at the Will County Station do not show that the ash ponds are the source of the alleged exceedances. The data collected to date is accurately characterized as being inconsistent with the allegation that the operation of the ash ponds has caused the alleged violations.

C. The Will County Ash Ponds Are Not Causing Groundwater Exceedances

Because the Illinois EPA failed to specify which of the provisions of Section 12 of the Act MWG allegedly violated, MWG has had to speculate to identify the potential Section 12 violations this response needs to address. As stated above, MWG objects to the vagueness of, and legally deficient notice provided by, the VN and reserves its right to respond further when and if the Illinois EPA properly identifies the provisions of Section 12 on which it is relying.

For purposes of this response, based upon the regulations cited by the Agency in the VN, MWG has assumed that the Agency's alleged violations of Section 12 are limited to Sections 12(a), which prohibits causing or allowing water pollution, and to Section 12(d), which prohibits causing or allowing the creation of a water pollution hazard. 415 ILCS 5/12(a), (d) Based on these assumptions regarding the substance of the Illinois EPA's alleged violations, MWG submits that the Agency cannot show that the ash ponds at Will County caused or allowed water pollution or created a water pollution hazard.

The analytical results show that the distribution of the exceedances in the groundwater is random, with a predominance of the exceedances occurring in monitoring wells on the east side

[9] Mullaney, John R., *et al*, Chloride in Groundwater and Surface Water in Areas Underlain by the Glacial Aquifer System, Northern United States, Scientific Investigations Report 2009-5089, U.S. Geological Survey, Reston, VA. 2009. Table 5.

[10] Based on snowfall records for O'Hare Airport, the 2011 snowfall totaled 43.4 inches compared to 2012's total snowfall of only 19.8 inches.(Source: http://www.isws.illinois.edu/data.asp; last checked 7/27/12).

of the ash ponds, which are generally upgradient (based on higher water level elevations) of wells on the west side of the ash ponds. To show a violation of Section 12(a) and 12(d), there must be a showing not only of the presence of a potential source of contamination, but also that it is in sufficient quantity and concentration to render the waters harmful. *Bliss v. Illinois EPA,* 138 Ill. App. 3d 699, 704 (1985) ("mere presence of a potential source of water pollutants on the land does not necessarily constitute a water pollution hazard"). In other words, there must be a causal link between the potential source and the water or groundwater. The groundwater monitoring data on which the Agency relies does not establish this essential causal link between the ash ponds and the groundwater. Therefore, the Agency has failed to meet its burden to prove that the ash ponds are the cause of the alleged exceedances of the groundwater standards as required to prove a violation of sections 12(a) or 12(d) of the Act. 415 ILCS 5/12(a), (d).

The Agency also alleges violations of the groundwater quality regulations based on exceedances of the groundwater quality standards in 35 Ill. Admin. Code § 620.401. There is no violation here of section 620.401. Section 620.401 solely provides the legal criteria that groundwater must meet the standards appropriate to the groundwater's class. It is a foundational regulation, allowing for different classes of groundwater to meet different groundwater standards. It is not a prohibition regulation. There is no conduct prohibited by this section of the regulations in which MWG is alleged to have engaged. MWG cannot and did not violate section 620.401.

The remaining alleged groundwater regulation violations, 35 Ill. Admin. Code §§ 620.115, 620.301, 620.405, and 620.410 of the Board Regulations, are all based on the Agency's contention that MWG's operation of the ash ponds has caused the exceedances of the groundwater standards detected in the monitoring data. To sustain these allegations, the Agency must show that MWG caused a discharge of the subject constituents from ash ponds which in turn caused the exceedances of the groundwater standards.[11] The relevant facts and circumstances do not support either conclusion.

The use and condition of the ash ponds does not support a finding that they are releasing constituents to the groundwater. They are not disposal sites. Ash is removed from the ponds by MWG. The linings in all of the ash ponds are of sufficiently low permeability, consistent with accepted regulatory guidance, to prevent the release of constituents. The evidence provided from the 2009 inspection of the Pond 3S liner provides compelling support for the finding that they are not a likely cause of the alleged exceedances of the groundwater standards. Finally, pursuant to the terms of the Will County Station's NPDES Permit, these ash ponds are part of the flow-through wastewater treatment process at the station. MWG's operation of the ash ponds has been carried out in accordance with the terms and conditions of the NPDES Permit. Under Section 12(f) of the Act, compliance with the terms and conditions of any permit issued under Section 39(b) of the Act is deemed compliance with this subsection.

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[11] *See People of the State of Illinois v. ESG Watts, Inc.*, PCB 96-107 slip op. at p. 41 (February 5, 1998) (By finding the respondent caused a discharge of constituents into the groundwater causing a violation of the Class II Groundwater standards, the Board found the respondent also violated 35 IAC §§ 620.301 and 620.115)

Similarly, the groundwater data on which the Agency relies does not provide a sufficient scientific or technical evidentiary basis on which to conclude that the ash ponds are causing the alleged groundwater exceedances. The essential "causal link" between the ash ponds and the elevated constituents in the groundwater is missing. The data is at best inconclusive on this issue, while certain aspects of the data clearly point to other, unrelated causes.

Because the ash ponds have not been shown to have caused a release of any contaminants that is causing the groundwater exceedances, the Agency's VN does not support its claims that MWG has violated sections 620.405 or 620.301 of the Board regulations. Accordingly, MWG also has not violated section 620.115 of the Board regulations.

III. Compliance Commitment Agreement

This VN should not have been issued. Given the absence of proof that the ash ponds are the cause of the alleged groundwater exceedances, the Agency's request for a Compliance Commitment Agreement (CCA) is an attempt to compel MWG to conduct unnecessary corrective action to resolve the alleged violations.

Moreover, with the pending federal regulatory process to enact regulations for the design and operation of ash ponds, it is prudent to await the outcome of the proposed federal regulations to determine whether any changes to the ash ponds construction or operation are required by those regulations. The Agency itself has previously advanced this position. In 2010, the Agency's Steven Nightingale testified before the Illinois Pollution Control Board (the "Board") that the Board should consider initiating a temporary moratorium on the closure of coal ash impoundments because of the U.S. EPA's intention to regulate them. (*See In the Matter of Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill.Adm.Code Part 840.101 Through 840.152*, Docket R09-21 (October 7, 2010) at p. 64) On behalf of the Agency, Mr. Nightingale told the Board that if industry had to take action in the interim, it "could end up expending substantial money and resources only to find they are subject to additional and/or different closure requirements for those units." (*Id.*) The Agency's pursuit of this enforcement action, particularly given the deficiencies in its alleged evidence, also threatens to force MWG to take actions that may conflict with or otherwise differ from the requirements in the upcoming federal regulations.

As the hydrogeologic assessment showed, there is no threat to human health presented by the alleged exceedances of the groundwater standards. The hydrogeologic assessment investigated the presence of potable water sources within a 2,500-foot radius of the site. The shallow dolomite aquifer underlying the site is not used as a potable water source within this radius. The nearest groundwater wells are installed more than 1,500 feet deep, drawing water from a deep aquifer below the Maquoketa confining unit. Shallow groundwater at the site discharges either to the Des Plaines River or the Chicago Sanitary and Ship Canal (the "Canal"). The Canal is not used as a drinking water source. The nearest downgradient water supply intake in the Des Plaines River, a headwater of the Illinois River, is located at Peoria, approximately 137 miles downstream. In the absence of any potable groundwater receptors or use, groundwater

at the Will County site does not pose any risk to human health. Accordingly, awaiting the outcome of the federal regulatory proposal is appropriate under these circumstances.

Because MWG's preference is to cooperate with the Agency in this matter, MWG presents here a proposed CCA that should be acceptable based on the relevant facts and circumstances. The proposed CCA terms are as follows:

A. The ash ponds will not be used as permanent disposal sites and ash will continue to be removed from ponds on a periodic basis.

B. The ash ponds will be maintained and operated in a manner which protects the integrity of the existing liners. During the removal of ash from the ponds, appropriate procedures will be followed to protect the integrity of the existing liners, including operating the ash removal equipment in a manner which minimizes the risk of any damage to the liner.

C. During the ash removal process, visual inspections of the ponds will be conducted to identify any signs of a breach in the integrity of the pond liner. In the event that a breach of the pond liner is detected, MWG will notify the Agency and will submit a corrective action plan for repair or replacement, as necessary, of the liner. Upon the Agency's approval, and the issuance of any necessary construction permit, MWG will implement the correction action plan.

D. Institutional controls will be evaluated for addressing the alleged exceedances of the groundwater standards. There are already Environmental Land Use Controls (ELUCs) in place in the vicinity of the Will County Station. The Village of Romeoville presently is preparing an ordinance that would annex the land on which the ash ponds are located. The Village of Romeoville has a groundwater ordinance banning the use of groundwater as a potable water supply throughout the village limits. See attached §§ 50.60 through 50.99 of the Romeoville Code). The groundwater ordinance follows the requirements under the Pollution Control Board TACO regulations, 35 IAC 742.1015. If the Will County Station is not subject to the existing Romeoville ordinance, then MWG will submit for the Agency's review and approval a proposed restrictive covenant that prohibits the installation of potable wells in the area where groundwater exceedances have been detected.

E. MWG proposes to establish a Groundwater Management Zone ("GMZ") below the ash ponds pursuant to section 620.250 of the Board's regulations. 35 Ill. Admin. Code § 620.250. The corrective action required by the GMZ regulations is addressed by the existing pond liners and the proposed institutional control.

F. MWG will continue to monitor the groundwater through the existing ten groundwater monitoring wells and report its findings to Illinois EPA, pursuant to section 620.250(c) of the GMZ Regulations, 35 Ill. Admin. Code § 620.250(c). MWG

reserves the right to request the Illinois EPA's approval of a cessation of all or some of the monitoring requirements based on future monitoring results.

G. MWG will continue to monitor the development of the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640. When the final rule is issued, MWG will promptly notify Illinois EPA how it will comply with the new Federal Rules.

This letter constitutes our response to and proposed CCA for the Violation Notice W-2012-00058. MWG also reserves the right to raise additional defenses and mitigation arguments as may be necessary, in defense of the allegations listed in the Violation Notice in the event of any future enforcement. We look forward to discussing the above information further at the soon to be scheduled meeting with the Agency's representatives.

Very truly yours,

Susan M. Franzetti
Counsel for Midwest Generation, LLC

Enclosures

cc: Maria L. Race, Midwest Generation, LLC

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Will County Station
Romeoville, Illinois
Midwest Generation
21253.028

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)
Chemical Name		Class I*	12/13/10	3/28/11	6/15/11	9/15/11	12/8/11	3/16/12	12/13/10	3/28/11	6/15/11	9/15/11	12/8/11	3/16/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	0.0063	ND	ND	ND	ND	0.0073	0.017	ND
Arsenic	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	0.0052	0.0032	ND	0.008	0.0058	0.0048
Barium	Metals 6020	2.0	0.05	0.041	0.046	0.038	0.033	0.033	0.061	0.068	0.068	0.048	0.048	0.058
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	0.0011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	0.11	0.11	ND	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.2**	0.15	**0.22**	**0.16**	**0.17**	**0.16**	0.032	0.032	0.043	0.036	0.031	0.031
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0046	0.0038	ND	0.0029	0.004	0.0042	ND	ND	ND	ND	ND	ND
Selenium	Metals 6020	0.05	ND	ND	ND	0.0053	0.0025	0.0033	ND	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	1.8	1.6	1.8	1.7	1.6	1.5	1.8	1.7	**2.3**	**2.3**	1.7	1.7
Sulfate	Dissolved 9038	400	**530**	390	280	320	270	**430**	**430**	280	400	330	220	330
Chloride	Dissolved 9251	200	110	**210**	110	120	140	190	110	**250**	180	110	120	140
Nitrogen/Nitrate	Nitrogen By calc	10	ND	1.1	0.73	0.33	1.4	2.2	ND	ND	ND	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200	1,100	1,100	1,100	760	770	910	870	970	900	720	650	810
Fluoride	Dissolved 4500 FC	4	0.71	0.65	0.53	0.77	0.73	0.69	0.62	0.5	0.42	0.59	0.59	0.46
Nitrogen/Nitrite	Dissolved 4500 NO2	--	ND	ND	ND	0.042	ND	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	--	ND	1.1	0.73	0.37	1.4	2.2	ND	ND	ND	ND	ND	ND

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from bold to normal.

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Will County Station
Romeoville, Illinois
Midwest Generation
21253.028

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)
Chemical Name		Class I*	12/13/10	3/28/11	6/15/11	9/15/11	12/8/11	3/16/12	12/13/10	3/29/11	6/15/11	9/15/11	12/8/11	3/16/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.002	0.0024	ND	0.0025	0.0018	0.0017	0.0027	0.0016	ND	0.0041	0.0016	0.0015
Barium	Metals 6020	2.0	0.084	0.086	0.071	0.079	0.083	0.075	0.068	0.062	0.05	0.05	0.043	0.036
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	0.0022	ND	ND	ND	ND	0.0011	ND	ND	0.0012	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	0.37	0.57	ND	0.26	0.19	0.2	0.83	0.78	0.7	1.2	0.64	0.53
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.34**	**0.31**	**0.34**	**0.26**	**0.29**	**0.27**	**0.52**	**0.58**	**0.7**	**1.0**	**0.62**	**0.6**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0054	0.0037	ND	0.0061	0.0053	0.0052	0.0048	0.0041	ND	0.0051	0.0047	0.0048
Selenium	Metals 6020	0.05	ND	ND	ND	0.0033	ND	ND	ND	0.0033	ND	ND	0.0086	0.0067
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	**2.7**	**2.4**	**2.6**	**3.3**	**2.8**	**2.7**	**3.7**	**3.3**	**3.6**	**4.3**	**3.0**	**4.0**
Sulfate	Dissolved 9038	400	330	270	240	250	280	320	**1,500**	**1,500**	**1,600**	**4,800**	**1,600**	**2,000**
Chloride	Dissolved 9251	200	54	**250**	100	130	100	95	120	190	120	170	150	150
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	0.81	ND	0.54	ND	ND	ND	0.19	ND	0.37	0.45
Total Dissolved Solids	Dissolved 2540C	1,200	940	1,000	990	1,000	930	1,000	**2,500**	**2,600**	**2,800**	**6,000**	**3,100**	**3,700**
Fluoride	Dissolved 4500 FC	4	0.5	0.37	0.36	0.45	0.39	0.38	0.52	0.49	0.48	0.53	0.55	0.5
Nitrogen/Nitrite	Dissolved 4500 NO2	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	--	ND	ND	0.81	ND	0.54	ND	ND	ND	0.19	ND	0.37	0.45

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from bold to normal.

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Will County Station
Romeoville, Illinois
Midwest Generation
21253.028

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)
Chemical Name		Class I*	12/13/10	3/29/11	6/15/11	9/15/11	12/8/11	3/16/12	12/13/10	3/28/11	6/15/11	9/15/11	12/8/11	3/16/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0066	0.0048	ND	0.0025	0.0065	0.0065	0.0018	0.0018	ND	0.0031	0.0022	0.0022
Barium	Metals 6020	2.0	0.051	0.06	0.067	0.07	0.061	0.053	0.05	0.04	0.045	0.041	0.053	0.044
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.0079	0.0067	0.055	0.13	0.038	0.032	0.073	0.051	0.047	0.024	0.038	0.029
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	ND	ND	ND	0.0021	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	Metals 6020	0.05	0.017	0.014	0.016	0.008	0.01	0.0059	0.0062	0.0028	ND	0.011	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	**2.6**	**2.7**	**3.2**	**4.0**	**3.2**	**2.9**	**2.7**	**2.5**	**2.4**	**3.0**	**2.5**	**2.5**
Sulfate	Dissolved 9038	400	**580**	**570**	**540**	**690**	**500**	370	**500**	**540**	**570**	**420**	**440**	380
Chloride	Dissolved 9251	200	110	150	140	150	130	170	120	**210**	150	120	120	110
Nitrogen/Nitrate	Nitrogen By calc	10	0.27	1.6	0.97	0.11	1	0.11	ND	ND	0.1	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200	1,000	**1,300**	**1,400**	**1,500**	1,000	1,000	990	1,100	1,200	870	880	900
Fluoride	Dissolved 4500 FC	4	0.41	0.4	0.46	0.49	0.38	0.42	0.85	0.88	0.79	0.97	0.77	0.68
Nitrogen/Nitrite	Dissolved 4500 NO2	--	ND	0.31	0.13	ND	0.17	0.14	ND	0.048	0.16	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	--	0.27	1.9	1.1	0.11	1.2	0.25	ND	ND	0.26	ND	ND	ND

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from bold to normal.

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Will County Station
Romeoville, Illinois
Midwest Generation
21253.028

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)
Chemical Name		Class I*	12/13/10	3/29/11	6/15/11	9/15/11	12/8/11	3/16/12	12/13/10	3/29/11	6/15/11	9/15/11	12/8/11	3/16/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.004	0.0037	ND	0.0042	0.0042	0.0041	0.0067	0.0059	0.0082	0.014	0.012	0.0066
Barium	Metals 6020	2.0	0.045	0.067	0.076	0.082	0.082	0.069	0.069	0.089	0.085	0.099	0.078	0.066
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	0.016	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	0.23	0.18	ND	0.37	0.5	0.57	0.48	0.38	0.76	0.46	0.68	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.12	0.11	0.15	**0.18**	**0.2**	**0.2**	**0.33**	**0.44**	**0.47**	**0.45**	**0.4**	ND
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0029	0.0023	ND	0.0024	0.0021	ND	ND	ND	ND	0.0034	0.002	ND
Selenium	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	**4.7**	**5.0**	**5.7**	**3.4**	**5.0**	**5.1**	1.7	1.3	1.7	**2.3**	1.9	1.5
Sulfate	Dissolved 9038	400	**610**	**650**	**1,000**	**710**	**710**	**770**	**440**	**440**	**420**	**600**	330	330
Chloride	Dissolved 9251	200	160	140	140	160	150	130	93	**270**	200	160	130	160
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200	**1,300**	**1,500**	**1,600**	**1,400**	**1,300**	**1,400**	930	1,200	1,100	**1,300**	980	910
Fluoride	Dissolved 4500 FC	4	0.96	0.77	0.71	0.82	0.86	0.76	0.61	0.55	0.57	0.64	0.61	0.52
Nitrogen/Nitrite	Dissolved 4500 NO2	–	ND	0.077	0.035	0.05	0.043	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	–	ND	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from bold to normal.

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Will County Station
Romeoville, Illinois
Midwest Generation
21253.028

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)
Chemical Name		Class I*	12/13/10	3/29/11	6/15/11	9/15/11	12/8/11	3/16/12	12/13/10	3/28/11	6/15/11	9/15/11	12/8/11	3/16/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0059	0.0049	0.0052	0.0065	0.0078	0.0053	0.0041	0.0046	ND	0.0088	0.0083	0.0056
Barium	Metals 6020	2.0	0.025	0.031	0.025	0.023	0.017	0.023	0.098	0.091	0.091	0.11	0.11	0.1
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	0.32	0.46	0.63	0.6	0.71	0.61
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	ND	ND	ND	ND	ND	ND	**0.25**	**0.22**	**0.25**	**0.27**	**0.29**	**0.25**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	Metals 6020	0.05	0.0036	0.0042	ND	0.0045	0.0031	ND	ND	ND	ND	0.0032	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	**2.2**	1.4	1.7	2.0	1.9	1.4	**2.1**	1.8	**2.2**	**2.8**	**2.5**	**2.1**
Sulfate	Dissolved 9038	400	**410**	320	**410**	400	270	340	370	370	350	**420**	290	330
Chloride	Dissolved 9251	200	100	**280**	**230**	190	140	200	92	130	150	120	120	100
Nitrogen/Nitrate	Nitrogen By calc	10	ND	2.4	0.94	ND	1.9	3.2	ND	ND	ND	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200	800	1,000	940	850	660	820	990	960	990	1,000	1,100	990
Fluoride	Dissolved 4500 FC	4	0.33	0.36	0.28	0.28	0.38	0.39	0.66	0.64	0.65	0.67	0.59	0.52
Nitrogen/Nitrite	Dissolved 4500 NO2	–	0.44	1.2	0.16	0.22	0.15	0.12	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	–	ND	3.6	1.1	0.18	2.0	3.3	ND	ND	ND	ND	ND	ND

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
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- Value has not changed; font has been changed from bold to normal.

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 21

MWG LETTER OF RESPONSE TO THE JOLIET 29 VIOLATION NOTICE

NIJMAN · FRANZETTI LLP
10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com

ennifer T. Nijman
n@nijmanfranzetti.com

Susan M. Franzetti
sf@nijmanfranzetti.com

July 27, 2012

VIA OVERNIGHT MAIL

Illinois EPA
Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice: Midwest Generation, LLC, Joliet #29 Generating Station
Identification No.: 6284
Violation Notice No.: W-2012-00059

Dear Ms. Rhodes:

In response to the above-referenced June 11, 2012 Violation Notice ("VN"), received on June 13, 2012, this written response is timely submitted on behalf of the Midwest Generation, LLC ("MWG"), Joliet #29 Generating Station ("Joliet #29"). MWG also requests a meeting with the Illinois Environmental Protection Agency ("Illinois EPA" or the "Agency") to discuss the VN and information provided in this response.

MWG regrets that the Illinois EPA decided to issue the VN because MWG has tried to work cooperatively with the Agency concerning the hydrogeologic assessment of the coal ash ponds at Joliet #29 even though it had significant concerns and objections to how the VN has proceeded in this matter.[1] Nevertheless, MWG complied with the Agency's request that it conduct a hydrogeologic assessment of the area around the coal ash ponds and followed its requirements and comments for how the hydrogeologic assessment should be conducted, even though it was under no legal obligation to do so.[2] At no time however did MWG agree that the scope and nature of the hydrological assessment the Agency required it to perform would

[1] *See, e.g.*, MWG (B. Constantelos) letter to Illinois EPA (A. Keller) dated July 15, 2009. MWG is also working cooperatively with the USEPA with regards to the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640, and is trying to coordinate the responses and requirements of both Agencies. USEPA first issued the proposed rules on June 21, 2010, and requested additional comments and information on Oct. 12, 2011. The additional information comment period closed on November 14, 2011, and MWG is now waiting for the USEPA to issue the final rule.

[2] MWG continues to reserve its objection that the Illinois EPA did not have the legal authority to require the hydrological assessments of the ash ponds under Sections 4 or 12 of the Illinois Environmental Protection Act (the "Act") or the Groundwater Quality Regulations, 35 Ill. Adm. Code Part 620.

provide any basis for concluding that the ash ponds were impacting groundwater. The alleged violations in the VN are based solely on the results of the hydrogeologic assessment MWG performed at the Agency's request. The results of the hydrogeologic assessment do not show that the coal ash ponds at the Joliet #29 Station are impacting the groundwater and do not provide the necessary evidence to support the alleged violations contained in the VN.

Well prior to the issuance of this VN, MWG met with the Agency to discuss the groundwater monitoring results and to discuss cooperatively how to proceed based on those results, including what additional actions, if any, the Agency believed were necessary. The Agency told MWG that it had not yet decided how to proceed. The next development was the issuance of the VN. The VN itself provides no information concerning the basis for the Agency's apparent conclusion that the Joliet #29 ash ponds are the cause of the alleged groundwater impacts, other than the conclusory statement that "[o]perations at ash impoundments have resulted in violations of the Groundwater Quality Standards." The VN also provides no information concerning the nature or type of corrective action which the Agency may deem acceptable to address the alleged violations. The Agency is not pursuing this matter in a way that allows MWG to prepare an effective response or a Compliance Commitment Agreement.

This letter provides a detailed response to each of the alleged violations in Attachment A of the VN to the extent possible given the lack of information provided in the VN. It also advances MWG's general objection to the legal sufficiency of the notice of the alleged violations contained in the VN. MWG maintains that the Illinois EPA cannot prove the alleged violations in the VN, and does not, by submitting this response, make any admissions of fact or law, or waive any of its defenses to those alleged violations.

I. General Objection to the Legal Sufficiency of the Violation Notice

The VN does not comply with the requirements of Section 31 of the Act. Section 31(a)(1)(B) of the Act requires the Illinois EPA to provide a detailed explanation of the violations alleged. 415 ILCS 5/31(a)(1)(B). Under the Act, MWG is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation.[3] The VN fails to provide adequate notice to MWG of either the alleged violations or the activities which the Agency believes are necessary to address them. The VN states that "[o]perations at ash impoundments have resulted in violations of the Groundwater Quality Standards...." (Violation Notice, Attachment A, page 1, 1st paragraph) No further description of the alleged "ash impoundments" is provided in the VN. Three ash impoundments exist at the Joliet #29 Station. It is impossible to identify from the contents of the VN what operations or activities at the Joliet #29 Station the Agency is claiming are the cause of the alleged violations, including

[3] *Citizens Utilities Co., v. IPCB*, 9 Ill.App.3d 158, 164, 289 N.E.2d 642, 648 (2nd Dist., 1972) (a person is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation). *See also, City of Pekin v. Environmental Protection Agency*, 47 Ill.App.3d 187, 192, 361 N.E.2d 889, 893 (3rd Dist., 1977.

whether it is the Agency's position that each of the Station's ash ponds, or only certain ones, have caused the alleged violations. Absent an accurate or complete description of the activities or operations that the Agency is alleging caused the violations, it is also not possible to identify what action might be necessary to resolve them. Attachment A to the VN states: "Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation." However, no such explanation is provided in the VN. In sum, the VN fails to comply with the legal requirement that it include a detailed explanation of the violations alleged, does not inform MWG of the specific conduct constituting the alleged violations and provides no notice of what is necessary to resolve the alleged violations. The Section 31 process is based on fundamental principles of due process. MWG should not have to speculate about what activities it allegedly engaged in that caused the violations and how to address them to resolve the alleged violations. In the absence of this material, statutorily-required information, the Agency also has effectively denied MWG's statutory right to formulate an acceptable Compliance Commitment Agreement to submit for the Agency's approval.

The VN is also deficient regarding its explanation of what laws MWG has allegedly violated. The VN solely alleges that MWG violated "Section 12" of the Act. 415 ILCS 5/12. It does not provide any further specification as to which of the provisions of Section 12 MWG has allegedly violated. Sec. 12 of the Act has nine subsections, consecutively numbered (a) through (i). Each of these subsections describes a different and distinct water pollution prohibition. 415 ILCS 5/12(a)-(i). However, the VN issued to MWG does not identify which of the nine subsections the Agency is alleging MWG violated. Based on the contents of Section 12 of the Act, the Agency is taking the position that MWG violated each and every one of the provisions of Section 12. Based on the relevant facts, it is highly unlikely that this is the intent of the VN. Therefore, the VN's general reference to Section 12 of the Act, without any other explanation, is not a "detailed explanation of the violations." This is another example of how the VN fails to provide MWG with adequate notice as a matter of law and thereby violates MWG's due process rights.[4]

By failing to provide a detailed explanation of the violations and any explanation of the activities that the Illinois EPA believes may resolve the violations, , the Agency has effectively denied MWG the opportunity to properly and thoroughly respond to the alleged violations and to make an acceptable offer to resolve them. The VN's deficiencies conflict with the intent and purpose of Section 31 of the Act, which is to avoid unnecessary litigation. Therefore, MWG respectfully requests that Illinois EPA rescind the VN and suspend any further enforcement action unless and until it has taken the necessary actions to correct and cure the legal deficiencies in the notice of the alleged violations by following the statutory requirements under Section 31(a)(1)(B) of the Act. 415 ILCS 5/31(a)(1)(B).

[4] *See, e.g., Grigoleit Co. v. IEPA*, PCB 89-184, slip op at p. 11 (November 29, 1990) (Failure to notify permit applicant of alleged violations and provide an opportunity to provide information in response was a violation of applicant's due process rights)

II. Response to Alleged Violations in the VN

Subject to and without waiving its objections to the legal sufficiency of the VN, MWG has attempted to discern the legal basis for the alleged violations and to prepare this response in defense to those allegations based on various assumptions. MWG reserves the right to supplement this response, including by submitting a separate response should the Agency provide the legally required notice under Section 31 of the Act.

The VN alleges that the "[o]perations at ash impoundments" at MWG's Joliet #29 Station have resulted in violations of certain of the Groundwater Quality Standards at the respective monitoring wells identified in the VN. (Violation Notice at Attachment A) MWG believes the Agency's use of the term "ash impoundments" is intended to refer to the structures that the Joliet #29 Station commonly refers to as "ash ponds;" that is how they will be referred to here. The Agency further alleges that the alleged violations of the groundwater quality standards in 35 Ill. Admin. Code Part 620 also constitute violations of Section 12 of the Act and the underlying groundwater regulations in 35 Ill. Admin. Code Part § 620. It is undisputable that the Agency has the burden to prove these alleged violations both in proceedings before the Illinois Pollution Control Board ("Board") and in the courts.[5] However, the groundwater monitoring data on which the Agency primarily, if not solely relies, to assert these violations is not sufficient, legally or technically, to prove that any "ash impoundment" is the source of the alleged groundwater impacts. Further, based on the existing condition of the ash ponds, it is not likely that they are the source of the alleged impacts.

To support its defense to the alleged violations, MWG has set forth below a description of: (1) the condition and use of the ash ponds at Joliet #29; (2) the hydrogeologic assessment performed at the Joliet #29 Station; (3) the site hydrology; and (4) why the analytical data from the monitoring wells does not establish that the ash ponds are the source of the alleged exceedances of the groundwater standards.[6] In addition, for certain of the alleged exceedances, additional information not considered by the Agency shows that it is either more likely, or at least as likely, that the source of the alleged exceedance is something other than the ash ponds. In either case, the Agency cannot sustain its burden to prove the alleged violations.

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[5] Section 31(e) of the Act provides in relevant part: "In hearings before the Board under this Title, the burden shall be on the Agency...to show either that the respondent has caused or threatened to cause...water pollution or that the respondent has violated or threatens to violate any provision of this Act or any rule or regulation of the Board or permit or term or condition thereof." 415 ILCS 5/31(e); *Citizens Utilities v. IPCB*, 9 Ill. App. 3d 158, 164, 289 N.E.2d 642, 646 (1972) (the Agency has the burden of proof in enforcement actions).

[6] In preparing this response, MWG closely reviewed the groundwater monitoring reports previously submitted to the Agency for the monitoring wells which are identified in the VN. In the course of this review, some data transcription errors were found in the previously submitted data tables included in the groundwater monitoring reports. Copies of the corrected data tables are enclosed. The tables are annotated to identify the nature of the corrections made to the previously submitted reports. However, none of the transcription errors affected the values that are the subject of and reported in the VN.

A. The Condition of the Ash Ponds

For several reasons, the construction and operation of the Joliet #29 ash ponds makes it unlikely that they are the cause of the alleged violations. The construction and operation of the ponds minimizes the potential for leakage from the ash ponds to groundwater.

First, the Joliet #29 ash ponds, known as Ponds 1, 2 and 3, are not ash disposal sites. The ash that enters the ponds is routinely removed. Ponds 1 and 2 are used both intermittently and interchangeably with each other. Their use is intermittent because under normal station operations, the ash wastewater generated by Joliet #29 is conveyed mechanically directly to the on-site, permitted Lincoln Stone Quarry Landfill without entering any of the ash ponds. The Lincoln Stone Quarry Landfill is the disposal site, not the ash ponds. However, because there are temporary periods of time when the ash wastewater conveyance system is not operational, due to maintenance reasons, either Pond 1 or Pond 2 is temporarily used until the ash wastewater conveyance system is brought back on line. During those times when ash wastewater is entering Pond 1 or Pond 2, the wastewater exits one of those ponds and then enters Pond 3. Pond 3 provides additional settling time for any residual ash. However, as is evident from visually observing the influent to Ponds 1 and 2 versus the influent to Pond 3, most of the ash settles out in Pond 1 or Pond 2 before flowing to Pond 3. Thus, the amount of ash that accumulates in Pond 3 is minimal. As necessary, the ash that accumulates in the ash ponds is periodically removed. However, because the use and purpose of Pond 3 as an ash settling basin is so minimal, and the rate of ash accumulation is so slow, it has not been necessary to remove ash from Pond 3 during the years that MWG has operated Joliet #29.

Second, unlike many other ash ponds in Illinois, the three ash ponds at Joliet #29 are not simply earthen ponds with no protection against the migration of constituents into the land or groundwater. Each of the Joliet #29 ash ponds is lined to prevent releases to groundwater. Ponds 1 and 2 were relined in 2008 with a high-density polyethylene ("HDPE") liner, overlain by a 12-inch sand cushion layer and a 6-inch limestone warning layer. HDPE liners have a permeability of approximately 10^{-13} cm/sec. Notably, this is a greater degree of permeability than is required in the Illinois Pollution Control Board (the "Board") regulations for constructing a new solid waste landfill where, unlike the ash ponds, waste materials are disposed of on a permanent basis. *See* 35 Ill. Admin. Code § 811.306(d). Pond 3 is lined with a liner of two 6-inch lifts of Poz-o-Pac.[7] The permeability of the Poz-o-Pac liner is 10^{-7} cm/sec, the same degree of permeability that is required in the Board regulations for constructing a new landfill. *See* 35 Ill. Admin. Code § 811.306(d). All of the liners at Joliet #29 achieve or exceed the level of permeability which the Illinois regulations expressly recognize is sufficient to prevent the release of constituents to the environment. Accordingly, the facts regarding the liners in place for these three ash ponds support the conclusion that the ash ponds are not the source of the exceedances of groundwater standards alleged in the VN.

[7] Poz-o-Pac is an aggregate liner similar to concrete.

The VN contains no facts concerning the condition of the Joliet #29 ash ponds that would indicate that they are allowing ash constituents to escape from the ponds. For example, the Agency does not contend that there are any breaches in the integrity of the liners that are allowing ash constituents to be released to the groundwater. The Agency similarly does not claim that the liners are inadequate to prevent the migration of constituents. In the absence of such evidence, it is certainly far more likely than not that the existing ash ponds at the Joliet #29 Station are not the source of the groundwater impacts alleged in the VN.

B. Hydrogeologic Assessment and Site Hydrology

The VN is based on the flawed premise that the hydrologic assessment which the Agency directed MWG to perform in the vicinity of the ash ponds would be sufficient to identify the ash ponds as the source of any elevated levels of constituents in the groundwater. This is simply not the case. The results of the hydrogeologic assessment at best give rise to more questions about the source of the alleged groundwater impacts, and do not prove that the existing ash ponds are the source of those impacts.

The results of the hydrogeologic assessment show a relatively uniform groundwater flow system. Groundwater flows from north to south, consistent with the expected flow direction due to the proximity to the south of Joliet #29 of the Des Plaines River. There does appear to be some convergence of flow in the vicinity of wells MW-2 and MW-5. The elevation of the Des Plaines River correlates to the groundwater elevations, indicating that the River is in direct hydraulic connection with the shallow aquifer. Based upon this groundwater flow direction, groundwater wells MW-8, MW-10, and MW-11 are upgradient wells, and groundwater wells MW-1 through MW-7 and MW-9 are down-gradient wells.

A comparison of the monitoring results from the upgradient (MW-8, MW-10, and MW-11) and down-gradient (MW-1 – MW-7, MW-9) wells does not support the Agency's contention that the ash ponds are the source of the alleged groundwater impacts. The distribution and observation of parameter concentrations is not consistent with coal ash ponds being the source of the impacts identified in the VN. For most of the parameters cited in the alleged violations, the distribution and observation of parameter concentrations is random and inconsistent. As more fully explained below, there are isolated monitoring well results showing exceedances of a given parameter that are not seen in any of the other eleven monitoring wells (*e.g.,* boron, sulfate, total dissolved solids, antimony). These random and isolated detections are not consistent with the ash ponds being the source of the exceedances. Moreover, isolated exceedances occurring within a period of six, consecutive quarterly monitoring events do not confirm the existence of actual groundwater impacts above the applicable standards. For other parameters, such as iron and manganese, the monitoring results are far more consistent with the presence of a reducing environment in the area of groundwater where these elevated levels were detected. Finally, the alleged exceedances for chloride are more logically explained by road salt seeping into the groundwater from U.S. Route 6 to the north, than due to the operation of the ash ponds. Each of these points is discussed in further detail below.

While boron is a primary indicator of potential coal ash impacts to groundwater, there are only two alleged exceedances of boron in monitoring well MW-11. This well is an upgradient monitoring well. These alleged boron exceedances occurred during two consecutive quarterly sampling events, but the boron levels detected in the next three, consecutive quarterly sampling events were all below the boron groundwater standard. Further, when all boron concentrations reported for the remaining 10 monitoring wells are evaluated, there is no indication of elevated boron concentrations that exceed, or even approach exceeding, the boron groundwater standard. There also is no increase in the levels of boron from monitoring wells that are upgradient of the ash ponds to the downgradient monitoring wells. The boron monitoring results clearly fail to support the conclusion that the operation of the ash ponds is causing the alleged groundwater impacts. Absent this evidence, and given that these ponds are lined with HDPE, the evidence supports the conclusion that the ash ponds have not caused the alleged groundwater impacts.

The monitoring data's distribution of sulfate detections from upgradient to downgradient also does not support the allegation that the ash ponds are causing the alleged groundwater impacts. The sulfate levels detected in all of the monitoring wells, with the limited exception of MW-9, are not only low level concentrations but also are similar levels in both the upgradient and downgradient monitoring wells. Monitoring well MW-9 is the only monitoring well where any sulfate exceedances were reported and there are no elevated boron concentrations reported for that well. The isolated, elevated sulfate concentrations in MW-9 are not an indication that the source is the ash ponds. Moreover, there are various, other potential sources of elevated sulfate concentrations in groundwater, both natural and anthropogenic, that are wholly unrelated to coal ash that could be causing the alleged groundwater impacts. Similarly, the alleged exceedances of total dissolved solids ("TDS") also were only observed at MW-9 and not in any of the other monitoring well locations. Again, these geographically isolated exceedances, without the accompanying presence of typical coal ash impact indicators, are technically and legally insufficient to support the conclusion that the ash ponds are the source.

Monitoring well MW-9 also had exceedances of iron and manganese. Both of these constituents are naturally-occurring metals in the Joliet area due to geochemical conditions. The alleged exceedances for iron and manganese are more likely the result of chemical conditions in the groundwater at Joliet #29. The oxidation-reduction potential around MW-9 is consistently low, showing a strongly reducing environment.[8] The field parameter measurements at well MW-9 consistently indicate low dissolved oxygen (DO) and negative oxidation-reduction potential (ORP) which is indicative of a reducing environment. Typically in reducing environments, metals such as iron and manganese can be elevated depending on the associated mineralogy of the local sediments.[9] The oxidation-reduction potential (ORP) data collected in the field during the quarterly sampling is also consistent with the presence of a strongly reducing

[8] See attached Table 1: Field Parameter Data.
[9] Thomas, Mary Ann. The Association of Arsenic with Redox Conditions, Depth, and Ground-Water Age in the Glacial Aquifer System of the Northern United States. Scientific Investigations Report 2007-5036, U.S. Geological Survey, Reston, VA. 2007; "Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater" EPA/600/R-98/128, September 1998. Table B.3.3.

environment. ORP levels at MW-9 are consistently the lowest levels found at the site. Therefore, the data shows that it is more likely than not that the elevated levels of these metals detected in the monitoring data are naturally occurring and unrelated to the operation of the ash ponds.

Manganese was also observed once in two other wells, MW-4 and MW-7, in the first quarterly sampling event. These manganese levels have not been seen in any of the subsequent five, consecutive sampling events. In fact, the subsequent MW-4 and MW-7 quarterly sampling results consistently indicate manganese concentrations approximately one order of magnitude or more lower than those detected in the first quarterly sampling event. The complete data set of manganese monitoring results from these wells strongly indicates that the two single manganese detections are not representative of actual groundwater conditions.

Turning to the antimony monitoring results, the alleged antimony exceedance identified in the VN occurred in monitoring well MW-2. There were also two antimony exceedances at well location MW-3 during the last two quarterly sampling events which were not included in the VN. As with other trace metals, there can be various potential sources of antimony, both natural and anthropogenic. In the absence of elevated concentrations of typical ash leachate parameters such as boron, exceedances of antimony cannot be ascribed to an ash source, much less to a release from the ash ponds.

Finally, the Agency's allegation that the ash ponds are the source of the elevated chloride levels detected in the groundwater is also unsubstantiated. A careful review of the chloride data shows that the source of the elevated chloride levels is unrelated to the ash ponds. The chloride exceedances are generally dispersed throughout the site at almost equivalent concentrations. U.S. Route 6 is adjacent to the north, upgradient of the ash ponds. Moreover, most of the exceedances of the chloride Class I groundwater standards occurred in the winter and spring sampling events.[10] It is well documented that both shallow groundwater and surface water commonly exhibit higher concentrations of chloride in the spring due to rain and snow melt transporting dissolved road salt.[11] The distribution in the groundwater monitoring wells clearly indicates that the ash ponds are not contributing to the chloride exceedances.

In sum, the construction of the ponds with low permeability liners, the lack of elevated boron concentrations across the site and the inconsistent pattern of the constituent concentrations clearly do not support the Agency's contention that the ash ponds are the source of these constituents. The data are more consistent with the opposite conclusion, namely that the ash ponds are not the source of the alleged exceedances.

[10] Seventeen of the twenty-three chloride exceedances occurred during the December and March sampling events.
[11] Mullaney, John R., *et al*, Chloride in Groundwater and Surface Water in Areas Underlain by the Glacial Aquifer System, Northern United States, Scientific Investigations Report 2009-5089, U.S. Geological Survey, Reston, VA. 2009. Table 5.

C. The Joliet #29 Ash Ponds Are Not Causing Groundwater Exceedances

Because the Illinois EPA failed to specify which of the provisions of Section 12 of the Act MWG allegedly violated, MWG has had to speculate to identify the potential Section 12 violations this response needs to address. As stated above, MWG objects to the vagueness of, and legally deficient notice provided by, the VN and reserves its right to responds further when and if the Agency properly identifies the provisions of Section 12 on which it is relying.

For purposes of this response, based upon the regulations cited by the Agency in the VN, MWG has assumed that the Agency's alleged violations of Section 12 are limited to Sections 12(a), which prohibits causing or allowing water pollution, and to Section 12(d), which prohibits causing or allowing the creation of a water pollution hazard. 415 ILCS 5/12(a), (d). Based on these assumptions regarding the substance of the Agency's alleged violations, MWG submits that it cannot show that the ash ponds at Joliet #29 caused or allowed water pollution or created a water pollution hazard.

Overall, the analytical results show that there is no relationship between the ash ponds and the groundwater exceedances. The alleged exceedances of the Class 1 groundwater standards are not consistent with the ash ponds being the source. Boron, a primary indicator for coal ash constituents, is elevated above the groundwater standards at only one out of eleven monitoring wells. The most telling and persuasive data is the complete absence of any boron exceedances from any of the monitoring wells located downgradient of the ash ponds. Certain of the alleged exceedances for other constituents only occur at monitoring wells that are upgradient wells to the ash ponds. Still other alleged exceedances, such as for chloride, are more likely explained by other causes, such as the use of road salt. The monitoring data plainly does not support the Agency's contention that the operation of the "ash impoundments" has resulted in the alleged violations.

To show a violation of Section 12(a) and 12(d), there must be a showing not only of the presence of a potential source of contamination, but also that it is in sufficient quantity and concentration to render the waters harmful. *Bliss v. Illinois EPA,* 138 Ill. App. 3d 699, 704 (1985) ("mere presence of a potential source of water pollutants on the land does not necessarily constitute a water pollution hazard"). In other words, there must be a causal link between the potential source and the water or groundwater. The groundwater monitoring data on which the Agency relies does not establish this essential causal link between the ash ponds and the groundwater. Therefore, the Agency has failed to meet its burden to prove that the ash ponds are the cause of the alleged exceedances of the groundwater standards as required to prove a violation of Sections 12(a) or 12(d) of the Act. 415 ILCS 5/12(a), (d).

The Agency also alleges violations of the groundwater quality regulations based on exceedances of the groundwater quality standards in 35 Ill. Admin. Code § 620.401. There is no violation here of Section 620.401. Section 620.401 solely provides the legal criteria that groundwater must meet the standards appropriate to the groundwater's class. It is a foundational regulation, allowing for different classes of groundwater to meet different groundwater

standards. It is not a prohibition regulation. There is no conduct prohibited by this section of the regulations in which MWG is alleged to have engaged. MWG cannot and did not violate Section 620.401.

The remaining alleged groundwater regulation violations, Sections 620.115, 620.301, 620.405, and 620.410 of the Board Regulations, are all based on the Agency's contention that MWG's operation of the ash ponds has caused the exceedances of the groundwater standards detected in the monitoring data. To sustain these allegations, the Agency must show that MWG caused a discharge of the subject constituents from ash ponds which in turn caused the exceedances of the groundwater standards.[12] The relevant facts and circumstances do not support either conclusion.

The use and condition of the ash ponds does not support a finding that they are releasing constituents to the groundwater. They are not disposal sites. They are only operated intermittently, when the wastewater line that transports ash to the permitted Lincoln Quarry Landfill is unavailable. The ash that accumulates in Ponds 1 and 2 is periodically removed, and so little ash accumulates in Pond 3 that it has not been necessary to remove it since MWG started operating the Joliet #29 Station. The linings in all of the ponds are constructed of materials that provide sufficient permeability, meeting or exceeding accepted regulatory guidance for solid waste landfills, to prevent the release of constituents. Finally, pursuant to the terms of the Joliet #29 Station's NPDES Permit, these ash ponds are part of the flow-through wastewater treatment process at the station. MWG's operation of the ash ponds has been carried out in accordance with the terms and conditions of the NPDES Permit. Under Section 12(f) of the Act, compliance with the terms and conditions of any permit issued under Section 39(b) of the Act is deemed compliance with this subsection.

Similarly, the groundwater data on which the Agency relies does not provide a sufficient scientific or technical evidentiary basis on which to conclude that the ash ponds are causing the alleged groundwater exceedances. The essential "causal link" between the ash ponds and the elevated constituents in the groundwater is missing. The groundwater downgradient of the ash ponds does not show the anticipated constituents associated with a release, or any other indication that the ash ponds are causing the exceedance. For certain parameters, such as chloride, the data clearly point to other, unrelated causes.

Because the ash ponds have not been shown to have caused a release of any contaminants that are causing the groundwater exceedances, the Agency's VN does not support its claims that MWG has violated Sections 620.405 or 620.301 of the Board regulations. Accordingly, MWG also has not violated Section 620.115 of the Board regulations.

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[12] *See People of the State of Illinois v. ESG Watts, Inc.*, PCB 96-107 slip op. at p. 41 (February 5, 1998) (By finding the respondent caused a discharge of constituents into the groundwater causing a violation of the Class II Groundwater standards, the Board found the respondent also violated 35 IAC §§ 620.301 and 620.115)

III. Compliance Commitment Agreement

This VN should not have been issued. Given the absence of proof that the ash ponds are the cause of the alleged groundwater exceedances, the Agency's request for a Compliance Commitment Agreement (CCA) to address the ash ponds is an attempt to compel MWG to conduct unnecessary corrective action to resolve the alleged violations.

Moreover, with the pending federal regulatory process to enact regulations for the design and operation of ash ponds, it is prudent to await the outcome of the proposed federal regulations to determine whether any changes to the ash ponds construction or operation are required by those regulations. The Agency itself has previously advanced this position. In 2010, the Agency's Steven Nightingale testified before the Illinois Pollution Control Board that the Board should consider initiating a temporary moratorium on the closure of coal ash impoundments because of the U.S. EPA's intention to regulate them. (*See In the Matter of Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill.Adm.Code Part 840.101 Through 840.152*, Docket R09-21 (October 7, 2010) at p. 64) On behalf of the Agency, Mr. Nightingale told the Board that if industry had to take action in the interim, it "could end up expending substantial money and resources only to find they are subject to additional and/or different closure requirements for those units." (*Id.*) The Agency's pursuit of this enforcement action, particularly given the deficiencies in its alleged evidence, also threatens to force MWG to take actions that may conflict with or otherwise differ from the requirements in the upcoming federal regulations.

As the hydrogeologic assessment of the Joliet #29 ash ponds showed, there is no threat to human health presented by the alleged exceedances of the groundwater standards. The hydrogeologic assessment investigated the presence of potable water sources within a 2,500-foot radius of the site. Seventeen groundwater wells are installed within 2,500 feet of the site. Two of the wells, which are owned by MWG, are located downgradient of the ash ponds. These wells are screened more than 1,500 feet deep, drawing water from a deep aquifer below the Maquoketa shale confining unit. The Maquoketa shale is an aquitard that separates the shallow groundwater in the unconsolidated units and the Silurian dolomite from the underlying aquifers.[13] Both of the MWG wells are regularly sampled for potable water constituents, and the sampling results have consistently been in compliance with potable water regulations.[14] Shallow groundwater at the site discharges to the Des Plaines River. The nearest downgradient water supply intake in the Des Plaines River, a headwater of the Illinois River, is located at Peoria, approximately 127 miles downstream. The Des Plaines River near the Joliet #29 Station is not used as a drinking water source. In the absence of any potable groundwater receptors or use, groundwater at the Joliet #29 site does not pose any risk to human health. Accordingly, awaiting the outcome of the federal regulatory proposal is clearly appropriate under these circumstances.

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[13] Visocky, Adrian P., *et al.* Geology, Hydrology, and Water Quality of the Cambrian and Ordovician System in Northern Illinois. Illinois State Geological Survey, Illinois State Water Survey. 1985. App. C.

[14] See previously submitted Hydrogeologic Assessment of Midwest Generation Electric Generation Stations: Will County Station, Waukegan Station, Joliet 29 Station, Crawford Station, Powerton Station.

Because MWG's preference is to cooperate with the Agency in this matter, MWG presents here a proposed CCA that should be acceptable based on the relevant facts and circumstances. The proposed CCA terms are as follows:

A. The ash ponds will not be used as permanent disposal sites and ash will continue to be removed from the ponds on a periodic basis.

B. The ash ponds will be maintained and operated in a manner which protects the integrity of the existing liners. During the removal of ash from the ponds, appropriate procedures will be followed to protect the integrity of the existing liners, including operating the ash removal equipment in a manner which minimizes the risk of any damage to the liner.

C. During the ash removal process, visual inspections of the ponds will be conducted to identify any signs of a breach in the integrity of the pond liners. In the event that a breach of the pond liners is detected, MWG will notify the Agency and will implement the correction action plan.

D. MWG will continue to monitor the groundwater through the existing eleven groundwater monitoring wells and report its findings to Illinois EPA. MWGen reserves the right to request the Agency's approval of a cessation of all or some of the monitoring requirements based on future monitoring results.

E. MWG will continue to monitor the development of the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640. When the final rule is issued, MWG will promptly notify Illinois EPA how it will comply with the new Federal Rules.

This letter constitutes MWG's response to and proposed CCA for the Violation Notice W-2012-00059. MWG also reserves the right to raise additional defenses and mitigation arguments as may be necessary, in defense of the allegations listed in the Violation Notice in the event of any future enforcement. We look forward to discussing the above information further at the soon to be scheduled meeting with the Agency's representatives. Please contact me to schedule a mutually convenient date for the meeting.

Very truly yours,

Susan M. Franzetti
Counsel for Midwest Generation, LLC

Enclosures

cc: Maria L. Race, Midwest Generation, LCC

Table 3
Groundwater Analytical Results - AMENDED JULY 2012
Joliet Station #29, Illinois
Midwest Generation
21253.034

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)
Chemical Name		Class I*	12/6/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12	12/6/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12
Antimony	Metals 6020	0.006	0.0043	NS	ND	NS	NS	NS	**0.012**	NS	0.0042	0.0032	ND	ND
Arsenic	Metals 6020	0.05	0.0011	NS	0.0014	NS	NS	NS	ND	NS	ND	ND	ND	ND
Barium	Metals 6020	2.0	0.13	NS	0.14	NS	NS	NS	0.082	NS	0.081	0.1	0.12	0.12
Beryllium	Metals 6020	0.004	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	NS	0.001	NS	NS	NS	ND	NS	ND	ND	ND	ND
Copper	Metals 6020	0.65	0.0032	NS	0.0025	NS	NS	NS	0.0032	NS	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Manganese	Metals 6020	0.15	ND	NS	ND	NS	NS	NS	ND	NS	ND	0.0025	ND	ND
Mercury	Mercury 7470A	0.002	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0034	NS	0.0029	NS	NS	NS	0.0033	NS	ND	0.0027	0.0023	ND
Selenium	Metals 6020	0.05	ND	NS	ND	NS	NS	NS	ND	NS	ND	0.0038	0.0055	0.0048
Silver	Metals 6020	0.05	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Boron	Metals 6020	2	0.31	NS	0.29	NS	NS	NS	0.31	NS	0.35	0.44	0.74	0.22
Sulfate	Dissolved 9038	400	180	NS	81	NS	NS	NS	190	NS	67	110	150	110
Chloride	Dissolved 9251	200	140	NS	170	NS	NS	NS	140	NS	**230**	140	140	280
Nitrogen/Nitrate	Nitrogen By calc	10	1.9	NS	2.9	NS	NS	NS	3.1	NS	1.8	2.2	2.9	6.4
Total Dissolved Solids	Dissolved 2540C	1,200	590	NS	670	NS	NS	NS	600	NS	720	690	750	800
Flouride	Dissolved 4500 FC	4	0.45	NS	0.43	NS	NS	NS	0.62	NS	0.58	0.54	0.51	0.53
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	NS	ND	NS	NS	NS	ND	NS	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	1.9	NS	2.9	NS	NS	NS	3.1	NS	1.8	2.2	2.9	6.4

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
NS- not sampled
mg/L- milligrams per liter

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Table 3
Groundwater Analytical Results - AMENDED JULY 2012
Joliet Station #29, Illinois
Midwest Generation
21253.034

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)
Chemical Name		Class I*	12/7/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12	12/7/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12
Antimony	Metals 6020	0.006	0.004	ND	ND	0.0065	**0.016**	**0.013**	ND	ND	ND	ND	0.0067	0.0057
Arsenic	Metals 6020	0.05	ND	0.0011	ND	0.0012	0.0016	0.0014	ND	ND	ND	ND	0.0011	ND
Barium	Metals 6020	2.0	0.089	0.085	0.092	0.081	0.084	0.081	0.065	0.067	0.059	0.06	0.069	0.07
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	0.00074	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	0.0013	0.0013	ND	ND	ND	ND	ND	ND	ND	0.0018	0.0028	0.0026
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.1	0.048	ND	0.0076	0.008	0.0095	**0.33**	0.048	0.018	0.066	0.029	0.038
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.011	0.0065	ND	0.0041	0.006	0.0046	0.0067	0.0037	ND	0.0029	0.0038	0.0037
Selenium	Metals 6020	0.05	ND	0.005	ND	ND	ND	ND	0.0025	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	0.00091	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	0.24	0.36	0.46	0.24	0.23	0.26	0.46	0.37	0.38	0.25	0.34	0.29
Sulfate	Dissolved 9038	400	120	160	120	120	160	190	300	140	84	74	170	210
Chloride	Dissolved 9251	200	**260**	**240**	**300**	160	**260**	**250**	**270**	**270**	**250**	150	200	**210**
Nitrogen/Nitrate	Nitrogen By calc	10	ND	1	2.1	1.1	0.79	ND	0.81	1.6	2.7	1.6	1.4	0.62
Total Dissolved Solids	Dissolved 2540C	1,200	930	1,100	1,000	930	1,100	1,000	1,100	1,000	890	770	970	930
Flouride	Dissolved 4500 FC	4	0.43	0.4	0.41	0.31	0.4	0.39	0.49	0.38	0.44	0.37	0.44	0.41
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	1	2.1	1.1	0.79	ND	0.81	1.6	2.7	1.6	1.4	0.62

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
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Table 3
Groundwater Analytical Results - AMENDED JULY 2012
Joliet Station #29, Illinois
Midwest Generation
21253.034

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)
Chemical Name		Class I*	12/7/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12	12/7/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	0.004	0.0035	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	ND	0.0011	0.0011	ND	ND	0.0015	ND	ND	0.0018	0.0016
Barium	Metals 6020	2.0	0.061	0.092	0.053	0.053	0.062	0.069	0.075	0.12	0.082	0.094	0.11	0.13
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	0.0016	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	0.0019	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.0065	ND	ND	ND	ND	ND	0.14	0.033	ND	0.036	0.024	0.015
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	ND	ND	ND	0.0021	ND	ND	0.0056	0.0025	ND	ND	ND	ND
Selenium	Metals 6020	0.05	ND	0.0072	ND	ND	0.005	ND	0.0029	0.0034	ND	ND	0.0054	0.0051
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	0.00077	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	0.42	0.52	0.47	0.57	0.49	0.54	0.32	0.44	0.32	0.27	0.3	0.25
Sulfate	Dissolved 9038	400	110	160	100	140	140	190	140	140	87	100	130	110
Chloride	Dissolved 9251	200	150	**240**	**220**	120	190	**210**	130	**270**	140	140	130	**240**
Nitrogen/Nitrate	Nitrogen By calc	10	ND	1.2	1.3	1.1	1.5	0.33	ND	1.3	0.91	0.31	0.36	ND
Total Dissolved Solids	Dissolved 2540C	1,200	750	990	850	800	900	930	650	1,000	650	620	710	800
Flouride	Dissolved 4500 FC	4	0.4	0.34	0.39	0.28	0.34	0.32	0.4	0.36	0.44	0.29	0.44	0.36
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	1.2	1.3	1.1	1.5	0.33	ND	1.3	0.91	0.31	0.36	ND

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
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Groundwater Analytical Results - AMENDED JULY 2012
Joliet Station #29, Illinois
Midwest Generation
21253.034

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)
Chemical Name		Class I*	12/7/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12	12/6/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.001	ND	ND	ND	0.0014	0.001	ND	ND	ND	ND	ND	ND
Barium	Metals 6020	2.0	0.13	0.11	0.072	0.092	0.11	0.13	0.054	0.055	0.026	0.048	0.057	0.049
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	0.0025	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	3.8	ND	ND	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.29**	0.014	ND	0.08	0.0073	0.015	0.0051	0.0026	0.017	ND	ND	0.0042
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0045	ND	ND	0.014	ND	ND	0.0025	ND	ND	0.012	ND	ND
Selenium	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	**0.51**	0.39	0.25	0.29	0.35	0.3	0.29	0.16	0.12	0.2	0.16	0.13
Sulfate	Dissolved 9038	400	250	120	85	110	160	140	210	87	52	120	170	130
Chloride	Dissolved 9251	200	**430**	**320**	140	99	140	**300**	130	**350**	150	79	120	**410**
Nitrogen/Nitrate	Nitrogen By calc	10	ND	1.2	0.76	0.27	0.6	ND	0.33	2.2	1.9	0.95	0.86	ND
Total Dissolved Solids	Dissolved 2540C	1,200	1,200	970	580	650	780	870	670	990	580	690	800	1000
Flouride	Dissolved 4500 FC	4	0.36	0.31	0.35	0.27	0.35	0.31	0.51	0.36	0.45	0.25	0.31	0.38
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	1.2	0.76	0.27	0.6	ND	0.33	2.2	1.9	0.95	0.86	ND

Notes:
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Joliet Station #29, Illinois
Midwest Generation
21253.034

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)
Chemical Name		Class I*	12/6/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12	12/6/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0012	ND
Barium	Metals 6020	2.0	0.031	0.029	0.032	0.029	0.03	0.021	0.05	0.051	0.039	0.039	0.036	0.04
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	0.00059	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	0.0047	0.0034	0.0062	0.011	0.0075	0.0021	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	0.0026	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	0.18	**7.3**	3.8	1.5	**5.5**	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**1.1**	**1.6**	**0.95**	**0.82**	**0.66**	**1.3**	0.12	0.0076	ND	ND	ND	ND
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0094	0.0072	0.013	0.014	0.011	0.0054	0.0052	0.0029	ND	0.0087	0.0024	ND
Selenium	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	0.36	0.32	0.29	0.35	0.31	0.38	0.5	0.54	0.54	0.41	0.52	0.52
Sulfate	Dissolved 9038	400	**1,600**	**1,100**	**580**	**750**	130	**1,600**	130	130	89	100	190	250
Chloride	Dissolved 9251	200	140	**230**	**290**	190	190	170	200	**300**	7.1	170	180	180
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	0.97	0.36	0.22	ND	0.39	2.3	2.7	2.6	1.4	ND
Total Dissolved Solids	Dissolved 2540C	1,200	**2,600**	**2,400**	**1,500**	**1,700**	**2,400**	**2,600**	860	1,100	980	730	890	890
Flouride	Dissolved 4500 FC	4	0.61	0.52	0.47	0.39	0.5	0.45	0.43	0.39	0.42	0.41	0.45	0.41
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	ND	0.97	0.36	0.22	ND	0.39	2.3	2.7	2.6	1.4	ND

Notes:
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Midwest Generation
21253.034

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)
Chemical Name		Class I*	12/6/10	3/23/11	6/14/11	9/14/11	12/7/11	3/15/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0013	0.0016	ND	0.0016	0.0019	0.0017
Barium	Metals 6020	2.0	0.064	0.076	0.051	0.054	0.057	0.067
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.052	0.0047	ND	0.0053	0.0047	ND
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0022	ND	ND	ND	ND	ND
Selenium	Metals 6020	0.05	ND	0.0054	ND	0.0026	0.0033	0.0043
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	0.47	**2.6**	2.2	1.1	1.2	1.4
Sulfate	Dissolved 9038	400	140	150	110	110	160	140
Chloride	Dissolved 9251	200	160	**270**	**280**	86	140	**240**
Nitrogen/Nitrate	Nitrogen By calc	10	0.39	1.1	0.92	0.31	0.6	0.3
Total Dissolved Solids	Dissolved 2540C	1,200	770	1,000	710	590	790	850
Flouride	Dissolved 4500 FC	4	0.34	0.31	0.36	0.32	0.31	0.3
Nitrogen/Nitrite	Dissolved 4500 NO2	NA	ND	ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	0.39	1.1	0.92	0.31	0.6	0.3

Notes:
*Class 1 Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
NS- not sampled
mg/L- milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from bold to normal.
- Value has not changed; font has been changed from normal to bold.

Table 1

Field Parameter Data

Joliet #29 Station, Joliet, Illinois

Midwest Generation

21253.034

PATRICK ENGINEERING	Field Parameter Data - Joliet #29 Station							
Monitoring Well	Date	Time	Temperature (°C)	Conductivity (ms/cm^c)	Turbidity (NTU)	pH	DO (mg/L)	ORP (mV)
MW-01	3/23/2011	--	--	--	--	--	--	--
MW-01	6/14/2011	12:08	14.71	1.36	13.26	7.80	6.61	190.0
	6/14/2011	12:10	14.26	1.33	13.33	7.42	3.95	186.1
	6/14/2011	12:12	14.02	1.31	13.12	7.35	3.89	201.1
	6/14/2011	12:14	13.96	1.29	13.29	7.32	3.88	208.8
	6/14/2011	12:16	13.83	1.29	13.24	7.28	3.89	210.7
	6/14/2011	12:18	13.92	1.28	13.11	7.25	4.19	210.6
MW-01	9/14/2011	--	--	--	--	--	--	--
MW-01	12/7/2011	--	--	--	--	--	--	--
MW-01	3/15/2012	--	--	--	--	--	--	--
MW-02	3/23/2011	--	--	--	--	--	--	--
MW-02	6/14/2011	11:32	16.11	1.35	8.31	7.57	6.75	157.7
	6/14/2011	11:34	15.75	1.31	8.40	7.35	6.44	187.9
	6/14/2011	11:36	15.55	1.30	8.26	7.25	6.45	208.1
	6/14/2011	11:38	15.68	1.30	8.17	7.25	6.42	218.0
	6/14/2011	11:40	15.63	1.30	8.12	7.29	6.43	222.6
	6/14/2011	11:42	15.57	1.30	8.99	7.30	6.45	2227.3
MW-02	9/14/2011	11:20	18.87	0.97	9.24	7.41	5.25	-38.0
	9/14/2011	11:22	18.83	0.98	5.90	7.39	5.20	-36.0
	9/14/2011	11:24	18.83	0.98	3.38	7.39	5.25	-37.0
	9/14/2011	11:26	18.81	0.98	2.37	7.37	5.20	-36.0
	9/14/2011	11:28	18.78	0.98	3.51	7.38	5.19	-37.0
	9/14/2011	11:30	18.72	0.98	2.53	7.37	5.21	-36.0
MW-02	12/7/2011	11:16	12.81	0.91	111.70	7.42	6.11	55.0
	12/7/2011	11:18	13.06	0.91	144.10	7.41	5.76	63.0
	12/7/2011	11:20	13.41	0.91	240.50	7.38	5.74	69.0
	12/7/2011	11:22	13.30	0.91	32.78	7.39	5.85	74.0
	12/7/2011	11:24	13.11	0.90	30.67	7.37	5.86	78.0
	12/7/2011	11:26	13.04	0.90	27.41	7.37	5.91	81.0
MW-02	3/15/2012	--	--	--	--	--	--	--
MW-03	3/23/2011	12:30	12.73	1.76	1283.80	7.26	4.73	179.1
MW-03	6/14/2011	9:50	13.04	1.74	1534.29	7.41	7.78	223.5
MW-03	9/14/2011	9:54	11.90	1.15	1884.00	7.37	6.03	-51.0
MW-03	12/7/2011	9:48	10.94	1.19	1276.00	7.48	6.07	145.0
MW-03	3/15/2012	10:48	13.73	1.21	906.90	7.34	6.07	193.0
MW-04	3/23/2011	11:55	12.13	1.76	1277.40	7.15	6.80	196.1
MW-04	6/14/2011	9:20	12.59	1.50	1104.60	7.48	8.20	217.5
MW-04	9/14/2011	9:22	11.78	0.94	2892.00	7.42	7.17	-43.0
MW-04	12/7/2011	9:09	9.67	1.04	1131.00	7.56	6.95	135.0
MW-04	3/15/2012	10:14	12.52	1.06	2549.00	7.40	6.95	177.0
MW-05	3/23/2011	13:05	13.41	1.65	514.90	7.19	6.96	197.8
MW-05	6/14/2011	8:03	13.37	1.38	707.90	7.44	7.16	210.0
MW-05	9/14/2011	8:18	12.15	0.92	125.20	7.25	6.43	-26.0
MW-05	12/7/2011	8:08	11.23	1.02	862.10	7.44	6.07	125.0
MW-05	3/15/2012	7:45	13.52	1.19	1081.00	7.30	6.24	228.0
MW-06	3/23/2011	13:38	12.90	1.65	1284.40	7.51	7.44	183.7
MW-06	6/14/2011	13:25	14.26	1.05	431.20	7.71	6.82	203.8
MW-06	9/14/2011	12:33	12.73	0.77	2785.00	7.53	6.74	-65.0
MW-06	12/7/2011	12:40	13.70	0.87	1700.00	7.71	7.05	113.0
MW-06	3/15/2012	11:20	14.45	1.06	2353.00	7.57	7.47	210.0

Field Parameter Data
Joliet #29 Station, Joliet, Illinois
Midwest Generation
21253.034

Monitoring Well	Date	Time	Temperature (°C)	Conductivity (ms/cm^c)	Turbidity (NTU)	pH	DO (mg/L)	ORP (mV)
Field Parameter Data - Joliet #29 Station								
MW-07	3/23/2011	14:10	13.58	1.78	1292.20	7.50	7.02	183.2
MW-07	6/14/2011	13:50	12.92	1.02	1892.35	7.61	8.10	202.8
MW-07	9/14/2011	13:04	12.50	0.78	15.33	7.65	7.70	-82.0
MW-07	12/7/2011	13:08	13.07	0.89	1813.00	7.63	6.74	113.0
MW-07	3/15/2012	11:43	15.40	1.18	1164.00	7.53	7.23	175.0
MW-08	3/23/2011	9:55	13.06	1.80	1287.50	7.29	7.82	192.6
MW-08	6/14/2011	12:50	13.15	0.99	437.99	7.70	8.00	196.0
MW-08	9/14/2011	12:03	12.20	0.80	1485.00	7.32	6.06	-47.0
MW-08	12/7/2011	12:10	12.71	0.88	861.90	7.38	6.57	119.0
MW-08	3/15/2012	9:36	14.64	1.40	1275.00	7.49	7.68	130.0
MW-09	3/23/2011	11:10	12.78	3.30	214.00	7.19	7.49	102.2
MW-09	6/14/2011	10:55	16.53	2.57	14.22	7.15	1.12	-40.6
	6/14/2011	10:57	16.04	2.39	14.28	7.07	0.51	-42.3
	6/14/2011	10:59	16.00	2.32	14.14	7.03	0.49	-42.3
	6/14/2011	11:01	15.76	2.30	14.09	7.01	0.49	-29.3
	6/14/2011	11:03	15.78	2.28	13.73	7.01	0.47	-35.7
	6/14/2011	11:05	15.68	2.25	13.28	7.01	0.49	-43.5
MW-09	9/14/2011	10:42	16.36	1.99	46.97	6.87	0.34	-103.0
	9/14/2011	10:44	16.15	1.96	41.89	6.87	0.34	-108.0
	9/14/2011	10:46	16.06	1.94	46.33	6.87	0.34	-111.0
	9/14/2011	10:48	15.99	1.92	34.58	6.89	0.34	-111.0
	9/14/2011	10:50	15.96	1.90	40.02	6.89	0.34	-113.0
	9/14/2011	10:52	15.90	1.88	40.23	6.90	0.33	-114.0
MW-09	12/7/2011	10:30	11.66	1.62	200.50	7.29	1.14	-52.0
	12/7/2011	10:32	11.77	1.61	47.44	7.22	1.61	-43.0
	12/7/2011	10:34	12.35	1.60	96.37	7.21	0.38	-40.0
	12/7/2011	10:36	10.54	1.62	44.06	7.17	1.09	-36.0
	12/7/2011	10:38	11.49	1.58	36.28	7.16	0.72	-38.0
	12/7/2011	10:40	11.94	1.54	76.67	7.19	0.43	-40.0
MW-09	3/15/2012	8:45	14.29	2.31	1116.00	6.86	2.22	2.0
MW-10	3/23/2011	9:20	12.40	1.88	23.50	7.20	7.18	191.6
MW-10	6/14/2011	8:40	12.05	1.58	2312.96	7.40	8.70	210.0
MW-10	9/14/2011	8:48	11.23	0.98	2892.00	7.34	7.42	-37.0
MW-10	12/7/2011	8:40	11.26	0.99	1421.00	7.51	7.12	143.0
MW-10	3/15/2012	8:14	13.08	1.04	1362.00	7.35	7.08	210.0
MW-11	3/23/2011	8:46	13.49	1.69	1293.70	7.23	7.23	194.3
MW-11	6/14/2011	9:31	11.69	1.14	600.28	7.60	8.65	200.8
MW-11	9/14/2011	7:43	12.18	0.79	2426.00	7.38	6.28	-31.0
MW-11	12/7/2011	7:34	13.15	0.92	1751.00	7.46	6.74	136.0
MW-11	3/15/2012	7:08	14.22	1.12	1459.00	7.38	7.37	208.0

Notes:

°C	degrees Celcius
ms/cm^c	Microsiemens/Centimeters
NTU	Nephelometric Turbidity Units
mg/L	milligrams/Liter
mV	milliVolts

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 22

MWG LETTER OF RESPONSE TO THE POWERTON VIOLATION NOTICE

NIJMAN · FRANZETTI LLP
10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com

ennifer T. Nijman
n@nijmanfranzetti.com

Susan M. Franzetti
sf@nijmanfranzetti.com

July 27, 2012

VIA OVERNIGHT MAIL

Illinois EPA
Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice: Midwest Generation, LLC, Powerton Generating Station
Identification No.: 6282
Violation Notice No.: W-2012-00057

Dear Ms. Rhodes:

In response to the above-referenced June 11, 2012 Violation Notice ("VN"), received on June 14, 2012, this written response is timely submitted on behalf of the Midwest Generation, LLC ("MWG"), Powerton Generating Station ("Powerton"). MWG also requests a meeting with the Illinois Environmental Protection Agency ("Illinois EPA" or the "Agency") to discuss the VN and information provided in this response.

MWG regrets that the Illinois EPA decided to issue the VN because MWG has tried to work cooperatively with the Agency concerning the hydrogeologic assessment of the coal ash ponds at Powerton even though it had significant concerns and objections to how the VN has proceeded in this matter.[1] Nevertheless, MWG complied with the Agency's request that it conduct a hydrogeologic assessment of the area around the coal ash ponds and followed its requirements and comments for how the hydrogeologic assessment should be conducted, even though it was under no legal obligation to do so.[2] At no time however did MWG agree that the scope and nature of the hydrological assessment the Agency required it to perform would provide any basis for concluding that the ash ponds were impacting groundwater. The alleged

[1] *See, e.g.,* MWG (B. Constantelos) letter to Illinois EPA (A. Keller) dated July 15, 2009. MWG is also working cooperatively with the USEPA with regards to the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640, and is trying to coordinate the responses and requirements of both Agencies. USEPA first issued the proposed rules on June 21, 2010, and requested additional comments and information on Oct. 12, 2011. The additional information comment period closed on November 14, 2011, and MWG is now waiting for the USEPA to issue the final rule.

[2] MWG continues to reserve its objection that the Illinois EPA did not have the legal authority to require the hydrological assessments of the ash ponds under Sections 4 or 12 of the Illinois Environmental Protection Act (the "Act") or the Groundwater Quality Regulations, 35 Ill. Adm. Code Part 620.

violations in the VN are based solely on the results of the hydrogeologic assessment MWG performed at the Agency's request. The results of the hydrogeologic assessment do not show that the coal ash ponds at the Powerton Station are impacting the groundwater and do not provide the necessary evidence to support the alleged violations contained in the VN.

Well prior to the issuance of this VN, MWG met with the Agency to discuss the groundwater monitoring results and to discuss cooperatively how to proceed based on those results, including what additional actions, if any, the Agency believed were necessary. The Agency told MWG that it had not yet decided how to proceed. The next development was the issuance of the VN. The VN itself provides no information concerning the basis for the Agency's apparent conclusion that the ash impoundments are the cause of the alleged groundwater impacts, other than the conclusory statement that "[o]perations at ash impoundments [sic] have resulted in violations of the Groundwater Quality Standards." The VN also provides no information concerning the nature or type of corrective action which the Agency may deem acceptable to address the alleged violations. The Agency is not pursuing this matter in a way that allows MWG to prepare an effective response or a Compliance Commitment Agreement.

This letter provides a detailed response to each of the alleged violations in Attachment A of the VN to the extent possible given the lack of information provided in the VN. It also advances MWG's general objection to the legal sufficiency of the notice of the alleged violations contained in the VN. MWG maintains that the Illinois EPA cannot prove the alleged violations in the VN, and does not, by submitting this response, make any admissions of fact or law, or waive any of its defenses to those alleged violations.

I. General Objection to the Legal Sufficiency of the Violation Notice

The VN does not comply with the requirements of Section 31 of the Act. Section 31(a)(1)(B) of the Act requires the Illinois EPA to provide a detailed explanation of the violations alleged. 415 ILCS 5/31(a)(1)(B). Under the Act, MWG is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation.[3] The VN fails to provide adequate notice to MWG of either the alleged violations or the activities which the Agency believes are necessary to address them. The VN states that "[o]perations at ash impoundments have resulted in violations of the Groundwater Quality Standards...." (Violation Notice, Attachment A, page 1, 1st paragraph) No further description of the alleged "ash impoundments" is provided in the VN. Multiple ash impoundments exist at the Powerton Station. It is impossible to identify from the contents of the VN what operations or activities at the Powerton Station the Agency is claiming are the cause of the alleged violations, including whether it is the Agency's position that each of the Station's ash ponds, or only certain ones,

[3] *Citizens Utilities Co., v. IPCB*, 9 Ill.App.3d 158, 164, 289 N.E.2d 642, 648 (2nd Dist., 1972) (a person is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation). *See also, City of Pekin v. Environmental Protection Agency*, 47 Ill.App.3d 187, 192, 361 N.E.2d 889, 893 (3rd Dist., 1977.

have caused the alleged violations. Absent an accurate or complete description of the activities or operations that the Agency is alleging caused the violations, it is also not possible to identify what action might be necessary to resolve them. Attachment A to the VN states: "Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation." However, no such explanation is provided in the VN. In sum, the VN fails to comply with the legal requirement that it include a detailed explanation of the violations alleged, does not inform MWG of the specific conduct constituting the alleged violations and provides no notice of what is necessary to resolve the alleged violations. The Section 31 process is based on fundamental principles of due process. MWG should not have to speculate about what activities it allegedly engaged in that caused the violations and how to address them to resolve the alleged violations. In the absence of this material, statutorily-required information, the Agency also has effectively denied MWG's statutory right to formulate an acceptable Compliance Commitment Agreement to submit for the Agency's approval.

The VN is also deficient regarding its explanation of what laws MWG has allegedly violated. The VN solely alleges that MWG violated "Section 12" of the Act. 415 ILCS 5/12. It does not provide any further specification as to which of the provisions of Section 12 MWG has allegedly violated.

Section 12 of the Act has nine subsections, consecutively numbered (a) through (i). Each of these subsections describes a different and distinct water pollution prohibition. 415 ILCS 5/12(a)-(i). However, the VN issued to MWG does not identify which of the nine subsections the Agency is alleging MWG violated. Based on the contents of Section 12 of the Act, the Agency is taking the position that MWG violated each and every one of the provisions of Section 12. Based on the relevant facts, it is highly unlikely that this is the intent of the VN. Therefore, the VN's general reference to Section 12 of the Act, without any other explanation, is not a "detailed explanation of the violations." This is yet another example of how the VN fails to provide MWG with adequate notice as a matter of law and thereby violates MWG's due process rights.[4]

By failing to provide a detailed explanation of the violations and any explanation of the activities that the Illinois EPA believes may resolve the violations, the Illinois EPA has effectively denied MWG the opportunity to properly and thoroughly respond to the alleged violations and to make an acceptable offer to resolve them. The VN's deficiencies conflict with the intent and purpose of Section 31 of the Act, which is to avoid unnecessary litigation. Therefore, MWG respectfully requests that the Agency rescind the VN and suspend any further enforcement action unless and until it has taken the necessary actions to correct and cure the legal deficiencies in the notice of the alleged violations by following the statutory requirements under Section 31(a)(1)(B) of the Act. 415 ILCS 5/31(a)(1)(B)

[4] *See, e.g., Grigoleit Co. v. Illinois EPA*, PCB 89-184, slip op at p. 11 (November 29, 1990) (Failure to notify permit applicant of alleged violations and provide an opportunity to provide information in response was a violation of applicant's due process rights).

II. Response to Alleged Violations in the VN

Subject to and without waiving its objections to the legal sufficiency of the VN, MWG nevertheless has attempted to discern the legal basis for the alleged violations and to prepare this response in defense to those allegations based on various assumptions. MWG reserves the right to supplement this response, including by submitting a separate response should the Agency provide the legally required notice under Section 31 of the Act.

The VN alleges "[o]perations at ash impoundments" at MWG's Powerton Station have resulted in violations of certain of the Groundwater Quality Standards at the respective monitoring wells identified in the VN. (Violation Notice at Attachment A) MWG believes the Agency's use of the term "ash impoundments" is intended to refer to the structures which the Powerton Station commonly refers to as "ash ponds;" that is how they will be referred to here. The Agency further alleges that the alleged violations of the groundwater quality standards in 35 Ill. Admin. Code Part 620 also constitute violations of Section 12 of the Act and the underlying groundwater regulations in 35 Ill. Admin. Code Part 620. It is undisputable that the Agency has the burden to prove these alleged violations both in proceedings before the Illinois Pollution Control Board ("Board") and in the courts.[5] However, the groundwater monitoring data on which the Agency primarily, if not solely, relies to assert these violations is not sufficient, legally or technically, to prove that any "ash impoundments" is the source of the alleged groundwater impacts. Further, based on the existing condition of the ash ponds, it is not likely that they are a source of the alleged impacts.

To support its defense to the alleged violations, MWG has set forth below a description of: (1) the condition and use of the ash ponds at Powerton; (2) the hydrogeologic assessment performed at the Powerton Station; (3) the site hydrology; and (4) why the analytical data from the monitoring wells does not establish that the ash ponds are the source of the alleged exceedances of the groundwater standards.[6] In addition, for certain of the alleged exceedances, additional information not considered by the Agency shows that it is either more likely, or at least as likely, that the source of the alleged exceedance is something other than the ash ponds. In either case, the Agency cannot sustain its burden to prove the alleged violations.

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[5] Section 31(e) of the Act provides in relevant part: "In hearings before the Board under this Title, the burden shall be on the Agency...to show either that the respondent has caused or threatened to cause...water pollution or that the respondent has violated or threatens to violate any provision of this Act or any rule or regulation of the Board or permit or term or condition thereof." 415 ILCS 5/31(e); *Citizens Utilities v. IPCB*, 9 Ill. App. 3d 158, 164, 289 N.E.2d 642, 646 (1972) (the Agency has the burden of proof in enforcement actions).

[6] In preparing this response, MWG closely reviewed the groundwater monitoring reports previously submitted to the Agency for the monitoring wells which are identified in the VN. In the course of this review, some data transcription errors were found in the previously submitted data tables included in the groundwater monitoring reports. Copies of the corrected data tables are enclosed. The tables are annotated to identify the nature of the corrections made to the previously submitted reports. The most significant changes are: (i) consistent with previous data for MW-1, there was no boron exceedance at monitoring well MW-1 in the first quarter 2012 sampling event; (ii) there was no exceedance of selenium at wells MW-7 (4th quarter 2011), MW-9 (1st quarter 2011) and MW-13 (August 2011); and (iii) there was no exceedance of mercury at well MW-12 (4th quarter 2010).

A. The Condition of the Ash Ponds

For several reasons, the construction and operation of the Powerton ash ponds makes it unlikely that they are the cause of the alleged violations. The construction and operation of the ponds minimizes the potential for leakage from the ash ponds to groundwater.

First, the Powerton ash ponds are not disposal sites. The ash that enters the ponds is routinely removed. This operating condition limits the amount of ash accumulated over time which serves to minimize the potential for the release of ash constituents to the groundwater.

Second, unlike many other ash ponds in Illinois, two of the ash ponds at Powerton, the Ash Surge Pond and the Ash Bypass Basin are lined to prevent releases to groundwater. The third pond, the Secondary Ash Settling Basin, is not presently lined. However, as described below, there are no groundwater exceedances of coal ash constituents downgradient of the Secondary Ash Settling Basin, thus supporting the conclusion that it is not a source. When the final federal Coal Combustion Residual Rules are issued, MWG will rely on those rules to make a decision regarding any further modifications to, or the continued use of, the Secondary Ash Settling Basin.

The Ash Surge Pond at Powerton is constructed of Poz-o-Pac material which meets accepted standards for preventing the migration of constituents to the environment.[7] The permeability of the Poz-o-Pac liner is 10^{-7} cm/sec. Notably, this is the same degree of permeability that is required in the Board Regulations for constructing a new solid waste landfill where, unlike the ash ponds, waste materials are to be disposed of on a permanent basis. *See* 35 IAC 811.306(d). Pursuant to a construction permit issued by the Agency, the second ash pond, called the Ash Bypass Basin, was relined in 2010 with a high-density polypropylene (HDPE) liner.[8] The HDPE liner provides an even greater degree of protection against leakage with a permeability of approximately 10^{-13} cm/sec. The liners in the two ash ponds achieve and exceed the level of permeability which the Illinois regulations expressly recognize is sufficient to prevent the release of constituents to the environment. Hence, the facts regarding the liners in place for these two ash ponds also support the conclusion that the ash ponds are not the source of the exceedances of groundwater standards alleged in the VN.

The VN contains no facts concerning the condition of the liners in the Powerton ash ponds that would indicate that they are allowing ash constituents to escape from the ponds. For example, the Agency does not contend that there are any breaches in the integrity of the ash pond liners that are allowing ash constituents to be released to the groundwater. The Agency similarly does not claim that the materials used for the existing liners are inadequate to prevent the migration of constituents, and it would be hard pressed to do so given that the materials either meet or exceed the analogous requirements for Illinois landfills. In the absence of such

[7] Poz-o-Pac is an aggregate liner similar to concrete.
[8] *See* Illinois EPA Water Pollution Control Permit No. 2010-EP-0664 for the Bypass Basin Expansion and Liner Upgrade

evidence, it is certainly far more likely than not that the existing ash ponds at the Powerton Station are not the source of the groundwater impacts alleged in the VN.

B. Hydrogeologic Assessment and Site Hydrology

The VN appears to be based on the flawed premise that the hydrogeologic assessment which the Agency directed MWG to perform in the vicinity of the ash ponds would be sufficient to identify the ash ponds as the source of any elevated levels of constituents in the groundwater. This is simply not the case. The results of the hydrogeologic assessment at best give rise to more questions about the source of the alleged groundwater impacts, and do not prove that the existing ash ponds are the source of those impacts.

The results of the hydrogeologic assessment show that there is some complexity to the site hydrology at Powerton. The complexity of the groundwater flow system arises from the existence of two distinct, though connected, groundwater units underlying the Powerton Station. The first unit is a localized, saturated silt and clay layer and the lower unit is a more extensive sand layer. When the groundwater elevations from all fifteen of the existing monitoring wells are plotted and analyzed for a single monitoring event (*i.e.,* the silt/clay unit wells and the sand unit wells), the groundwater flow system appears very complex. It shows a general groundwater flow direction of south to north, but with very unusual, localized groundwater highs, making a reasonable interpretation of groundwater flow difficult and suggests the presence of some localized, divergent flow. However, when the five monitoring wells that are screened in the silt/clay unit and the ten wells that are screened in the sand unit are plotted separately, it becomes evident that there are two distinct, though connected, groundwater units beneath this portion of the Site. In both units, the groundwater flows from the south/southeast to the north/northwest, toward the adjoining outlet channel west of the ponds. The elevation of the groundwater surface is approximately 10 feet higher in the silt/clay unit than in the sand unit. Because both units flow in the same direction and are in direct physical contact with each other, it is likely that they share some degree of hydraulic connection. Given this groundwater flow system, the data provides no indication of divergent or radial flow associated with the ash ponds.

The VN's allegations fail to make any distinctions among the fifteen monitoring wells that have been installed at the Powerton Station. There is no apparent attempt to evaluate the quarterly groundwater monitoring results, whether on a parameter-by-parameter basis or relative to each of the ash ponds themselves. When these evaluations are performed, the results show that the monitoring data does not support the VN's allegations that the operations of the ash impoundments have caused these groundwater impacts. The results of the evaluations are set forth below, beginning with the parameter-by-parameter evaluation.

Boron and sulfate are constituents known to be associated with coal ash. However, the monitoring data does not support a finding that the alleged boron and sulfate exceedances are due to the operations of the ash ponds. There are no exceedances of boron concentrations in any of the wells within the clay unit (*i.e.,* MW-6, MW-8, MW-12, MW-14 and MW-15) and boron is generally considered a reliable tracer of potential ash leachate impacts. Further, in the course of

this review, a transcription error was discovered in the previously reported first quarter 2012 groundwater sampling results for monitoring well MW-1. There was no exceedance of boron at monitoring well MW-1 in the first quarter 2012 sampling event, which is consistent with previous monitoring results for this well. Corrected data tables for the Powerton groundwater monitoring wells quarterly monitoring results are included with this response.

In addition, of all of the clay unit wells, only MW-14 had reproducible exceedances of sulfate. MW-15 had only one exceedance of sulfate, which did not occur again in any of the subsequent quarterly monitoring results. The remaining groundwater monitoring wells sampling results have reported no sulfate exceedances. Of the monitoring wells located in the underlying sand unit, only wells MW-9 and MW-13 had reproducible exceedances for either boron or sulfate.

As further discussed below, monitoring well MW-9 is the furthest upgradient well within the overall monitoring network. It has the highest detections of boron relative to all the other wells, with the exception of well MW-13. However, monitoring well MW-13 was not installed as part of the hydrogeologic assessment of the ash ponds. It was installed as an upgradient monitoring point pursuant to the construction permit requirements for the Metals Cleaning Basin, which as its name implies, does not receive or store any coal ash. The Metals Cleaning Basin is not associated in any way with the ash storage pond system. Thus, boron present in MW-13 is not evidence of any impact caused by the operation of the ash ponds.

Turning to the alleged pH exceedances, all nine pH exceedances noted in the VN were from a single sampling event - the December 2011 sampling event. They were not detected in the previous quarterly sampling events and have not been repeated since the December 2011 sampling event. Moreover, for MW-2, the alleged pH exceedance reported from this December 2011 sampling event is the only exceedance detected for any parameter over all of the six consecutive quarters of sampling. Given that pH is a field parameter, and no other pH exceedances were detected in any of the wells in any of the other quarterly sampling events, it is far more likely that the December 2011 pH measurements were associated with a malfunctioning field meter. Therefore, the December 2011 pH monitoring results are not indicative of alleged impacts from the ash ponds or that the groundwater in the vicinity of the subject monitoring wells is actually exceeding the pH standard.

A review of the chloride groundwater monitoring results also shows that they are not associated with the operations of the ash impoundments, as alleged in the VN. There were alleged chloride exceedances at monitoring well locations MW-8, MW-12, MW-14 and MW-15. Except for well MW-8, each of these was a single non-reproducible exceedance at each location. At monitoring well MW-8, the chloride exceedances are from only the last two rounds of the six consecutive quarters of groundwater sampling. Chloride is not an indicator of potential coal ash impacts. There are various other potential non-ash related sources of this compound. None of the wells where these alleged chloride exceedances were found had any exceedances of the boron standard.

The only exceedance detected for thallium in all six, consecutive sampling events is an isolated exceedance recorded for a single monitoring well, MW-14. Monitoring well MW-14 was not installed as part of the hydrogeologic assessment of the ash ponds. It instead was installed as a downgradient monitoring well for the Metals Cleaning Basin, which is not associated with the ash storage pond system. Thallium is not a constituent typically associated with ash storage facilities. It was not detected in any of the other fourteen monitoring wells at the Powerton Station in any of six consecutive quarters of groundwater monitoring. Hence, the isolated and unique detection of thallium is not evidence of a release from the ash ponds.

The alleged selenium and mercury exceedances alleged in the VN are almost exclusively the result of transcription errors which occurred in the previous reporting of these results to the Agency. There was no exceedance of selenium detected at monitoring wells MW-7 (4th Quarter 2011), MW-9 (1st Quarter 2011) and MW-13 (3 rd Quarter 2011). The original laboratory data package shows selenium concentrations at ten times lower than what was reported in the monitoring results submitted to the Agency. In the quarterly reports submitted to the Agency, the decimal point was erroneously placed in the reported monitoring values, resulting in the reporting of values ten times higher than the actual laboratory results. The single selenium exceedance in monitoring well MW-14 is an isolated event, which occurred over a year ago. No subsequent selenium exceedances have been reported in the quarterly sampling events to date. Like thallium, the isolated detection of selenium is not evidence of a release from an ash pond. There also was no exceedance of mercury at well MW-12 (4th Quarter 2010). The previously reported elevated mercury level was also due to a transcription error. The corrected selenium and mercury groundwater monitoring results are included in the enclosed, corrected Tables.

In summary, a parameter-by-parameter evaluation shows that the monitoring data does not support the VN's allegation that the operation of the ash ponds has caused the alleged exceedances. Isolated monitoring well results showing exceedances of a given parameter that are not seen in any of the other fourteen monitoring wells (*e.g.,* thallium, selenium) do not support the VN's allegations. Multiple pH exceedances from a single sampling event are more indicative of an equipment error than actual groundwater conditions. Similarly, the chloride exceedances, most of which were not reproducible in subsequent sampling events and none are which are associated with boron and sulfate exceedances, also are not consistent with the ash ponds being the source of the exceedances. For other parameters, such as arsenic, manganese and iron, the monitoring results are far more consistent with the presence of a reducing environment in the area of groundwater where these elevated levels were detected. Finally, the alleged exceedances for selenium are not real. They are the result of transcription errors which occurred in the preparation of its quarterly reporting to the Agency due to the incorrect placement of a decimal point in the monitoring results values. This is now corrected in the enclosed Tables.

The separate evaluation of the groundwater monitoring results relative to each of the three active ash ponds and the former ash pond individually also reveals several deficiencies in the alleged violations. Each of these ash ponds is discussed separately below.

Ash Bypass Basin:

The furthest south (upgradient) pond is known as the "Ash Bypass Basin." As previously stated, the Ash Bypass Basin was relined with a HDPE liner in 2010. Monitoring well MW-9 is the upgradient monitoring well for the Ash Bypass Basin and wells MW-11 and MW-12 are the two immediately downgradient wells. Monitoring well MW-12 is screened within the silt/clay unit and monitoring wells MW-9 and MW-11 are screened within the underlying sand unit. For upgradient well MW-9, multiple exceedances of boron and manganese were detected. Monitoring well MW-11 had one exceedance of boron, but this occurred during the last round of quarterly sampling and hence, additional monitoring data is not yet available to determine whether this is an isolated event. While there were multiple exceedances of manganese in monitoring well MW-12, it did not have any reported exceedances of boron. The highest boron concentrations were reported in upgradient well MW-9. This indicates that the boron source is not associated with the operation of the Ash Bypass Basin. Further, the manganese concentrations in well MW-12 are similar to the concentrations measured at upgradient well location MW-9; however, the manganese concentrations at MW-11 (ranging from 2.2 mg/l to 3.6 mg/l) are higher than in the upgradient well which ranges from 0.19 mg/l to 0.48 mg/l. Elevated manganese concentrations can be associated with sources other that ash ponds and can be reflective of localized mineralogy and reduction-oxidation (redox) conditions, especially when elevated levels of both boron and sulfate are absent. Similarly, the alleged iron exceedances in well MW-12 can also be reflective of localized mineralogy and redox conditions especially in the absence of elevated concentrations of boron and sulfate, as is the case here.

The conclusion that the elevated manganese and iron levels are not due to the operation of the ash ponds is further supported by analytical testing performed in August 2008 of plant bottom ash, fly ash and fines. The analytical testing, which included Toxic Characteristic Leaching Procedure (TCLP) analyses, provides relevant information concerning the leaching nature of the ash compounds. The analytical data shows no detections of manganese in TCLP leachate from any of the samples. The leached iron detections range from non-detect to 0.044 mg/l, which is substantially lower than the iron exceedances in monitoring well MW-12. The analytical data does not support the VN's allegations that the source of the alleged exceedances in these monitoring wells is associated with the operation of the Ash Bypass Basin.

The weight of the evidence shows that the Ash Bypass Basin is not causing the alleged groundwater impacts. Moreover, even if a case could be made that it was, MWG has already taken the necessary steps to address it. As described above, the Ash Bypass Basin was relined in 2010 with a state of the art HDPE liner.

Ash Surge Pond:

The Ash Surge Pond is located north (*i.e.*, downgradient) of the Ash Bypass Basin. It is the largest of the ash ponds and is lined. Monitoring wells upgradient of the Ash Surge Pond are MW-12, MW-11 (previously discussed above because they are also downgradient of the Ash Bypass Basin) and monitoring well MW-10. Wells MW-15 and MW-8 are immediately

downgradient of the Ash Surge Pond.[9] Monitoring wells MW-8 and MW-15 are screened within the silt/clay unit and well MW-10 is within the underlying sand unit.

Upgradient well MW-10 had multiple reported exceedances of manganese, ranging from 2.1 mg/l to 3.8 mg/l.[10] (Downgradient well MW-15 has six exceedances of manganese ranging from 0.25 mg/l to 0.60 mg/l and well MW-8 has five exceedances of manganese ranging from 0.18 to 0.28 mg/l. The downgradient concentrations of manganese are clearly lower than in the upgradient wells suggesting that the manganese is not associated with operation of the Ash Surge Basin. It is also noted that neither wells MW-8 nor MW-15 have exceedances of boron, an ash impact indicator. There is also only one reported exceedance of sulfate in monitoring well MW-15 (650 mg/l), which was not reproducible during subsequent, consecutive sampling events. This alleged, isolated sulfate exceedance also was anomalously and significantly higher than all other sulfate detections at this monitoring well location, which ranged from 140 mg/l to 300 mg/l. Hence, the level of the single, alleged sulfate exceedance at MW-15 is more than twice that of any other reported value for this monitoring well.

Monitoring well MW-13 is slightly side gradient of the Ash Surge Basin (located just west of the southwest corner of the basin). As discussed previously, the boron and sulfate detections at this location were the highest of any monitoring well. These levels do not support a finding that that they are caused by the Ash Surge Basin's operations because none of the downgradient monitoring wells from this basin had any similar boron and sulfate levels detected throughout numerous, consecutive sampling events.

Ash Settling Pond:

The Ash Settling Pond is located to the north (downgradient) of the Ash Surge Basin. Monitoring well MW-8's location is considered upgradient of this pond. Monitoring wells MW-6 and MW-7 are immediately downgradient of the Ash Settling Pond. MW-6 is screened within the silt/clay unit and MW-7 is screened within the underlying sand unit. None of these three wells (MWs 6, 7 or 8) had reported exceedances of boron or sulfate. The range of boron detections at MW-6 (0.35 mg/l to 0.63 mg/l) and at MW-7 (0.34 mg/l to 0.61 mg/l) are significantly lower than the range of boron detections in the upgradient monitoring well MW-8 (0.57 mg/l to 0.93 mg/l). Hence, the monitoring data indicates that the concentrations of boron are lower on the downgradient side of the Ash Settling Pond. The same observation is true for the sulfate levels among these same monitoring wells. These findings support the conclusion that the alleged groundwater impacts in the vicinity of the Ash Settling Pond are not associated with its operation.

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[9] Monitoring well MW-15 is also adjacent to the northwest corner of the Metals Cleaning Basin, which is not part of the ash pond system.

[10] The manganese levels are similar to the elevated detections in monitoring well MW-11. Hence, these results are further evidence that the elevated manganese at MW-11 is not associated with the operation of the Ash Bypass Basin because monitoring well MW-10 is approximately 600 feet away from the Ash Bypass Basin and is not downgradient of it.

There were other alleged exceedances in MW-6 and/or MW-7, including a single alleged exceedance of chloride (MW-6) and one for lead (MW-7), as well as manganese, arsenic, iron, and Total Dissolved Solids (TDS)[11], as discussed above regarding iron and manganese, in the absence of elevated concentrations of the coal ash indicators such as boron and sulfate, these alleged exceedances are as likely due to other sources that are unrelated to the Ash Settling Pond or any of the other Powerton ash ponds.

Former Ash Pond:

Monitoring wells MW-1 through MW-5 are located around a former ash pond which is no longer in operation. Monitoring wells MW-1 and MW-10 are located upgradient of this former ash pond. Monitoring wells MW-2 through MW-5 are located downgradient of it. All six of these wells are screened within the sand unit. None of these wells have any exceedances of boron or sulfate. The single boron exceedance noted in the VN for these wells was at well MW-1, which a further review has found to be a transcription error in the prior reporting to the Agency. (See corrected value for MW-1 in enclosed Tables) The boron levels both upgradient and downgradient of the former ash pond are similar to each other, further evidence that the former ash pond is not the source of groundwater impacts. Although there are alleged manganese exceedances in monitoring wells MW-4 and MW-5, the range of these manganese values was lower than in these wells than in the upgradient monitoring well MW-10. The single alleged nitrate exceedance in upgradient monitoring well MW-1 is an isolated, unconfirmed exceedance that is insufficient to prove a violation of the nitrate standard. Further, there are various sources of nitrate in groundwater that are not associated with ash pond operations, especially when no elevated levels of known coal ash indicator compounds are present, which is the case here.

The Agency's broad and all-encompassing allegations regarding the ash ponds are simply not supported by a careful evaluation of the underlying groundwater monitoring data for the respective monitoring wells that are located upgradient and downgradient of each of the subject ash ponds. The groundwater monitoring data on which the VN is based is not sufficient to show that the ash ponds are the source of the alleged exceedances.

C. The Powerton Ash Ponds Are Not Causing Groundwater Exceedances

Because the Agency failed to specify which of the provisions of Section 12 of the Act MWG allegedly violated, MWG has had to speculate to identify the potential Section 12 violations this response needs to address. As stated above, MWG objects to the vagueness of, and legally deficient notice provided by, the VN and reserves its right to respond further when and if the Agency properly identifies the provisions of Section 12 on which it is relying.

[11] The single alleged exceedance for selenium in MW-7 that is included in the VN is due to a transcription error in prior reporting of monitoring results to the Agency. It has been corrected in the enclosed Tables.

For purposes of this response, based upon the regulations cited by the Agency in the VN, MWG has assumed that the Agency's alleged violations of Section 12 are limited to Sections 12(a), which prohibits causing or allowing water pollution, and to Section 12(d), which prohibits causing or allowing the creation of a water pollution hazard. 415 ILCS 5/12(a), (d). Based on these assumptions regarding the substance of the Illinois EPA's alleged violations, MWG submits that the Agency cannot show that the ash ponds at Powerton caused or allowed water pollution or created a water pollution hazard.

The overwhelming number of the alleged exceedances of the Class 1 groundwater standards are random and inconsistent. For all but a few of the parameters, the necessary confirmation of the existence of groundwater impacts above the Class 1 groundwater standards is absent. For the remaining few, the data is insufficient to prove that the source is one or more of the subject ash ponds.

To show a violation of Section 12(a) and 12(d), there must be a showing not only of the presence of a potential source of contamination, but also that it is in sufficient quantity and concentration to render the waters harmful. *Bliss v. Illinois EPA,* 138 Ill. App. 3d 699, 704 (1985) ("mere presence of a potential source of water pollutants on the land does not necessarily constitute a water pollution hazard"). In other words, there must be a causal link between the potential source and the water or groundwater. The groundwater monitoring data on which the Agency relies does not establish this essential causal link between the ash ponds and the groundwater. Therefore, the Agency has failed to meet its burden to prove that the ash ponds are the cause of the alleged exceedances of the groundwater standards as required to prove a violation of Sections 12(a) or 12(d) of the Act. 415 ILCS 5/12(a), (d).

Illinois EPA also alleges violations of the groundwater quality regulations based on exceedances of the groundwater quality standards in 35 Ill. Admin. Code § 620.401. There is no violation here of Section 620.401. Section 620.401 solely provides the legal criteria that groundwater must meet the standards appropriate to the groundwater's class. It is a foundational regulation, allowing for different classes of groundwater to meet different groundwater standards. It is not a prohibition regulation. There is no conduct prohibited by this section of the regulations in which MWG is alleged to have engaged. MWG cannot and did not violate Section 620.401.

The remaining alleged groundwater regulation violations, Sections 620.115, 620.301, 620.405, and 620.410 of the Board Regulations, are all based on the Agency's contention that MWG's operation of the ash ponds has caused the exceedances of the groundwater standards detected in the monitoring data. To sustain these allegations, the Agency must show that MWG caused a discharge of the subject constituents from ash ponds which in turn caused the

exceedances of the groundwater standards.[12] The relevant facts and circumstances do not support either conclusion.

The use and condition of the ash ponds does not support a finding that they are releasing constituents to the groundwater. They are not disposal sites. The ash is regularly removed from the ponds by MWG. The linings in two of the ash ponds are of sufficient permeability, consistent with accepted regulatory guidance, to prevent the release of constituents. Moreover, the groundwater down-gradient of the only unlined ash pond shows no impacts from coal ash constituents. Finally, pursuant to the terms of the Powerton Station's NPDES Permit, these ash ponds are part of the flow-through wastewater treatment process at the station. MWG's operation of the ash ponds has been carried out in accordance with the terms and conditions of the NPDES Permit. Under Section 12(f) of the Act, compliance with the terms and conditions of any permit issued under Section 39(b) of the Act is deemed compliance with this subsection.

Similarly, the groundwater data on which the Agency relies does not provide a sufficient scientific or technical evidentiary basis on which to conclude that the ash ponds are causing the alleged groundwater exceedances. The essential "causal link" between the ash ponds and the elevated constituents in the groundwater is missing. The data is at best inconclusive on this issue, while certain aspects of the data clearly point to other, unrelated causes.

Because the ash ponds have not been shown to have caused a release of any contaminants that are causing the groundwater exceedances, the Agency's VN does not support its claims that MWG has violated Sections 620.405 or 620.301 of the Board regulations. Accordingly, MWG also has not violated Section 620.115 of the Board regulations.

III. Compliance Commitment Agreement

This VN should not have been issued. Given the absence of proof that the ash ponds are the cause of the alleged groundwater exceedances, the Agency's request for a Compliance Commitment Agreement (CCA) is an attempt to compel MWG to conduct unnecessary corrective action.

Moreover, with the pending federal regulatory process to enact regulations for the design and operation of ash ponds, it is prudent to await the outcome of the proposed federal regulations to determine whether any changes to the ash ponds construction or operation are required by those regulations. The Agency itself has previously advanced this position. In 2010, the Agency's Steven Nightingale testified before the Illinois Pollution Control Board that the Board should consider initiating a temporary moratorium on the closure of coal ash impoundments because of the U.S. EPA's intention to regulate them. (*See In the Matter of Ameren Ash Pond Closure Rules (Hutsonville Power Station): Proposed 35 Ill.Adm.Code Part 840.101 Through*

[12] *See People of the State of Illinois v. ESG Watts, Inc.*, PCB 96-107 slip op. at p. 41 (February 5, 1998) (By finding the respondent caused a discharge of constituents into the groundwater causing a violation of the Class II Groundwater standards, the Board found the respondent also violated 35 IAC §§ 620.301 and 620.115).

840.152, Docket R09-21 (October 7, 2010) at p. 64) On behalf of the Agency, Mr. Nightingale told the Board that if industry had to take action in the interim, it "could end up expending substantial money and resources only to find they are subject to additional and/or different closure requirements for those units." (*Id.*) The Agency's pursuit of this enforcement action, particularly given the deficiencies in its alleged evidence, also threatens to force MWG to take actions that may conflict with or otherwise differ from the requirements in the upcoming federal regulations.

As the hydrogeologic assessment showed, there is no threat to human health presented by the alleged exceedances of the groundwater standards. The hydrogeologic assessment investigated the presence of potable water sources within a 2,500-foot radius of the site. Six wells are located within the 2,500-foot radius of the site; however none of the wells are down-gradient of the ash ponds. In fact, two of the wells supply the Powerton Station with water, and are regularly sampled for potable water constituents. The sampling results have consistently been in compliance with potable water regulations.[13] In the absence of any potable groundwater receptors or use, groundwater at the Powerton site does not pose any risk to human health. Accordingly, awaiting the outcome of the federal regulatory proposal is appropriate under these circumstances.

Because MWG's preference is to cooperate with the Agency in this matter, MWG presents here a proposed CCA that should be acceptable based on the relevant facts and circumstances. The proposed CCA terms are as follows:

A. The ash ponds will not be used as disposal sites and ash will continue to be removed from the ponds on a periodic basis.

B. MWG has installed a new liner in the Ash Bypass Basin that provides protection against the migration of ash constituents to the groundwater.

C. The ash ponds and the Ash Bypass Basin will be maintained and operated in a manner which protects the integrity of the existing liners. During the removal of ash from the ponds, appropriate procedures will be followed to protect the integrity of the existing liners, including operating the ash removal equipment in a manner which minimizes the risk of any damage to the liner.

D. During the ash removal process, visual inspections of the ponds will be conducted to identify any signs of a breach in the integrity of the pond liner. In the event that a breach of the pond liner is detected, MWG will notify the Agency and will submit a corrective action plan for repair or replacement, as necessary, of the liner. Upon the Agency's approval, and the issuance of any necessary construction permit, MWG will implement the correction action plan.

[13] See previously submitted Hydrogeologic Assessment of Midwest Generation Electric Generation Stations: Will County Station, Waukegan Station, Joliet 29 Station, Crawford Station, Powerton Station.

E. MWG proposes to establish a Groundwater Management Zone ("GMZ") below the ash ponds pursuant to Section 620.250 of the Board's regulations. 35 Ill. Admin. Code § 620.250. The corrective action required by the GMZ regulations is addressed by the existing pond liners. MWG is also willing to evaluate the inclusion of institutional controls regarding the area of impacted groundwater, provided that any institutional controls allow for the continued use of the Powerton potable water wells which are located outside of the subject area and for which regular, repeated testing has confirmed are not affected.

F. MWG will continue to monitor the groundwater through the existing fifteen groundwater monitoring wells and report its findings to Illinois EPA, pursuant to Section 620.250(c) of the GMZ Regulations, 35 Ill. Admin. Code § 620.250(c). MWG reserves the right to request the Agency's approval of a cessation of all or some of the monitoring requirements based on future monitoring results.

G. MWG will continue to monitor the development of the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640. When the final rule is issued, MWG will promptly notify Illinois EPA how it will comply with the new Federal Rules.

This letter constitutes our response to and proposed CCA for the Violation Notice W-2012-00057. MWG also reserves the right to raise additional defenses and mitigation arguments as may be necessary, in defense of the allegations listed in the Violation Notice in the event of any future enforcement. We look forward to discussing the above information further at the soon to be scheduled meeting with the Agency's representatives. Please contact me to schedule a mutually convenient date for the meeting.

Very truly yours,

Susan M. Franzetti
Counsel for Midwest Generation, LLC

Enclosures

cc: Maria L. Race, Midwest Generation, LCC

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)
Chemical Name		Class I*	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	0.0018	0.0015	0.0017	ND	ND	ND
Barium	Metals 6020	2.0	0.044	0.026	0.034	0.056	0.044	0.038	0.042	0.025	0.053	0.059	0.066	0.049
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	0.0057	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	0.0077	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	ND	ND	ND	ND	ND	ND	ND	0.0012	0.0022	ND	ND	ND
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.01	0.008	ND	0.0069	0.0095	ND	0.0086	0.0096	0.0053	0.01	0.0073	ND
Selenium	Metals 6020	0.05	0.0016	0.0022	0.0016	0.0036	0.0027	0.0025	0.0017	0.0032	0.0014	0.0032	0.0037	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013
Boron	Metals 6020	2	0.45	0.26	0.33	1.0	0.48	0.29	0.38	0.23	0.35	0.83	0.69	0.27
Sulfate	Dissolved 9038	400	50	30	39	83	31	61	52	42	53	70	69	55
Chloride	Dissolved 9251	200	46	37	40	41	26	53	45	43	44	46	40	53
Nitrogen/Nitrate	Nitrogen By calc	10	7.2	4.3	5.7	**11**	4.1	7.3	7.5	4.5	4.7	4.3	6.9	5.1
Total Dissolved Solids	Dissolved 2540C	1,200	490	340	410	510	440	470	480	420	470	460	490	440
Fluoride	Dissolved 4500 FC	4	0.28	0.32	0.38	ND	ND	ND	ND	0.3	0.35	ND	ND	ND
Radium 226 (pCi/L)	EPA 903.1	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Radium 228 (pCi/L)	EPA 904.0	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
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Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)	MW-4 (mg/L)
Chemical Name		Class I*	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0017	ND	0.0011	0.0012	0.0012	0.0012	ND	ND	ND	ND	ND	ND
Barium	Metals 6020	2.0	0.038	0.03	0.063	0.081	0.076	0.052	0.055	0.052	0.058	0.041	0.048	0.043
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	0.0045	ND	ND	0.0044	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	0.0026	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	0.012	0.0042	ND	ND	ND	ND	0.0033	0.01	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	ND	0.042	ND	ND	ND	0.017	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.0047	0.0023	ND	0.0037	0.0014	ND	ND	**0.68**	**0.41**	**0.69**	**0.35**	0.089
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.011	0.0095	ND	0.008	0.0078	ND	0.012	0.012	0.0067	0.011	0.01	0.0055
Selenium	Metals 6020	0.05	ND	0.0036	0.0015	0.0036	0.0021	0.0067	0.0022	0.0037	0.0022	0.0039	0.002	0.0085
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	0.75	0.18	0.24	0.64	0.7	0.56	0.77	0.83	0.33	0.84	0.79	0.78
Sulfate	Dissolved 9038	400	64	42	47	66	45	72	110	140	48	61	6.7	160
Chloride	Dissolved 9251	200	39	52	59	62	39	54	150	77	43	86	8.1	58
Nitrogen/Nitrate	Nitrogen By calc	10	9.4	5.2	5.4	0.2	0.2	2.1	0.34	0.73	2.7	0.06	0.07	0.65
Total Dissolved Solids	Dissolved 2540C	1,200	480	430	440	460	480	450	680	620	470	580	520	660
Fluoride	Dissolved 4500 FC	4	0.3	0.35	0.41	0.35	ND	ND	0.3	0.39	0.43	0.31	ND	ND
Radium 226 (pCi/L)	EPA 903.1	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Radium 228 (pCi/L)	EPA 904.0	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
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mg/L- milligrams per liter

AMENDMENTS
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Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)	MW-6 (mg/L)
Chemical Name		Class I*	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0011	ND	ND	ND	0.001	ND	0.0042	0.0024	0.0029	0.0031	0.0036	0.002
Barium	Metals 6020	2.0	0.053	0.048	0.046	0.071	0.065	0.054	0.11	0.092	0.1	0.1	0.12	0.097
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	0.0044	0.0042	ND	0.0066	ND	ND	0.006	0.0083	0.0045	0.0085	0.0056	ND
Cobalt	Metals 6020	1.0	0.0025	0.0023	ND	0.0027	0.0022	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	0.0036	0.0061	ND	ND	ND	0.0032	0.0042	ND	0.16
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	0.13	0.05	0.046	0.082	0.036	ND	1.6	1.6	1.7	1.8	1.9	1.7
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.51**	**0.49**	**0.48**	**0.64**	**0.5**	**0.26**	**0.68**	**0.68**	**0.63**	**0.66**	**0.63**	**0.61**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.014	0.013	0.0077	0.014	0.014	0.008	0.0091	0.014	0.0078	0.0099	0.0089	ND
Selenium	Metals 6020	0.05	0.0019	0.003	ND	0.0045	0.0023	0.0028	0.0034	ND	ND	0.0025	0.0033	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	0.0064	ND	ND	ND	ND	0.049
Boron	Metals 6020	2	0.95	0.93	0.79	0.79	0.77	0.82	0.5	0.35	0.43	0.61	0.63	0.39
Sulfate	Dissolved 9038	400	160	170	110	250	170	120	210	250	280	260	170	250
Chloride	Dissolved 9251	200	150	120	89	160	140	82	180	200	160	210	150	150
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	0.08	ND	ND	1.6	0.037	ND	ND	0.04	0.06	ND
Total Dissolved Solids	Dissolved 2540C	1,200	740	680	640	890	820	590	950	990	1,100	970	1,000	1,100
Fluoride	Dissolved 4500 FC	4	0.27	0.36	0.43	0.25	ND	ND	0.65	0.61	0.63	0.64	0.5	0.47
Radium 226 (pCi/L)	EPA 903.1	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Radium 228 (pCi/L)	EPA 904.0	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
ND- non detect
mg/L- milligrams per liter

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Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-7 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)	MW-8 (mg/L)
Chemical Name		Class I*	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.026	**0.085**	**0.12**	**0.18**	**0.23**	**0.23**	0.0052	0.0039	0.0044	0.0036	0.0052	0.0038
Barium	Metals 6020	2.0	0.55	0.52	0.57	0.57	0.59	0.57	0.11	0.12	0.11	0.11	0.13	0.14
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	0.0026	ND	0.0015	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	0.0088	0.0075	0.0061	0.011	ND	ND	0.0059	0.0081	0.0059	0.0084	0.0053	ND
Cobalt	Metals 6020	1.0	0.017	0.0056	0.007	0.0055	0.006	0.0067	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	0.14	ND	ND	ND	ND	ND	ND	ND	0.0036	0.0037	0.01	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	**8**	**7.5**	**10**	**22**	**26**	**31**	0.56	2.1	1.7	0.97	0.94	2.3
Lead	Metals 6020	0.0075	0.039	ND	0.0014	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**3.5**	**5.9**	**6.4**	**12**	**12**	**11**	0.15	**0.27**	**0.29**	**0.18**	**0.2**	**0.27**
Mercury	Mercury 7470A	0.002	ND	ND	0.00025	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.045	0.021	0.022	0.026	0.022	0.018	0.011	0.013	0.0076	0.007	0.009	0.0054
Selenium	Metals 6020	0.05	0.0043	0.0026	0.0025	0.0073	0.0054	0.0013	0.0036	0.0013	ND	0.0031	0.0036	0.0018
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	0.076	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	0.61	0.44	0.43	0.38	0.34	0.35	0.93	0.72	0.64	0.82	0.82	0.57
Sulfate	Dissolved 9038	400	120	49	25	9.1	3.3	3	160	240	140	200	200	300
Chloride	Dissolved 9251	200	170	200	140	130	81	99	180	**210**	140	**210**	190	170
Nitrogen/Nitrate	Nitrogen By calc	10	0.043	0.08	ND	0.31	0.03	ND	ND	ND	0.1	1.6	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200	860	1,100	**1,300**	**1,300**	**1,300**	**1,400**	890	990	970	940	990	1,200
Fluoride	Dissolved 4500 FC	4	0.47	0.42	0.58	0.94	0.47	0.54	0.77	0.76	0.81	0.84	0.75	0.7
Radium 226 (pCi/L)	EPA 903.1	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Radium 228 (pCi/L)	EPA 904.0	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
ND- non detect
mg/L- milligrams per liter

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Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)	MW-10 (mg/L)
Chemical Name		Class I*	12/16/10	2/15/11	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12	12/15/10	3/25/11	6/16/11	9/19/11	12/12/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	0.0018	0.0017	ND	0.0012	ND	ND	ND	0.0015	ND	ND	ND
Barium	Metals 6020	2.0	0.038	0.042	0.042	0.038	0.03	0.038	0.035	0.24	0.28	0.36	0.25	0.26	0.26
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	0.0026	0.0027	0.0039	0.0025	0.0026	0.0024
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0041	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	ND	0.066	ND	ND	ND	0.014	ND	ND	0.044	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.23**	**0.43**	**0.45**	**0.48**	0.14	**0.28**	**0.22**	**2.1**	**2.8**	**3.8**	**2.3**	**2.3**	**2.3**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.01	0.011	0.0093	0.0063	0.0065	0.0088	ND	0.015	0.016	0.015	0.01	0.013	0.0091
Selenium	Metals 6020	0.05	0.0024	ND	0.0072	0.0017	0.0043	0.0041	0.0072	0.0042	0.0064	0.0043	0.0057	0.0065	0.0056
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	**2.1**	1.9	1.9	1.9	2.5	2.7	2.6	0.48	0.48	0.52	0.42	0.57	0.54
Sulfate	Dissolved 9038	400	110	99	110	110	130	110	120	62	64	67	64	72	76
Chloride	Dissolved 9251	200	25	33	28	28	30	30	30	40	43	43	49	42	45
Nitrogen/Nitrate	Nitrogen By calc	10	2.9	3.7	5.6	5.6	3.7	2.6	5	3	4	2.1	4.5	4.9	6
Total Dissolved Solids	Dissolved 2540C	1,200	500	470	510	540	500	520	530	530	520	650	470	540	530
Fluoride	Dissolved 4500 FC	4	ND	0.32	0.31	0.34	0.25	ND	ND	ND	0.3	0.36	ND	ND	ND
Radium 226 (pCi/L)	EPA 903.1	20	0.673	0.728	NS	0.955	0.43	0.621	0.592	NS	NS	NS	NS	NS	NS
Radium 228 (pCi/L)	EPA 904.0	20	0.941	0.983	NS	0.974	0.966	0.966	0.831	NS	NS	NS	NS	NS	NS

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
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mg/L- milligrams per liter

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Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)
Chemical Name		Class I*	12/16/10	2/15/11	6/16/11	9/19/11	12/12/11	3/19/12	12/15/10	2/15/11	6/16/11	9/19/11	12/12/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0021	0.0025	0.0019	0.0016	0.0019	0.0021	0.0088	0.013	0.0064	0.0087	0.0089	0.0042
Barium	Metals 6020	2.0	0.17	0.11	0.18	0.11	0.11	0.13	0.089	0.11	0.091	0.085	0.09	0.071
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	0.0056	0.0044	0.0071	0.0047	ND
Cobalt	Metals 6020	1.0	0.0028	0.0041	0.0024	ND	ND	0.0024	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	0.0032	0.0032	0.0043	ND	ND	ND	ND	ND	0.0032	0.0036	0.0031	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	0.44	0.01	0.029	0.018	ND	ND	**5.5**	**6.3**	**5.6**	4	3.1	4.8
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**3.2**	**3.6**	**2.9**	**2.2**	**2.5**	**2.9**	**0.32**	**0.58**	**0.26**	**0.37**	**0.25**	0.13
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.019	0.016	0.013	0.011	0.013	0.011	0.0096	0.01	0.0072	0.0075	0.0091	0.0075
Selenium	Metals 6020	0.05	0.0026	0.0015	0.0018	0.004	0.0031	0.0039	0.0026	0.0027	ND	0.0023	0.0034	0.0043
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	1.6	1.8	1.6	1.5	1.8	**2.3**	1.6	1.4	1.3	1.2	1.3	0.92
Sulfate	Dissolved 9038	400	170	160	210	140	160	130	290	270	350	360	300	310
Chloride	Dissolved 9251	200	70	66	120	53	87	54	170	180	180	190	**210**	170
Nitrogen/Nitrate	Nitrogen By calc	10	0.41	0.17	0.04	0.74	1.5	0.39	ND	ND	0.14	ND	ND	0.04
Total Dissolved Solids	Dissolved 2540C	1,200	740	710	930	620	730	740	980	1,000	1,100	970	970	1,000
Fluoride	Dissolved 4500 FC	4	0.53	0.56	0.67	0.58	0.44	0.42	0.71	0.61	0.64	0.74	0.61	0.46
Radium 226 (pCi/L)	EPA 903.1	20	0.445	0.174	0.929	0.489	0.733	0.621	0.617	0.207	0.893	0.803	0.923	0.445
Radium 228 (pCi/L)	EPA 904.0	20	0.915	0.967	0.914	0.949	1.03	0.683	0.97	0.973	0.956	0.996	0.952	0.713

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from bold to normal.
- Value has not changed; font has been changed from normal to bold.

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-13 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)	MW-14 (mg/L)
Chemical Name		Class I*	12/15/10	2/15/11	4/25/11	6/16/11	8/9/11	10/13/11	12/12/11	4/10/12	12/15/10	2/15/11	4/25/11	6/16/11	8/9/11	10/13/11	12/12/11	4/10/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.011	0.0069	0.0063	0.0057	0.0048	0.0066	0.023	0.027	0.024	0.019	0.0084	0.005	0.0062	0.015	0.0033	0.0039
Barium	Metals 6020	2.0	0.11	0.052	0.073	0.059	0.046	0.083	0.21	0.14	0.034	0.034	0.036	0.04	0.041	0.04	0.045	0.045
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	0.0062	0.0042	0.0045	ND	ND	0.01	0.0055	0.0055	ND	0.0046	0.0078	0.0049	0.0076	0.0096	0.0065	0.0057
Cobalt	Metals 6020	1.0	0.0031	0.0026	0.0023	0.0022	0.0031	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	0.0068	0.0037	0.0041	0.004	0.004	0.0055	0.0066	0.0068	0.0037	0.0035	0.0074	0.0071	0.0064	0.0055	0.025	0.0067
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	0.69	0.052	0.077	ND	0.043	ND	0.11	0.2	2.2	0.94	0.036	0.3	0.71	2	0.12	0.77
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0035
Manganese	Metals 6020	0.15	5	3.8	2.7	2.9	2.6	3.6	3.5	3.5	0.68	0.81	0.29	0.36	0.57	0.84	0.067	0.63
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.03	0.023	0.021	0.018	0.016	0.015	0.022	0.02	0.015	0.015	0.02	0.016	0.016	0.011	0.015	0.018
Selenium	Metals 6020	0.05	0.0046	0.0046	0.0045	0.0029	0.0056	0.004	0.0036	0.0037	0.0024	0.0015	0.065	0.0035	0.003	0.0017	0.0037	0.022
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	0.0019	0.0018	0.0035	0.0039	0.0027	0.0016	0.0016	0.0034
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0084
Boron	Metals 6020	2	3.9	3.1	2.6	3.0	2.7	3.0	4.1	4.0	2.0	1.9	1.9	1.9	1.8	1.9	1.9	1.8
Sulfate	Dissolved 9038	400	1,400	770	580	540	440	660	1,100	1,100	960	820	770	810	940	850	880	990
Chloride	Dissolved 9251	200	160	120	100	86	110	110	180	170	160	160	160	160	240	200	200	190
Nitrogen/Nitrate	Nitrogen By calc	10	0.14	1.3	1.8	2.2	3.6	1.6	0.07	0.06	0.036	ND	1	0.27	0.05	ND	0.33	0.31
Total Dissolved Solids	Dissolved 2540C	1,200	2,600	1,600	1,400	1,300	1,100	1,500	2,100	2,300	1,800	1,700	1,800	1,900	2,000	1,800	1,800	2,200
Fluoride	Dissolved 4500 FC	4	0.28	0.29	0.31	0.44	0.38	0.3	ND	0.32	1.7	1.6	1.1	1.3	1.4	0.88	1.1	1
Radium 226 (pCi/L)	EPA 903.1	20	0.603	0.165	NA	0.741	0	0.444	0.955	0.678	0.577	0.163	NA	0.893	0.474	0.0983	0.857	0.601
Radium 228 (pCi/L)	EPA 904.0	20	0.988	0.966	0.73	1	0.198	0.74	1.01	0.883	0.944	0.96	0.737	0.947	1.1	--	0.985	0.929

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
ND- non detect
mg/L- milligrams per liter

AMENDMENTS
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- Value has not changed; font has been changed from bold to normal.
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Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Powerton Generation Station
Pekin, Illinois
Midwest Generation
21253.022

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)	MW-15 (mg/L)
Chemical Name		Class I*	12/15/10	2/15/11	4/25/11	6/16/11	8/9/11	10/13/11	12/12/11	4/10/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0099	0.0092	0.0064	0.0052	0.0053	0.011	0.0097	0.0061
Barium	Metals 6020	2.0	0.058	0.052	0.061	0.11	0.057	0.06	0.063	0.075
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	0.0042	0.0061	0.0092	0.0054	0.0091	0.0062	0.0062	0.0071
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	0.0039	0.005	0.0041	0.0037	0.0031	0.0039
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	3.3	2.4	2.1	0.7	2.1	2.6	2.1	0.0011
Lead	Metals 6020	0.0075	ND	ND	0.0012	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.56**	**0.42**	**0.36**	**0.6**	**0.37**	**0.48**	**0.39**	**0.25**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.013	0.011	0.012	0.015	0.01	0.011	0.011	0.01
Selenium	Metals 6020	0.05	0.0042	0.0079	0.017	0.004	0.002	0.004	0.0047	0.025
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2	1.6	1.4	1.5	1.6	1.3	1.2	1.2	1.4
Sulfate	Dissolved 9038	400	300	220	270	**650**	250	180	140	200
Chloride	Dissolved 9251	200	180	190	190	170	**210**	180	200	200
Nitrogen/Nitrate	Nitrogen By calc	10	0.03	0.086	0.04	0.07	0.05	ND	0.07	0.12
Total Dissolved Solids	Dissolved 2540C	1,200	1,000	1,000	1,100	**1,600**	1,000	890	840	1,000
Fluoride	Dissolved 4500 FC	4	0.69	0.75	0.6	0.73	0.76	0.77	0.75	0.79
Radium 226 (pCi/L)	EPA 903.1	20	0.666	0.174	NA	0.946	0.567	0.372	0.979	0.508
Radium 228 (pCi/L)	EPA 904.0	20	0.902	0.968	0.689	0.983	0.0954	1.04	0.937	0.901

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
NS-not sampled
ND- non detect
mg/L- milligrums per liter

AMENDMENTS
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- Value has not changed; font has been changed from normal to bold.

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 23

PEOPLE V. MICHEL GRAIN COMPANY, et al. PCB96-143, STIPULATION AND PROPOSAL FOR SETTLEMENT

OFFICE OF THE ATTORNEY GENERAL
STATE OF ILLINOIS

Lisa Madigan
ATTORNEY GENERAL

October 18, 2007

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

Re: ***People v. Michel Grain Company, Inc., et al.***
PCB No. 96-143

Dear Clerk Gunn:

Enclosed for filing please find the original and ten copies of a NOTICE OF FILING, MOTION FOR RELIEF FROM HEARING REQUIREMENT and STIPULATION AND PROPOSAL FOR SETTLEMENT, in regard to the above-captioned matter. Please file the originals and return file-stamped copies of the documents to our office in the enclosed, self-addressed, stamped envelope.

Thank you for your cooperation and consideration.

Very truly yours,

Phillip McQuillan
Environmental Bureau
500 South Second Street
Springfield, Illinois 62706
(217) 782-9031

PM/pjk
Enclosures

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PEOPLE OF THE STATE OF ILLINOIS,	)	
	)	
Complainant,	)	
	)	
vs.	)	**PCB 96-143**
	)	**(Enforcement-Water)**
MICHEL GRAIN COMPANY, INC., a/k/a MICHEL FERTILIZER, an Illinois corporation, CARYLE MICHEL, RONNIE TODD and RONNIE TODD LAND TRUST,	)	
	)	
Respondents.	)	

NOTICE OF FILING

To: Doug Antonik
Antonik Law Offices
411 Main Street
Mt. Vernon, IL 62864

F. William Bonan
Bonan, Bonan & Rowland
P.O. Box 309
McLeansboro, IL 62859

PLEASE TAKE NOTICE that on this date, I mailed for filing with the Clerk of the Pollution Control Board of the State of Illinois, a MOTION FOR RELIEF FROM HEARING REQUIREMENT and STIPULATION AND PROPOSAL FOR SETTLEMENT, copies of which are attached hereto and herewith served upon you.

Respectfully submitted,

PEOPLE OF THE STATE OF ILLINOIS

LISA MADIGAN
Attorney General of the
State of Illinois

MATTHEW J. DUNN, Chief
Environmental Enforcement/Asbestos
Litigation Division

BY: Phillip McQuillan
PHILLIP McQUILLAN
Assistant Attorney General
Environmental Bureau

500 South Second Street
Springfield, Illinois 62706
217/782-9031
Dated: October 18, 2007

CERTIFICATE OF SERVICE

I hereby certify that I did on October 18, 2007, send by First Class Mail, with postage thereon fully prepaid, by depositing in a United States Post Office Box true and correct copies of the following instruments entitled NOTICE OF FILING, MOTION FOR RELIEF FROM HEARING REQUIREMENT and STIPULATION AND PROPOSAL FOR SETTLEMENT

To: Doug Antonik
Antonik Law Offices
411 Main Street
Mt. Vernon, IL 62864

F. William Bonan
Bonan, Bonan & Rowland
P.O. Box 309
McLeansboro, IL 62859

and the original and ten copies by First Class Mail with postage thereon fully prepaid of the same foregoing instrument(s):

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

A copy was also sent by First Class Mail with postage thereon fully prepaid

To: Carol Webb
Hearing Officer
Pollution Control Board
1021 North Grand Avenue East
Springfield, Illinois 62702

Phillip McQuillan
Assistant Attorney General

This filing is submitted on recycled paper.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PEOPLE OF THE STATE OF ILLINOIS,	)	
	)	
Complainant,	)	
	)	
vs.	)	**PCB 96-143**
	)	**(Enforcement-Water)**
MICHEL GRAIN COMPANY, INC., a/k/a MICHEL FERTILIZER, an Illinois corporation, CARYLE MICHEL, RONNIE TODD and RONNIE TODD LAND TRUST,	)	
	)	
Respondent.	)	

MOTION FOR RELIEF FROM HEARING REQUIREMENT

NOW COMES Complainant, PEOPLE OF THE STATE OF ILLINOIS, by LISA MADIGAN, Attorney General of the State of Illinois, and pursuant to Section 31(c)(2) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(c)(2) (2006), moves that the Illinois Pollution Control Board grant the parties in the above-captioned matter relief from the hearing requirement imposed by Section 31(c)(1) of the Act, 415 ILCS 5/31(c)(1) (2006). In support of this motion, Complainant states as follows:

1. The parties have reached agreement on all outstanding issues in this matter.

2. This agreement is presented to the Board in a Stipulation and Proposal for Settlement, filed contemporaneously with this motion.

3. All parties agree that a hearing on the Stipulation and Proposal for Settlement is not necessary, and respectfully request relief from such a hearing as allowed by Section 31(c)(2) of the Act, 415 ILCS 5/31(c)(2) (2006).

WHEREFORE, Complainant, PEOPLE OF THE STATE OF ILLINOIS, hereby requests that the Board grant this motion for relief from the hearing requirement set forth in Section 31(c)(1) of the Act, 415 ILCS 5/31(c)(1) (2006).

Respectfully submitted,

PEOPLE OF THE STATE OF ILLINOIS
LISA MADIGAN
ATTORNEY GENERAL

MATTHEW J. DUNN, Chief
Environmental Enforcement/Asbestos
Litigation Division

BY: _____
PHILLIP McQUILLAN
Environmental Bureau
Assistant Attorney General

500 South Second Street
Springfield, Illinois 62706
217/782-9031
Dated: October 18, 2007

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PEOPLE OF THE STATE OF ILLINOIS,	)	
	)	
	)	
Complainant,	)	
	)	
	)	
	)	PCB No. 96-143
vs.	)	
	)	(Enforcement - Water)
	)	
	)	
MICHEL GRAIN COMPANY, INC., a//k/a MICHEL FERTILIZER, an Illinois corporation, CARYLE MICHEL, RONNIE TODD, and RONNIE TODD LAND TRUST,	)	
	)	
Respondents.		

STIPULATION AND PROPOSAL FOR SETTLEMENT

Complainant, PEOPLE OF THE STATE OF ILLINOIS, by LISA MADIGAN, Attorney General of the State of Illinois, the Illinois Environmental Protection Agency ("Illinois EPA"), and MICHEL GRAIN COMPANY, INC., a/k/a MICHEL FERTILIZER, an Illinois corporation, and CARYLE MICHEL, (collectively referred to as "Respondent Michel"), and RONNIE TODD and RONNIE TODD LAND TRUST, (collectively referred to as "Respondent Todd"), have agreed to the making of this Stipulation and Proposal for Settlement ("Stipulation") and submit it to the Illinois Pollution Control Board ("Board") for approval. The parties agree that the statement of facts contained herein represents a fair summary of the evidence and testimony that would be introduced by the parties if a hearing were held. The parties further stipulate that this statement of facts is made and agreed upon for purposes of settlement only and that neither the fact that a party has entered into this Stipulation, nor any of the facts stipulated herein, shall be introduced into evidence in any other proceeding regarding the claims asserted in the Third Amended Complaint except as otherwise provided herein. If the Board approves and enters this

Stipulation, Respondent Michel and Respondent Todd agree to be bound by the Stipulation and Board Order and not to contest their validity in any subsequent proceeding to implement or enforce their terms.

I.

JURISDICTION

The Board has jurisdiction of the subject matter herein and of the parties consenting hereto pursuant to the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/1 *et seq.* (2004).

II.

AUTHORIZATION

The undersigned representatives for each party certify that they are fully authorized by the party whom they represent to enter into the terms and conditions of this Stipulation and to legally bind them to it.

III.

STATEMENT OF FACTS

A. Parties

1. On or about September 20, 2002, a Third Amended Complaint was filed on behalf of the People of the State of Illinois by Lisa Madigan, Attorney General of the State of Illinois, on her own motion and upon the request of the Illinois EPA, pursuant to Section 31 of the Act, 415 ILCS 5/31(2004), against the Respondent.

2. The Illinois EPA is an administrative agency of the State of Illinois, created pursuant to Section 4 of the Act, 415 ILCS 5/4 (2004).

3. At all times relevant to the Third Amended Complaint, Respondent Michel conducted a farm fertilizer and farm chemical business both as MICHEL GRAIN COMPANY,

INC., a corporation that was authorized to transact business in the State of Illinois and which was also known as MICHEL FERTILIZER; and, Respondent Michel also conducted a farm fertilizer and farm chemical business as an individual proprietor.

4. Respondent Michel conveyed "Block 35 in the Village of Broughton, situated in Hamilton County, Illinois, (the "Broughton site") to Respondent Todd by means of a Quitclaim Deed, dated June 24, 1997, and recorded in Hamilton County in Deed Record Book 254 at Page 731. On or about July 21, 2000, Ronnie Todd conveyed said property to the Ronnie Todd Land Trust.

B. Site Description

1. At all times relevant to the Third Amended Complaint, Respondent Michel owned and operated a grain elevator and a farm fertilizer and farm chemical facility located in the eastern portion of the Village of Ina in the NE 1/4 of the NW 1/4 of Section 29, Township 4 South, Range 3 East in the County of Jefferson, in the State of Illinois (the "Ina site" or "Ina facility"); and, Respondent Michel owned and operated a farm fertilizer and farm chemical facility adjacent to Illinois Route 142 located in Block 35 in the Village of Broughton, in the County of Hamilton, in the State of Illinois (the "Broughton site" or "Broughton facility").

2. On May 8, 1989, the Illinois EPA inspected the Ina site. The inspection disclosed that, for a period of time known only to Respondent Michel, the Ina facility was operated in such a manner that resulted in the discharge of fertilizers, pesticides, and herbicides onto the ground.

3. The operating practices at the Ina site resulted in the accumulation of fertilizers, pesticides, and herbicides on and in the ground at the Ina site and in the drainage way adjacent to the Ina site so as to cause or tend to cause water pollution.

4. Respondent Michel purchased the Broughton facility on February 7, 1989; Respondent Michel operated the Broughton facility from February of 1989, until some time in

the late Spring of 1990; from the Spring of 1990 until the land was sold to Ronnie Todd on June 24, 1997, no agricultural fertilizer or chemical business was conducted on the site; Respondent Michel leased the workshop building to various persons for equipment storage and/or repair from late Spring of 1990 until the land was sold to Ronnie Todd.

5. On January 9, 1992, the Illinois EPA inspected the Broughton site. The inspection disclosed that, for a period of time known only to Respondent Michel, the Broughton facility was operated in such a manner that resulted in the discharge of fertilizers, pesticides, and herbicides onto the ground.

6. The operating practices at the Broughton site resulted in the accumulation of fertilizers, pesticides, and herbicides on and in the ground at the Broughton site and in the drainage way adjacent to the Broughton site so as to cause or tend to cause water pollution.

C. Allegations of Non-Compliance

Complainant contends that the Respondent Michel has violated the following provisions of the Act and Board regulations:

Count I:	Section 12(a) of the Act, 415 ILCS 5/12(a), Section 12(d) of the Act, 415 ILCS 5/12(d), Section 306.102(b) of the Board's Rules and Regulations, 35 Ill. Adm. Code 306.102(b), Sections 302.203 and 304.106 of the Board's Rules and Regulations, 35 Ill. Adm. Code 302.203 and 304.106.
Count II:	Section 21(d)(2) of the Act, 415 ILCS 5/21(d)(2) Section 808.121 of the Board's Rules and Regulations, 35 Ill. Adm. Code 808.121.
Count III:	Section 12(a) of the Act, 415 ILCS 5/12(a), Section 12(d) of the Act, 415 ILCS 5/12(d), Sections 302.203 and 304.106 of the Board's Rules and Regulations, 35 Ill. Adm. Code 302.203 and 304.106.

Count IV: Section 21(d)(2) of the Act, 415 ILCS 5/21(d)(2)
Section 808.121 of the Board's Rules and Regulations,
35 Ill. Adm. Code 808.121.

D. No Admission of Violations

The Respondent Michel represents that he has entered into this Stipulation for the purpose of settling and compromising disputed claims without having to incur the expense of contested litigation. By entering into this Stipulation and complying with its terms, the Respondent Michel does not affirmatively admit the allegations of violation within the Third Amended Complaint, and this Stipulation shall not be interpreted as including such admission.

Respondent Todd denies that he has violated the Act. Respondent Todd enters into this Stipulation for the sole purpose of allowing access to the Broughton site for the purpose of soil and water testing which will be paid for by Respondent Michel. If remediation is needed at the Broughton site, Respondent Todd will allow access to the Broughton site for remediation work which will be paid for by Respondent Michel.

E. Compliance Activities to Date

1. On May 11, 2001, ARDL, Inc., (Applied Research & Development Laboratory) of Mt. Vernon, Illinois collected soil samples from the Ina site and later tested the samples for the following compounds: alachlor, atrazine, pendimentahlin, trifluralin, nitrate compounds, and ammonia.

2. ARDL, Inc., prepared a report; and, the Conclusion of the report states in part: Detected parameters were compared to the applicable regulatory action levels

(i.e., TACO, Tier 1 Soil Remediation Objectives for Residential Properties * * *. The compounds alachlor, atrazine, pendimentahlin, trifluralin, and nitrate as nitrogen have action levels in the milligram per kilogram range. The compound * * * ammonia do[es] not have action levels assigned. All analysis results indicate that soils and sediments have concentrations of of the analyzed parameters which are well below the action levels.

IV.

APPLICABILITY

This Stipulation shall apply to and be binding upon the Complainant and the Respondent Michel, and any officer, director, agent, employee or servant of the Respondent Michel, as well as any successors or assigns of the Respondent Michel. The Respondent Michel shall not raise as a defense to any enforcement action taken pursuant to this Stipulation the failure of any of its officers or agents to take such action as shall be required to comply with the provisions of this Stipulation.

1. No change in ownership, corporate status or operator of the facility shall in any way alter the responsibilities of the Respondent Michel under this Stipulation and Proposal for Settlement. In the event of any conveyance of title, easement or other interest in the facility, the Respondent Michel shall continue to be bound by and remain liable for performance of all obligations under this Stipulation.

2. On June 24, 1997, Caryle Michel and Catherine Michel conveyed Block 35 in the Village of Broughton, situated in Hamilton County, Illinois, the Broughton site, to Ronnie Todd. On or about July 21, 2000, Ronnie Todd conveyed said property to the Ronnie Todd Land Trust.

3. Ronnie Todd and the Ronnie Todd Land Trust agree to allow ARDL, Inc., or any other environmental testing or laboratory company designated by Respondent Michel and

approved by the Illinois EPA, access to the Broughton site for the purpose of collecting soil and sediment samples for laboratory analysis.

4. Ronnie Todd and the Ronnie Todd Land Trust agree to allow environmental remediation contractors, designated by Respondent Michel and approved by the Illinois EPA, access to the Broughton site for the purpose remediating the land and groundwater to meet TACO Tier 1 Soil Remediation Objectives for Residential Properties for the following compounds: alachlor, atrazine, metolachlor, pendimentahlin, trifluralin, metribuzin, cyanazine, simazine, ammonia, and nitrates-N.

5. If remediation work is necessary at the Broughton site, as shown by the laboratory analysis of the soil and sediment samples, the Respondent Michel shall notify each prime contractor to be retained to perform work required by any Order accepting and adopting the terms of this Stipulation of each of the requirements of said Order relevant to the activities to be performed by that contractor, including all relevant work schedules and reporting deadlines, and shall provide a copy of this Stipulation and any Order accepting and adopting the terms of this Stipulation and Proposal for Settlement to each contractor already retained no later than 30 days after the date of filing of this Stipulation. In addition, the Respondent Michel shall provide copies of all schedules for implementation of the provisions of this Stipulation to the prime vendor(s) supplying the control technology systems and other equipment required by any Order accepting and adopting the terms of this Stipulation.

V.

COMPLIANCE WITH OTHER LAWS AND REGULATIONS

This Stipulation in no way affects the responsibilities of the Respondent Michel to comply with any other federal, state or local laws or regulations including, but not limited to, the Act and the Board regulations, 35 Ill. Adm. Code, Subtitles A through H.

VI.

IMPACT ON THE PUBLIC RESULTING FROM ALLEGED NON-COMPLIANCE

Section 33(c) of the Act, 415 ILCS 5/33(c)(2004), provides as follows:

> In making its orders and determinations, the Board shall take into consideration all the facts and circumstances bearing upon the reasonableness of the emissions, discharges, or deposits involved including, but not limited to:
>
> 1. the character and degree of injury to, or interference with the protection of the health, general welfare and physical property of the people;
>
> 2. the social and economic value of the pollution source;
>
> 3. the suitability or unsuitability of the pollution source to the area in which it is located, including the question of priority of location in the area involved;
>
> 4. the technical practicability and economic reasonableness of reducing or eliminating the emissions, discharges or deposits resulting from such pollution source; and
>
> 5. any subsequent compliance.

In response to these factors, the parties state the following:

1. Human health and the environment were threatened by the Respondent Michel's violations at the Ina site and at the Broughton site.

2. There is social and economic benefit to the Ina facility and to the Broughton facility.

3. Operation of the Ina facility and the Broughton facility were both suitable for the areas in which they were located.

4. Compliance with the terms of the Act and the Board's Rules and Regulations is both technically practicable and economically reasonable.

5. Respondent Michel has discontinued operation of the Ina facility and the Broughton facility.

VII.

CONSIDERATION OF SECTION 42(h) FACTORS

Section 42(h) of the Act, 415 ILCS 5/42(h)(2004), provides as follows:

> In determining the appropriate civil penalty to be imposed under . . . this Section, the Board is authorized to consider any matters of record in mitigation or aggravation of penalty, including but not limited to the following factors:
>
> 1. the duration and gravity of the violation;
>
> 2. the presence or absence of due diligence on the part of the respondent in attempting to comply with requirements of this Act and regulations thereunder or to secure relief therefrom as provided by this Act;
>
> 3. any economic benefits accrued by the respondent because of delay in compliance with requirements, in which case the economic benefits shall be determined by the lowest cost alternative for achieving compliance;
>
> 4. the amount of monetary penalty which will serve to deter further violations by the respondent and to otherwise aid in enhancing voluntary compliance with this Act by the respondent and other persons similarly subject to the Act;
>
> 5. the number, proximity in time, and gravity of previously adjudicated violations of this Act by the respondent;
>
> 6. whether the respondent voluntarily self-disclosed, in accordance with subsection i of this Section, the non-compliance to the Agency; and
>
> 7. whether the respondent has agreed to undertake a "supplemental environmental project," which means an environmentally beneficial project that a respondent agrees to undertake in settlement of an enforcement action brought under this Act, but which the respondent is not otherwise legally required to perform.

In response to these factors, the parties state as follows:

1.(a). At the Ina site, Respondent Michel failed to have a poured concrete surface and catch basin with containment tanks to contain farm fertilizer and/or farm chemical spills. At the Ina site, the violations were discovered during an Illinois EPA inspection on May 8, 1989. At the next inspection on May 31, 1989, the inspector noted that efforts had been made to remedy the problems and that the site was in much better condition than it had been on May 8, 1989. The

violations existed for a period of time prior to May 8, 1989; operational improvements at the site were evident on May 31, 1989; and sometime thereafter, all operations at the site ceased.

1.(b) At the Broughton site, the prior owner and operator who is deceased did not employ suitable operating practices to avoid or contain spills prior to the installation of a poured concrete surface and construction of two containment tanks to catch spills and rinseate. Respondent Michel purchased the Broughton facility on February 7, 1989. Respondent Michel operated the Broughton facility from February of 1989, until some time in the late Spring of 1990 on a lease/profit-sharing basis. Some time in late Spring of 1990, the Broughton site was closed. The Illinois EPA inspected the Broughton site on January 9, 1992.

2. At the Ina facility, Respondent Michel took steps in attempting to come back into compliance with the Act, Board regulations and applicable federal regulations, once the Illinois EPA notified him of his noncompliance.

3. Respondent Michel enjoyed an economic benefit in noncompliance at the Ina site in the amount of money saved by not installing a poured concrete surface and placement of containment tanks to catch spills and rinseate. Complainant estimates this cost savings to be $5,000. The economic benefit as to noncompliance at the Broughton site was enjoyed by the prior owner and operator. Any benefit to Respondent Michel would be only nominal.

4. Complainant has determined, based upon the specific facts of this matter, that a penalty of FIVE THOUSAND DOLLARS ($5,000.00) will serve to recover any economic benefit accrued by the Respondent Michel, to deter further violations, and to aid in future voluntary compliance with the Act and Board regulations.

5. To Complainant's knowledge, Respondent Michel has no previously adjudicated violations of the Act.

6. Self-disclosure is not at issue in this matter.

7. The settlement of this matter does not include a supplemental environmental project.

8. Respondent Todd did not participate in the violation of the Act at the Broughton site.

VIII.

TERMS OF SETTLEMENT

A. Penalty Payment

1. The Respondent Michel shall pay a civil penalty in the sum of FIVE THOUSAND Dollars ($5,000.00) within thirty (30) days from the date the Board adopts and accepts this Stipulation. The penalty described in this Stipulation shall be paid by certified check, money order or wire transfer payable to the Illinois EPA, designated to the Illinois Environmental Protection Trust Fund and submitted to:

Illinois Environmental Protection Agency
Fiscal Services Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

The name and number of the case and Respondent Michel's Social Security Number must be on the check that is presented to the Illinois EPA. Upon signing this document Respondent Michel shall supply his Social Security Number to the Illinois EPA. The Social Security Number will only be used to track payment in this case and to assure that the payment is credited to Respondent Michel. A copy of the certified check or money order and the transmittal letter shall be sent to:

Phillip McQuillan
Assistant Attorney General
Environmental Bureau
500 South Second Street
Springfield, Illinois 62702

Charles Gunnarson
Assistant Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

2. Pursuant to Section 42(g) of the Act, 415 ILCS 5/42(g) (2004), interest shall accrue on any payment not paid within the time period prescribed above at the maximum rate allowable under Section 1003(a) of the Illinois Income Tax Act, 35 ILCS 5/1003 (2004). Interest on any unpaid payment shall begin to accrue from the date the payment is due and continue to accrue until the date payment is received. When partial payment(s) are made, such partial payment shall be first applied to any interest on unpaid payment then due and owing. All interest on payment owed shall be paid by certified check or money order, payable to the Illinois EPA, designated to the Illinois Environmental Protection Trust Fund and delivered to the address and in the manner described above.

3. For purposes of payment and collection, Respondent Michel may be reached at the following address:

Caryle Michel
22 Wildwood Dr.
Mt. Vernon, Illinois 62864

4. In the event of default of this Section VIII.A, the Complainant shall be entitled to all available relief including, but not limited to, reasonable costs of collection and reasonable attorney's fees.

B. Future Use

Notwithstanding any other language in this Stipulation to the contrary, the Respondent Michel agrees that this Stipulation may be used against the Respondent Michel in any subsequent enforcement action as proof of a past adjudication of violation of the Act and the Board Regulations promulgated thereunder for all violations alleged in the Third Amended Complaint in this matter, for purposes of Section 39(a) and (i) and/or 42(h) of the Act, 415 ILCS 5/39(a) and (i) and/or 5/42(h)(2004). Further, Respondent Michel agrees to waive any rights to contest, in any subsequent enforcement action, any allegations that these alleged violations were adjudicated.

C. Correspondence, Reports and Other Documents

Any and all correspondence, reports and any other documents required under this Stipulation, except for payments pursuant to Section IX. of this Stipulation, shall be submitted as follows:

As to the Complainant

Phillip McQuillan
Assistant Attorney General (or other designee)
Environmental Bureau
500 South Second Street
Springfield, Illinois 62702

Charles Gunnarson
Assistant Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

As to the Respondent Michel

Doug Antonik
Attorney at Law
P. O. Box 594
Mt. Vernon, Illinois 62864

As to the Respondent Todd

F. William Bonan
Bonan, Bonan & Rowland
Attorneys at Law
P. O. Box 309
McLeansboro, IL 62859

D. Right of Entry

1. In addition to any other authority, the Illinois EPA, its employees and representatives, and the Attorney General, her agents and representatives, shall have the right of entry into and upon the Respondent Michel's current and former facilities which are the subject of this Stipulation, at all reasonable times for the purposes of carrying out inspections. In conducting such inspections, the Illinois EPA, its employees and representatives, and the Attorney General, her employees and representatives may take photographs, samples, and collect information, as they deem necessary.

2. Respondent Todd shall allow access to the Broughton site for the purpose of soil and water testing which shall be paid for by Respondent Michel. If remediation work is required, based upon the results of the soil or water testing, at the Broughton site, Respondent Todd shall allow access to the Broughton site for remediation work which shall be paid for by Respondent Michel.

E. Compliance Plan

Respondent Michel shall submit a Site Assessment Plan ("SAP") to the Illinois EPA within sixty (60) days of the order and opinion of the Pollution Control Board's ruling on this Stipulation and Proposal for Settlement. The SAP must be approved or rejected by the Illinois EPA. If the SAP is rejected by the Illinois EPA, Respondent Michel shall submit a revised SAP that meets the approval of the Illinois EPA. The SAP shall provide for a minimum of four soil borings to be

collected from the operational area of the Broughton site. Each of the soil sampling sites should have samples collected at the 0" to 6" level and again at the 18" to 24" level. Each of the eight soil samples should be analyzed for the following parameters: alachlor, atrazine, metolachlor, pendimethalin, trifluralin, metribuzin, cyanazine, simazine, ammonia, and nitrates-N.

The Site Assessment Plan shall further provide for a minimum of three soil sedimentation samples to be collected along the centerline of the drainage ditch along Illinois Route 142 adjacent to the Broughton site. The sediment samples should be a composite of the sediment from the ditch surface down to the hardpan. These samples should be analyzed for the same parameter as the operational area soil samples as listed above.

If the laboratory analysis of the soil samples listed above shows that any sample fails to meet TACO Tier 1 Soil Remediation Objectives for Residential Properties for the parameters of the compounds: alachlor, atrazine, metolachlor, pendimethalin, trifluralin, metribuzin, cyanazine, simazine, ammonia, and nitrates-N, then Respondent Michel shall formulate and submit to the Illinois EPA a corrective action plan to remediate the presence of the excess compound(s). The corrective action plan must be approved or rejected by the Illinois EPA. If the corrective action plan is rejected by the Illinois EPA, Respondent Michel shall submit a revised corrective action plan that meets the approval of the Illinois EPA. Once approved by the Illinois EPA, the corrective action plan must be implemented by Respondent Michel. At the conclusion of the corrective action plan work, the Broughton site is to be tested again in conformity with the procedures, requirements, and standards set forth herein as provided in this Section VIII. E. Compliance Plan.

F. Cease and Desist

Respondent Michel shall cease and desist from future violations of the Act and Board regulations that were the subject matter of the Third Amended Complaint as outlined in Section III.C. of this Stipulation.

G. Release from Liability-Respondent Michel

In consideration of the Respondent Michel's payment of the $5,000.00 penalty, upon the completion of all activities required hereunder, and upon the Pollution Control Board's acceptance and approval of the terms of this Stipulation, the Complainant releases, waives and discharges the Respondent Michel from any further liability or penalties for violations of the Act and Board regulations that were the subject matter of the Third Amended Complaint herein. The release set forth above does not extend to any matters other than those expressly specified in Complainant's Third Amended Complaint filed on September 20, 2002. The Complainant reserves, and this Stipulation is without prejudice to, all rights of the State of Illinois against the Respondent Michel with respect to all other matters, including but not limited to, the following:

a. criminal liability;

b. liability for future violation of state, federal, local, and common laws and/or regulations;

c. liability for natural resources damage arising out of the alleged violations; and

d. liability or claims based on the Respondent Michel's failure to satisfy the requirements of this Stipulation.

Nothing in this Stipulation is intended as a waiver, discharge, release, or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the State of Illinois or the Illinois EPA may have against any person, as defined by Section 3.315 of the Act, 415 ILCS 5/3.315, or entity other than the Respondent Michel.

H. **Release from Liability-Respondent Todd**

In consideration of Respondent Todd allowing access to the Broughton site for soil and water testing and allowing access for remediation work, if necessary, and upon the Pollution Control Board's acceptance and approval of the terms of this Stipulation, the Complainant releases, waives and discharges the Respondent Todd from any further liability or penalties for violations of the Act and Board regulations that were the subject matter of the Third Amended Complaint herein.

I. **Enforcement of Board Order**

1. Upon the entry of the Board's Order approving and accepting this Stipulation, that Order is a binding and enforceable order of the Illinois Pollution Control Board and may be enforced as such through any and all available means.

2. Respondent Michel agrees that notice of any subsequent proceeding to enforce the Board Order approving and accepting this Stipulation may be made by mail and waives any requirement of service of process.

3. The parties agree that, if the Board does not approve and accept this Stipulation, then none of the parties are bound by the terms herein.

4. It is the intent of the Complainant and Respondent Michel that the provisions of this Stipulation and any Board Order accepting and approving such shall be severable, and should any provision be declared by a court of competent jurisdiction to be inconsistent with state or federal law, and therefore unenforceable, the remaining clauses shall remain in full force and effect.

WHEREFORE, Complainant and Respondents request that the Board adopt and accept the foregoing Stipulation as written.

PEOPLE OF THE STATE OF ILLINOIS,

LISA MADIGAN
Attorney General
State of Illinois

MATTHEW J. DUNN, Chief
Environmental Enforcement/
Asbestos Litigation Division

BY: _____ DATE: 10/18/07
THOMAS DAVIS, Chief
Environmental Bureau
Assistant Attorney General

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BY: _____ DATE: _____
ROBERT A. MESSINA
Chief Legal Counsel

RESPONDENT MICHEL:
MICHEL GRAIN COMPANY, INC.,
MICHEL FERTILIZER, and
CARYLE MICHEL

DATE: 10-3-07

BY: _____
CARYLE MICHEL, (Individually, and for Michel Grain Company, Inc., and Michel Fertilizer)

RESPONDENT TODD:
RONNIE TODD and
RONNIE TODD LAND TRUST

BY: Ronnie Todd

DATE: 10-10-07

RONNIE TODD (Individually, and as
Trustee of Ronnie Todd Land Trust)

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 24

SUPPLEMENT TO JOHN SEYMOUR EXPERT REPORT

Supplement to the Expert Report of John Seymour, P.E.

I have prepared this Supplement to the Expert Report on behalf of Midwest Generation, LLC (MWG) to address a mathematical issue in § 5.5.2 of my Expert Report. This supplemental § 5.5.2 replaces the original §5.5.2 in its entirety, including Tables 5-4 and 5-5. This supplemental does not change my opinions presented in my Expert Report in the Matter of:

SIERRA CLUB, ENVIRONMENTAL LAW AND POLICY CENTER, PRAIRIE RIVERS NETWORK, and CITIZENS AGAINST RUINING THE ENVIRONMENT
Complainants,
v
MIDWEST GENERATION, LLC,
Respondent
PCB 2013-0015

Revised Section 5.5.2: Recent Groundwater Concentrations do Not Match Constituent Indicators for Leachate from Ash Stored in Ponds

I compared the occurrence of constituents during groundwater monitoring events in the most recent year, 2014, to the minimum and maximum sets of constituent indicators of leachate from ash currently stored in ponds. Conceptually, if all the constituents detected in groundwater samples from a monitoring well match the constituents detected in leachate from ash currently stored in ponds, and if constituents *not* detected in groundwater samples match the constituents *not* detected in leachate from ash currently stored in ponds, then it would be probable that leachate from ash currently stored in ponds is impacting groundwater (i.e. as of sample dates). To evaluate whether or not groundwater concentrations match leachate constituent indicators, I calculated the percentage of constituents detected at each groundwater monitoring well that match constituent indicators of leachate from ash currently stored in the ponds ("matching percentages"). I restricted my analysis to the most recent full year of groundwater monitoring, 2014, to account for seasonal variations in constituent concentrations and to reflect groundwater concentrations after MWG's pond relining and pond decommissioning had been completed.

For the maximum set of constituent indicators, indicators included constituents that were detected by EPRI (2006) and were detected in groundwater monitoring wells. The percentage of observed constituents that are not consistent with indicators of leachate from ash that was stored in impoundments based on EPRI 2006 is based on the following formula based on a maximum set of

indicator parameters. A division is performed with a numerator of the number of indicator constituents that are not consistent and with a denominator of the total number of indicators and constituents detected in groundwater monitoring wells. The formula result is expressed as a percentage by multiplying by 100 percent. (See Table 5-4.)

For the minimum set of constituent indicators, detection limits for MWG site specific data meet current IEPA Class I groundwater goals with the exception of arsenic, which met the former Class I groundwater goal that was applicable at the time of analysis. The percentage of observed constituents that are not consistent with indicators of leachate from ash currently stored in impoundments is based on the following corrected formula based on a minimum set of indicator parameters. A division is performed with a numerator of the minimum number of indicator constituents and with a denominator of the total number of constituents observed at that monitoring well. The denominator includes constituents that are both consistent and not consistent with the indicator parameters. The formula result is expressed as a percentage by multiplying by 100 percent. (See Table 5-5.)

In summary, if the constituents match then it is likely that the leachate from the ash is impacting the groundwater. Moreover, if the constituents *do not* match then it is likely that the leachate from ash currently in ponds *is not* impacting the groundwater.

My results are tabulated in Tables 5-4 and 5-5 and are summarized as follows:

- At Joliet #29, the percentage of constituents at groundwater monitoring wells that do not match constituent indicators of leachate from ash currently stored in the ponds ranges from
    - 40 percent to 70 percent based on the minimum set of indicators (MWG specific data), and
    - 44 percent to 63 percent based on the maximum set of indicators (EPRI data).
- At Powerton, the percentage of constituents at groundwater monitoring wells that do not match constituent indicators of leachate from ash currently stored in the ponds ranges from
    - 25 percent to 70 percent based on the minimum set of indicators (MWG specific data), and
    - 38 percent to 69 percent based on the maximum set of indicators (EPRI data).
- At Waukegan, the percentage of constituents at groundwater monitoring wells that do not match constituent indicators of leachate from ash currently stored in the ponds ranges from

  - 50 percent to 63 percent based on the minimum set of indicators (MWG specific data), and
  - 50 percent to 69 percent based on the maximum set of indicators (EPRI data).
- At Will County, the percentage of constituents at groundwater monitoring wells that do not match constituent indicators of leachate from ash currently stored in the ponds ranges from
  - 57 percent to 70 percent based on the minimum set of indicators (MWG specific data), and
  - 44 percent to 63 percent based on the maximum set of indicators (EPRI data).

The non-matching percentages demonstrate that there are substantial and widespread mismatches between the characteristics of recent groundwater analyzed near the ash ponds and the characteristics of leachate from ash currently stored in the ash basins. Thus, it is my opinion that the recent groundwater impacts are not a result of the ash currently stored in ponds at the sites, but instead are more likely than not a result of historical uses at the sites and the surrounding industrial companies and conditions.[1]

[1] IEPA, 2015 and MWG13-15_29775-29776.

Reservation

I am reserving the ability to supplement my opinions in response to any documents or bases for Dr. Kunkel's reports that are presented by the Complainants. In addition, my opinions may be supplemented based on future changes in the construction or operation of the generating stations and in response to any future changes in groundwater conditions observed at the sites.

Signature

This supplement contains 15 pages, including tables.

_____ 29 February 2016_____

John Seymour, P.E. DATE

Table 5-4
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Actual Leachate Sample Results for Bituminous Ash Stored in Impoundments (EPRI, 2006)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]										
		Joliet No. 29 Generating Station										
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11
Antimony	Yes (Table 5-2)											
Arsenic	Yes (Table 5-2)			x	x		x	x				x
Barium	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x
Boron	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x
Cadmium	Yes (Table 5-2)					x			x			
Chromium	Yes (Table 5-2)											
Cobalt	Yes (Table 5-2)				x		x			x		
Copper	Yes (Table 5-2)					x	x	x	x			
Iron					x				x	x		
Lead	Yes (Table 5-2)								x			
Manganese	Yes (Table 5-2)	x				x		x	x	x		
Mercury	Yes (Table 5-2)											
Nickel	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x
Selenium	Yes (Table 5-2)		x	x		x	x	x			x	x
Sulfate	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x
Zinc	Yes (Table 5-2)								x			
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		10	10	9	10	7	7	7	7	10	10	9
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		63%	63%	56%	63%	44%	44%	44%	44%	63%	63%	56%

Table 5-4
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Actual Leachate Sample Results for Bituminous Ash Stored in Impoundments (EPRI, 2006)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]														
		Powerton Generating Station														
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16
Antimony	Yes (Table 5-2)																
Arsenic	Yes (Table 5-2)						x	x	x	x		x	x	x	x	x	
Barium	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Boron	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cadmium	Yes (Table 5-2)														x		
Chromium	Yes (Table 5-2)																
Cobalt	Yes (Table 5-2)						x	x		x	x	x					
Copper	Yes (Table 5-2)			x	x	x					x						
Iron							x	x	x		x	x	x	x	x	x	
Lead	Yes (Table 5-2)		x	x				x		x	x						
Manganese	Yes (Table 5-2)				x	x	x	x	x	x	x	x	x	x	x	x	x
Mercury	Yes (Table 5-2)																
Nickel	Yes (Table 5-2)			x	x	x	x	x		x	x	x	x		x	x	
Selenium	Yes (Table 5-2)	x				x				x	x			x	x	x	
Sulfate	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Zinc	Yes (Table 5-2)			x													
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		11	11	8	9	8	9	8	11	6	7	9	10	10	9	9	11
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		69%	69%	50%	56%	50%	56%	50%	69%	38%	44%	56%	63%	63%	56%	56%	69%

Table 5-4
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Actual Leachate Sample Results for Bituminous Ash Stored in Impoundments (EPRI, 2006)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]						
		Waukegan Generating Station						
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Antimony	Yes (Table 5-2)							
Arsenic	Yes (Table 5-2)	x	x	x	x	x	x	x
Barium	Yes (Table 5-2)	x	x	x	x	x	x	x
Boron	Yes (Table 5-2)	x	x	x	x	x	x	x
Cadmium	Yes (Table 5-2)							
Chromium	Yes (Table 5-2)							
Cobalt	Yes (Table 5-2)							
Copper	Yes (Table 5-2)	x					x	
Iron			x			x	x	x
Lead	Yes (Table 5-2)			x				
Manganese	Yes (Table 5-2)	x	x	x	x	x	x	x
Mercury	Yes (Table 5-2)							
Nickel	Yes (Table 5-2)					x		
Selenium	Yes (Table 5-2)	x	x	x	x		x	
Sulfate	Yes (Table 5-2)	x	x	x	x	x	x	x
Zinc	Yes (Table 5-2)							
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		8	10	8	9	10	9	11
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		50%	63%	50%	56%	63%	56%	69%

Table 5-4
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Actual Leachate Sample Results for Bituminous Ash Stored in Impoundments (EPRI, 2006)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]									
		Will County Generating Station									
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Antimony	Yes (Table 5-2)										
Arsenic	Yes (Table 5-2)		x	x	x	x	x	x	x	x	x
Barium	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x
Boron	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x
Cadmium	Yes (Table 5-2)										
Chromium	Yes (Table 5-2)										
Cobalt	Yes (Table 5-2)	x		x	x						
Copper	Yes (Table 5-2)										
Iron		x	x	x	x		x	x	x		x
Lead	Yes (Table 5-2)										
Manganese	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x
Mercury	Yes (Table 5-2)				x						
Nickel	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x
Selenium	Yes (Table 5-2)	x		x	x	x	x	x	x	x	
Sulfate	Yes (Table 5-2)	x	x	x	x	x	x	x	x	x	x
Zinc	Yes (Table 5-2)										
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		9	10	8	7	8	9	9	9	8	10
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		56%	63%	50%	44%	50%	56%	56%	56%	50%	63%

Abbreviations:
"x" = constituent was detected above analytical detection limits during at least one quarterly groundwater monitoring event in 2014

Table 5-4
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Actual Leachate Sample Results for Bituminous Ash Stored in Impoundments (EPRI, 2006)

Notes:

1. Indicators of leachate from ash stored in impoundments are based on leachate sample results for bituminous ash stored in impoundments (Table 5-2) as denoted in this table as "Yes (Table 5-2)". Indicator include constituents that were detected by EPRI (2006) and were detected in groundwater monitoring wells.(Thallium, which was detected only at Powerton MW-14, was not included as an indicator.)
2. Shading of cells is described below.

Green shading indicates that a constituent that is an indicator of leachate from ash stored in the impoundments was not detected during quarterly groundwater monitoring in 2014.

Blue shading indicates that a constituent that is not an indicator of leachate from ash stored in the impoundments was detected during at least one quarterly groundwater monitoring event in 2014.

No shading indicates that either (1) a constituent that is an indicator of leachate from ash stored in the impoundments was detected during at least one quarterly groundwater monitoring event in 2014, or (2) a constituent that is not an indicator of leachate from ash stored in the impoundments was not detected during quarterly groundwater monitoring in 2014.

3. Green and blue shading (see Note 2) demonstrate observed constituents that are not consistent with indicators of leachate from ash stored in impoundments.
4. The percentage of observed constituents that are not consistent with indicators of leachate from ash stored in impoundments is based on the following formula based on a maximum set of indicator parameters. A division is performed with a numerator of the number of indicator consituents that are not consistent and corrected a denominator of the total number of constituents detected at that groundwater monitoring well. The denominator includes observed constituents that are both consistent and not consistent with the indicator parameters. The formula result is expressed as a percentage by multiplying by 100 percent.

Table 5-5
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Site-Specific NLET Results for Bottom Ash (Midwest Generation Site-Specific Analyses)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]										
		Joliet No. 29 Generating Station										
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11
Arsenic				x	x		x	x				x
Barium	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x	x
Boron	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x	x
Cadmium						x			x			
Cobalt					x		x			x		
Copper						x	x	x	x			
Iron					x				x	x		
Lead									x			
Manganese		x				x		x	x	x		
Nickel		x	x	x	x	x	x	x	x	x	x	x
Selenium			x	x		x	x	x			x	x
Sulfate	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x	x
Zinc									x			
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		2	2	3	4	5	5	5	7	4	2	3
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		40%	40%	50%	57%	63%	63%	63%	70%	57%	40%	50%

Table 5-5
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Site-Specific NLET Results for Bottom Ash (Midwest Generation Site-Specific Analyses)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]															
		Powerton Generating Station															
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16
Arsenic							x	x	x	x		x	x	x	x	x	
Barium	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Boron	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Cadmium															x		
Cobalt							x	x		x	x	x					
Copper				x	x	x					x						
Iron							x	x	x		x	x	x	x	x	x	
Lead			x	x				x		x	x						
Manganese					x	x	x	x	x	x	x	x	x	x	x	x	x
Nickel				x	x	x	x	x		x	x	x	x		x	x	
Selenium		x				x				x	x			x	x	x	
Sulfate	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Zinc				x													
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		1	1	4	3	4	5	6	3	6	7	5	4	4	7	5	1
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		25%	25%	57%	50%	57%	63%	67%	50%	67%	70%	63%	57%	57%	70%	63%	25%

Table 5-5
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Currently Stored in Impoundments
Based on Site-Specific NLET Results for Bottom Ash (Midwest Generation Site-Specific Analyses)

Constituent	Constituent is an Indicator of Leachate from Ash Currently Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]						
		Waukegan Generating Station						
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Arsenic		x	x	x	x	x	x	x
Barium	Yes (Table 5-1)	x	x	x	x	x	x	x
Boron	Yes (Table 5-1)	x	x	x	x	x	x	x
Copper		x					x	
Iron			x			x	x	x
Lead				x				
Manganese		x	x	x	x	x	x	x
Nickel						x		
Selenium		x	x	x	x		x	
Sulfate	Yes (Table 5-1)	x	x	x	x	x	x	x
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [3]		4	4	4	3	4	5	3
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Currently Stored in Impoundments [4]		57%	57%	57%	50%	57%	63%	50%

Table 5-5
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Stored in Impoundments
Based on Site-Specific NLET Results for Bottom Ash (Midwest Generation Site-Specific Analyses)

Constituent	Constituent is an Indicator of Leachate from Ash Stored in Impoundments [1]	Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring [2]									
		Will County Generating Station									
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
Arsenic			x	x	x	x	x	x	x	x	x
Barium	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x
Boron	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x
Cobalt		x		x	x						
Iron		x	x	x	x		x	x	x		x
Manganese		x	x	x	x	x	x	x	x	x	x
Mercury					x						
Nickel		x	x	x	x	x	x	x	x	x	x
Selenium		x		x	x	x	x	x	x	x	
Sulfate	Yes (Table 5-1)	x	x	x	x	x	x	x	x	x	x
Number of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Stored in Impoundments [3]		5	4	6	7	4	5	5	5	4	4
Percentage of Observed Constituents that are not Consistent with Indicators of Leachate from Ash Stored in Impoundments [4]		63%	57%	67%	70%	57%	63%	63%	63%	57%	57%

Abbreviations:
"NLET" = neutral leaching extraction test (ASTM D3987-85)
"x" = constituent was detected above analytical detection limits during at least one quarterly groundwater monitoring event in 2014

Table 5-5
Summary of Constituents Detected during Most Recent Year (2014) of Quarterly Groundwater Monitoring Compared to Indicators of Leachate from Ash Stored in Impoundments
Based on Site-Specific NLET Results for Bottom Ash (Midwest Generation Site-Specific Analyses)

Notes:

1. Indicators of leachate from ash stored in impoundments is based on site-specific NLET results for bottom ash (Table 5-1). Detection limits presented in Table 5-1 meet current IEPA Class I groundwater goals with the exception of arsenic, which met the former Class I groundwater goal that was applicable at the time of analyis.

2. Shading of cells is described below.

Green shading, which is not applicable ot this Table 5-5, would indicate that a constituent that is an indicator of leachate from ash stored in the impoundments was not detected during quarterly groundwater monitoring in 2014.

Blue shading indicates that a constituent that is not an indicator of leachate from ash stored in the impoundments was detected during at least one quarterly groundwater monitoring event in 2014.

No shading indicates that either (1) a constituent that is an indicator of leachate from ash stored in the impoundments was detected during at least one quarterly groundwater monitoring event in 2014, or (2) a constituent that is not an indicator of leachate from ash stored in the impoundments was not detected during quarterly groundwater monitoring in 2014.

3. Green and blue shading (see Note 2) demonstrate observed constituents that are not consistent with indicators of leachate from ash stored in impoundments.
4. The percentage of observed constituents that are not consistent with indicators of leachate from ash stored in impoundments is based on the following corrected formula based on a minimum set of indicator parameters. A division is performed with a numerator of the minimum number of observed consituents that are not consistent and with a denominator of the total number of indicators and constituents observed at that monitoring well. The denominator includes observed constituents that are both consistent and not consistent with the indicator parameters. The formula result is expressed as a percentage by multiplying by 100 percent.

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

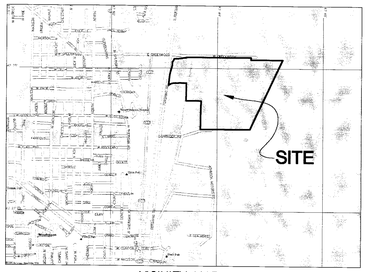
RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 25

WAUKEGAN SURVEY

ALTA/ACSM LAND TITLE SURVEY
OF
WAUKEGAN COAL FIRED GENERATING STATION
WAUKEGAN, ILLINOIS

PART OF THE NORTHEAST, NORTHWEST, SOUTHEAST, AND SOUTHWEST QUARTERS OF SECTION 15, TOWNSHIP 45 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN IN THE CITY OF WAUKEGAN, LAKE COUNTY, ILLINOIS.



VICINITY MAP
NOT TO SCALE

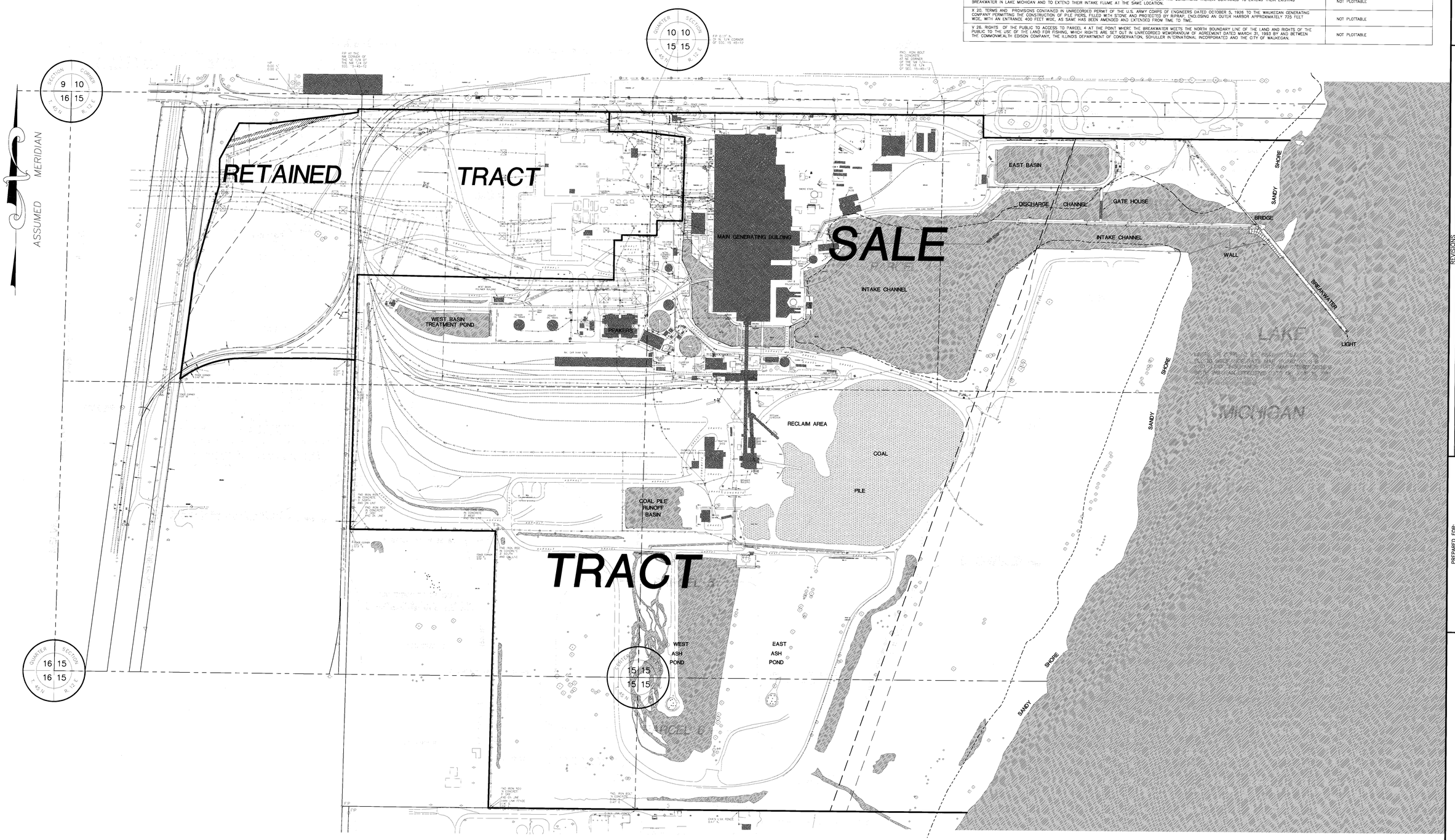
GRAPHIC SCALE
150 0 75 150 300 600
1" = 150'

TRACT EXHIBIT

NOTES FOR SCHEDULE B

THE FOLLOWING DOCUMENTS AS LISTED IN SCHEDULE B OF TITLE COMMITMENT ORDER NO. 1409 000623047, EFFECTIVE DATE NOVEMBER 13, 1998 AFFECT THE PROPERTY DESCRIBED HEREIN AS SALE TRACT AND ARE NOT PLOTTABLE UNLESS OTHERWISE NOTED.

E. 8. RIGHTS, IF ANY, OF THE UNITED STATES OF AMERICA, THE STATE OF ILLINOIS, THE MUNICIPALITY AND THE PUBLIC IN AND TO SO MUCH OF THE LAND, IF ANY, AS MAY HAVE BEEN FORMED BY MEANS OTHER THAN NATURAL ACCRETIONS. THIS COMMITMENT/POLICY DOES NOT INSURE TITLE TO ANY LAND THAT HAS BEEN FORMED BY OTHER NATURAL ACCRETIONS.	NOT PLOTTABLE
T. 9. RIGHTS, IF ANY, OF THE UNITED STATES OF AMERICA, THE STATE OF ILLINOIS, THE MUNICIPALITY AND THE PUBLIC IN AND TO THAT PART OF THE LAND LYING UNDER THE WATERS OF LAKE MICHIGAN; AND THE RIGHTS OF OTHERS OWNERS OF LAND BORDERING ON THE LAKE IN RESPECT TO THE USE OF THE WATERS OF SAID LAKE. (AFFECTS THOSE PORTIONS OF THE LAND IDENTIFIED AS "INTAKE CHANNEL" AND "DISCHARGE CHANNEL" ON SDI CONSULTANTS, LTD. SURVEY DATED FEBRUARY 19, 1999)	NOT PLOTTABLE
F 10. RAILROAD RIGHTS OF WAY AND SPUR TRACKS, IF ANY, AS SHOWN ON SURVEY PREPARED BY SDI CONSULTANTS, LTD., SURVEY DATED FEBRUARY 19, 1999.	NOT PLOTTABLE
H. 11. NOTHING HEREIN SHALL BE CONSTRUCTED AS AN UNDERTAKING ON THE PART OF THE COMPANY TO INSURE ANY PORTION OF THE LAND FALLING WITHIN THAT PROPERTY CONVEYED TO THE CITY OF WAUKEGAN BY INSTRUMENT RECORDED AS DOCUMENT 61658, IN BOOK 104 OF DEEDS, PAGE 177, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF THE NORTH FRACTIONAL 1/2 OF THE NORTHEAST 1/4; THENCE SOUTH 66 FEET, THENCE EAST TO A POINT 300 FEET WEST OF THE SHORE OF THE LAKE; THENCE SOUTHERLY 100 FEET; THENCE EAST TO THE LAKE; NORTHWESTERLY ALONG SHORE LINE OF SECTION LINE AND THENCE WEST TO THE PONT OF BEGINNING. NOTE: THIS EXCEPTION WILL WAIVED UPON OUR RECEIPT OF A FINAL SURVEY ACCEPTABLE TO THE TITLE COMPANY.	SAME AS EXCEPTION TO PARCEL 4 AS SHOWN HEREON
P 17. TERMS AND PROVISIONS CONTAINED IN PERMIT DATED AUGUST 17, 1923 AND RECORDED AUGUST 24, 1923 IN BOOK 312 OF MORTGAGES, PAGE 330 AS DOCUMENT 228621; MADE BY THE DEPARTMENT OF PUBLIC WORKS AND BUILDING, DIVISION OF WATERWAYS OF THE STATE OF ILLINOIS TO WAUKEGAN GENERATING COMPANY, TO CONSTRUCT AND INTAKE AND DISCHARGE FLUME ON THE LINE OF THE WATERS EDGE OF LAKE MICHIGAN, ACCORDING TO THE SURVEY BY THE STATE OF ILLINOIS IN 1914 ON PART OF THE NORTH 1/2 OF THE FRACTIONAL NORTHEAST 1/4 OF SECTION 15, WITH A RESERVATION BY THE STATE OF ILLINOIS TO HAVE SAID FLUME REMOVED, IN WHOLE OR IN PART, IF AT ANY TIME ACCRETIONS ARE FORMED BEYOND THE 1914 SURVEY LINE.	NOT PLOTTABLE
Q 18. TERMS AND PROVISIONS CONTAINED IN PERMIT DATED APRIL 25, 1925 AND RECORDED MAY 26, 1925 IN BOOK 351, OF MORTGAGES, PAGE 260, AS DOCUMENT 258100 BY THE DEPARTMENT OF PUBLIC WORKS AND BUILDINGS, DIVISION OF WATERWAYS OF THE STATE OF ILLINOIS TO THE WAUKEGAN GENERATING COMPANY OF THE RIGHT, PERMISSION AND AUTHORITY TO CONSTRUCT A HARBOR ON THE LINE OF THE WATERS EDGE OF LAKE MICHIGAN ACCORDING TO THE SURVEY BY THE STATE OF ILLINOIS IN 1914 ON THE NORTH 1/2 OF FRACTIONAL NORTHEAST 1/4 OF SECTION 15 (EXCEPT THE SOUTH 25 FEET AND EXCEPT THE NORTH 66 FEET AND EXCEPT A TRACT DESCRIBED AS FOLLOWS: COMMENCING AT A POINT ON THE SOUTH LINE OF THE NORTH 66 FEET OF SAID NORTHEAST 1/4 WHICH IS 180 FEET EAST OF THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SAID SECTION 15; RUNNING THENCE SOUTH 100 FEET; THENCE EAST 418.8 FEET, MORE OR LESS, TO THE SHORELINE OF LAKE MICHIGAN; THENCE NORTHEASTERLY ALONG THE SHORELINE OF LAKE MICHIGAN, TO A POINT WHICH IS 66 FEET SOUTH, MEASURED AT RIGHT ANGLES FROM THE NORTH LINE OF SAID NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 15, AFORESAID; THENCE WEST 447.2 FEET TO THE POINT OF BEGINNING), WITH A RESERVATION BY THE STATE OF ILLINOIS TO HAVE SAID HARBOR REMOVED IN WHOLE OR IN PART, IF AT ANY TIME ACCRETIONS ARE FORMED BEYOND THE 1914 SURVEY LINE.	NOT PLOTTABLE
R 19. TERMS AND PROVISIONS CONTAINED IN PERMIT DATED AUGUST 8, 1931 AND RECORDED AUGUST 24, 1931 IN BOOK 506 OF MORTGAGES, PAGE 548, AS DOCUMENT 372242 BY THE STATE OF ILLINOIS TO WAUKEGAN GENERATING COMPANY OF THE RIGHT UNDER THE CONDITIONS THEREIN CONTAINED TO EXTEND THEIR EXISTING BREAKWATER IN LAKE MICHIGAN AND TO EXTEND THEIR INTAKE FLUME AT THE SAME LOCATION.	NOT PLOTTABLE
X 20. TERMS AND PROVISIONS CONTAINED IN UNRECORDED PERMIT OF THE U.S. ARMY CORPS OF ENGINEERS DATED OCTOBER 5, 1926 TO THE WAUKEGAN GENERATING COMPANY PERMITTING THE CONSTRUCTION OF PILE PIERS, FILLED WITH STONE AND PROTECTED BY RIPRAP, ENCLOSING AN OUTER HARBOR APPROXIMATELY 725 FEET WIDE, WITH AN ENTRANCE 400 FEET WIDE, AS SAME HAS BEEN AMENDED AND EXTENDED FROM TIME TO TIME.	NOT PLOTTABLE
V 26. RIGHTS OF THE PUBLIC TO ACCESS TO PARCEL 4 AT THE POINT WHERE THE BREAKWATER MEETS THE NORTH BOUNDARY LINE OF THE LAND AND RIGHTS OF THE PUBLIC TO THE USE OF THE LAND FOR FISHING, WHICH RIGHTS ARE SET OUT IN UNRECORDED MEMORANDUM OF AGREEMENT DATED MARCH 31, 1983 BY AND BETWEEN THE COMMONWEALTH EDISON COMPANY, THE ILLINOIS DEPARTMENT OF CONSERVATION, SCHULLER INTERNATIONAL INCORPORATED AND THE CITY OF WAUKEGAN.	NOT PLOTTABLE



REVISIONS		
NO.	DATE	DESCRIPTION
1	11-13-98	IN PROGRESS REVISION DATE
2	11-18-98	IN PROGRESS REVISION DATE
3	11-30-98	IN PROGRESS REVISION DATE
4	12-23-98	IN PROGRESS REVISION DATE
5	1-25-99	IN PROGRESS REVISION DATE
6	2-19-99	IN PROGRESS REVISION DATE

ALTA/ACSM LAND TITLE SURVEY
WAUKEGAN STATION, WAUKEGAN, IL.
DRAFTING COMPLETED: 11/11/98
FIELD WORK COMPLETED:
DRAWN BY: RSJ
CHECKED BY: RSJ
PROJECT MANAGER: RSJ
SCALE: 1" = 150'
Project No: 98156
Group No: V79
SHEET NO. 2 of 6

PREPARED FOR:
COMMONWEALTH EDISON COMPANY
1 N. 423 Swift Rd.
LOMBARD, IL. 60148
630.691.4407

SDI Consulting Engineers Surveyors
CONSULTANTS LTD.
2000 York Road
Oak Brook, IL 60523
630/571/0333
Fax 630/571/0436

MWG13-15.4AS

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 26

RELEVANT PAGES OF THE DEPOSITION OF JAMES DICOLA

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of	)	
	)	
SIERRA CLUB; ENVIRONMENTAL LAW & POLICY CENTER; PRAIRIE RIVERS NETWORK; and CITIZENS AGAINST RUINING THE ENVIRONMENT,	)	
	)	
Complainants,	)	
	)	
vs.	)	PCB No-2013-015
	)	(Enforcement-Water)
MIDWEST GENERATION, LLC,	)	
	)	
Respondent.	)	

The discovery deposition of JAMES DiCOLA, taken under oath on the 14th day of January 2015, at Suite 3600, 10 South LaSalle Street, Chicago, Illinois, pursuant to the Rules of the Supreme Court of Illinois and the Code of Civil Procedure, before Tracy L. Overocker, a notary public in and for the County of Will and State of Illinois, pursuant to notice.

A I don't know specifically was there -- other than being called an ash burial area, that's really the extent of what I know of it.

Q Okay. Do you know when it was buried or do you have any idea about that?

MS. NIJMAN: When ash was buried in that area during the ComEd days are you asking?

MR. ZAHAROFF: Yes. Yes.

MS. NIJMAN: Objection to the extent it calls for speculation.

If you actually know, you can answer.

THE WITNESS: I would be speculating. I don't know.

BY MR. ZAHAROFF:

Q Okay. Is there still -- do you know if there's still ash in that area?

A It's called an ash burial area. So with that name being tagged to it, I just assume there's ash there underneath the vegetation, but I don't know.

Q Okay. Do you know if anybody has checked to see if there's ash in that area?

A We have an annual inspection done as part of our Stormwater Pollution Prevention Plan where a

map. This is a ComEd map and the property boundaries are misleading. So I object to your term of "site."

BY MR. ZAHAROFF:

Q Are you familiar with an ash landfill or another ash placement area on the southwestern part of the Joliet 29 site?

MS. NIJMAN: Again, objection to the extent there is an area on the Joliet 29 site or not. It is unclear.

MR. ZAHAROFF: Okay.

BY MR. ZAHAROFF:

Q You can still answer, if you're familiar with an area.

A I am not.

Q Okay. We can put that map away and put the document away.

Do you know if there's anybody else at Midwest Gen who would be familiar with the southwestern part of the site and whether or not there's an ash placement area there?

A I don't know.

Q Have you been to that part of the site?

MS. NIJMAN: Again, objection to the reference to "that part of the site."

***SIERRA CLUB, ET AL. V. MIDWEST GENERATION, LLC* PCB 13-15**

RESPONSE TO MOTION FOR PARTIAL SUMMARY JUDGMENT

EXHIBIT 27

COAL ASH CHARACTERISTICS, MANAGEMENT, AND ENVIRONMENTAL ISSUES, EPRI, 2009

Coal Ash: Characteristics, Management and Environmental Issues

Table of Contents

Coal-fired power plants in the United States produce more than 92 million tons of coal ash per year. About 40% is beneficially used in a variety of applications, and about 60% is managed in storage and disposal sites. This technical update summarizes information and data on the physical and chemical characteristics of coal ash, beneficial use applications, disposal practices, and management practices to mitigate environmental concerns.

Introduction

The U.S. electric utility industry burns more than 1 billion tons of coal annually, with coal-fired generation supplying about 50% of the electricity used in the United States. The solids collected from the furnace and removed from the flue gas after the coal is combusted are collectively referred to as coal combustion products (CCPs), and can be broadly categorized as coal ash and flue gas desulfurization (FGD) solids. Information on FGD gypsum, the solid product from wet FGD systems with forced oxidation, is presented in a companion technical update document.

Coal is composed primarily of carbon and hydrogen, but all coal also contains some mineral matter (for example, clays, shales, quartz, and calcite); the percentage varies by coal type and source. Coal ash is the mineral matter that is collected after the coal is combusted, along with some unburned carbon. The amount of coal ash produced at a power plant depends on the volume of coal burned, the amount of mineral matter in the coal, and the combustion conditions. In 2007, U.S. coal-fired power plants produced about 92 million tons of coal ash, including 72 million tons of fly ash, 18 million tons of bottom ash, and 2 million tons of boiler slag.[1]

Formation and Physical Characteristics

The physical and chemical properties of coal ash are determined by reactions that occur during the high-temperature combustion of the coal and subsequent cooling of the flue gas. A considerable amount of research has gone into understanding how coal ash forms, its characteristics, and how it weathers in the environment.

Fly Ash

Fly ash refers to the lightweight particles that travel with the flue gas as it exits the furnace and moves away from the high-temperature combustion zone. Power plants are equipped with particulate collection devices, either electrostatic precipitators (ESPs) or baghouses, designed to remove nearly all of the fly ash from the flue gas prior to the stack to prevent it from being emitted to the atmosphere (Figure 1). An ESP uses electrically charged wires and plates to capture the fly ash; baghouses use fabric filters, similar to vacuum cleaner bags. Dry fly ash collected in the ESP or baghouse is then either pneumatically conveyed to a hopper or storage silo (dry management), or mixed with water and sluiced through a series of pipes to an on-site impoundment (wet management).

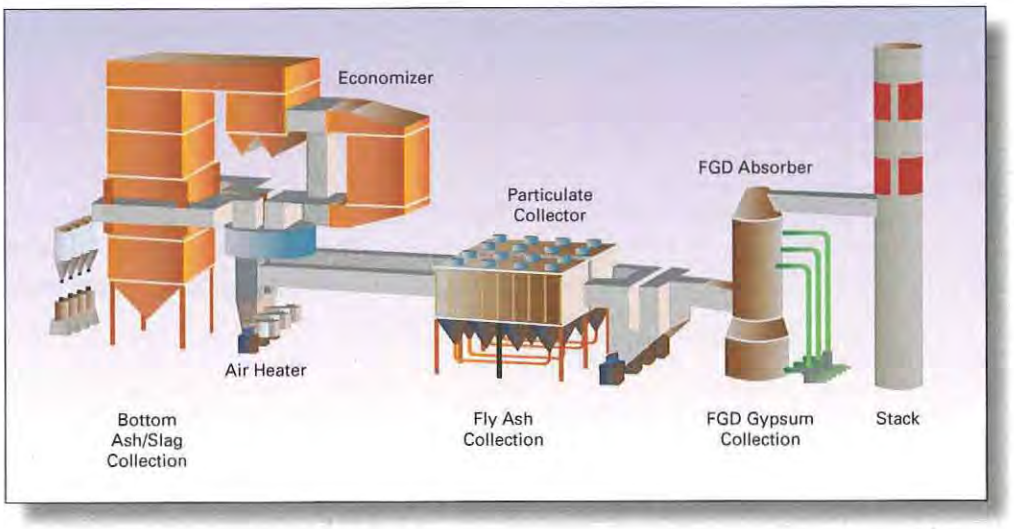


Figure 1. Typical power plant layout showing location of fly ash and bottom ash collection.

Fly ash is composed mainly of amorphous or glassy aluminosilicates. Fly ash particles are typically silt-sized spheres, ranging from 1 to 100 microns in diameter.

Fly ash particles are composed mainly of amorphous or glassy aluminosilicates. However, the particles also contain some crystalline compounds that either pass through the combustion zone unchanged or are formed at high temperatures. Elements such as arsenic and selenium that become volatile at high temperatures, preferentially condense on the surface of the ash particles as the flue gas cools.

Fly ash particles are typically spherical in shape, either solid or with vesicles (Figure 2). A small percentage are thin-walled hollow particles called cenospheres. The particles are fine-grained, typically silt-sized, ranging from 1 to 100 microns in diameter, with median particle diameter of 20 to 25 microns.[2] Fly ash is usually tan to dark gray in color.

Bottom Ash/Boiler Slag

Bottom ash consists of heavier particles that fall to the bottom of the furnace (see Figure 1). Bottom ash is also composed primarily of amorphous or glassy aluminosilicate materials derived from the melted mineral phases. Most bottom ash is produced in dry-bottom boilers, where the ash cools in a dry state. Boiler slag is a type of bottom ash collected in wet-bottom boilers (slag-tap or cyclone furnaces, which operate at very high temperatures), where the molten particles are cooled in a water quench.

Bottom ash is coarser than fly ash, with a sandy texture and particles ranging from about 0.1 mm to 50 mm in diameter.

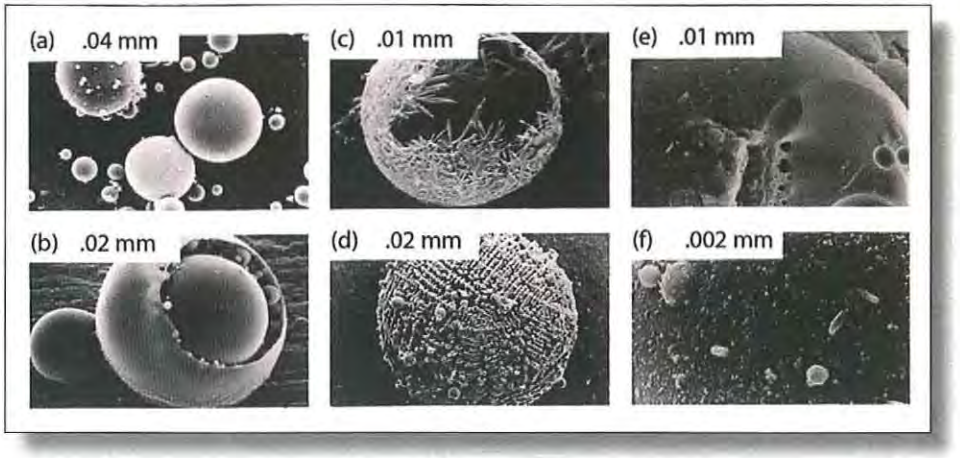


Figure 2. Scanning electron micrographs of fly ash. (a) Typical spherical morphology of glassy particles. (b) A large hollow sphere formed when entrapped gas expanded during thermal decomposition of calcium carbonate ($CaCO_3$). (c) A particle etched with hydrofluoric acid to remove surface glass and reveal a shell of interlocking mullite crystals. (d) A typical magnetic spinel mineral (magnetite) separated from ash after removal of encapsulating glass. (e) A fractured ash particle containing numerous vesicles. (f) The accumulation of tiny granules of inorganic oxides, crystals, and coalesced ash on the surface of a larger particle.

Whether collected from dry-bottom or wet-bottom boilers, bottom ash is usually mixed with water and conveyed away from the furnace in a sluice pipe. It is transported either to a dewatering bin or to an on-site impoundment.

Bottom ash is coarser than fly ash, with a sandy texture and particles ranging from about 0.1 mm to 50 mm in diameter. Bottom ash from dry-bottom boilers is generally dull black and porous in appearance. It typically has the consistency of coarse sand to gravel and higher carbon content than fly ash. Boiler slag is black and angular, and has a smooth, glassy appearance.

The properties of fly ash and bottom ash make them useful for a variety of construction applications. Table 1 lists ranges for some of the important geotechnical properties of fly ash and bottom ash.

The properties of fly ash and bottom ash make them useful for a variety of construction applications.

Table 1. Typical ranges for geotechnical properties of fly ash and bottom ash.[3]

Property	Fly Ash	Bottom Ash
Specific Gravity	2.1 – 2.9	2.3 – 3.0
Bulk Density (compacted), lbs/ft^3	65 – 110	65 – 110
Optimum Moisture Content, %	10 – 35	12 – 26
Hydraulic Conductivity, cm/s	10^{-4} – 10^{-6}	10^{-1} – 10^{-3}
Porosity	0.40 – 0.50	0.25 – 0.40
Angle of Internal Friction, degrees	25 – 40	35 – 45

Chemical Composition

The chemical composition of coal ash is determined primarily by the chemistry of the source coal and the combustion process. Because ash is derived from the inorganic minerals in the coal, such as quartz, feldspars, clays, and metal oxides, the major elemental composition of coal ash is

similar to the composition of a wide variety of rocks in the Earth's crust (Figure 3). Oxides of silicon, aluminum, iron, and calcium comprise more than 90% of the mineral component of typical fly ash (Figure 3). Minor constituents such as magnesium, potassium, sodium, titanium, and sulfur account for about 8% of the mineral component, while trace constituents such as arsenic, cadmium, lead, mercury, and selenium, together make up less than 1% of the total composition. Table 2 provides the typical range of major and trace constituents concentrations in fly ash and bottom ash, along with the range for rock and soil for comparison.

Because ash is derived from the inorganic minerals in the coal, the major elemental composition of coal ash is similar to a wide variety of rocks. Oxides of silicon, aluminum, iron, and calcium make up more than 90% of the mineral component of fly ash; trace constituents collectively make up less than 1 percent.

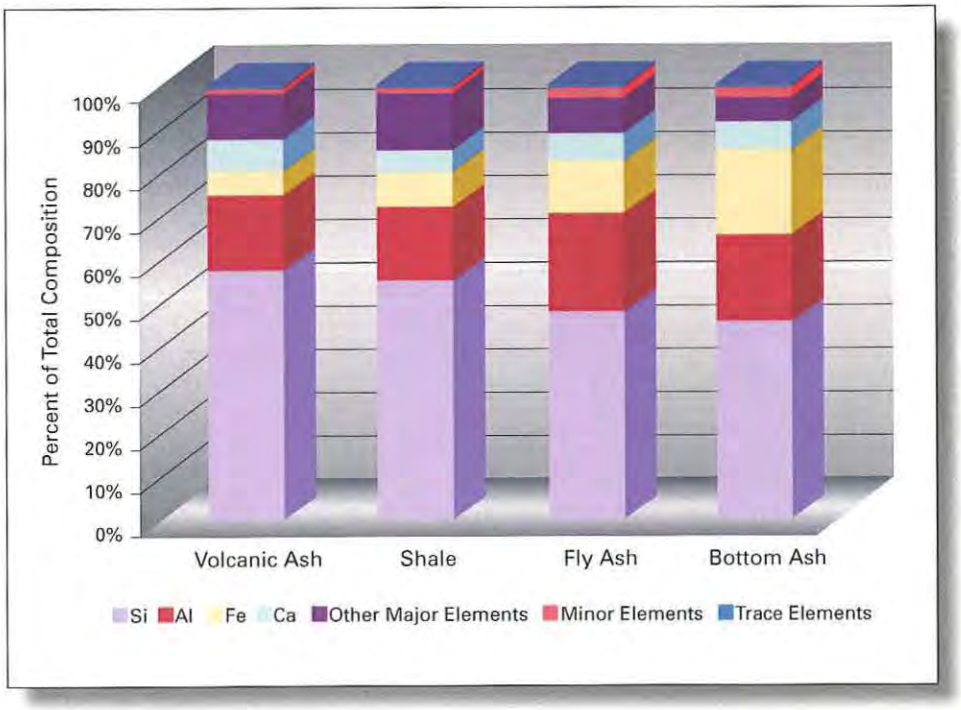


Figure 3. Elemental composition for bottom ash, fly ash, shale, and volcanic ash. Median values for ash are from EPRI database[3], and for rock are from Taylor and Litche (1980)[4] and Hem (1992).[5]

Fly ash also contains a variable amount of unburned carbon, depending on the combustion conditions. Unburned carbon is often measured by a laboratory test called loss-on-ignition (LOI). LOI values can range from less than 1% to more than 20%.

The relative calcium, iron, and sulfur contents of fly ash influence its fundamental chemical properties and reactivity. Subbituminous and lignite coal ashes typically contain relatively high concentrations of calcium, with concentrations exceeding 15% (expressed as CaO), and produce alkaline solutions (pH 11 – 12) on contact with water. Bituminous coal ashes generally contain much less calcium, and yield slightly acidic to slightly alkaline solutions (pH 5 – 10) on contact with water.

The chemical composition of coal ash can change as power plants change fuels or add new air emissions controls to prevent releases to the atmosphere.[10] Examples of air emissions controls that can impact fly ash composition include the use of ammonia-based systems to control NO_x, powdered activated carbon injection to control mercury, and sodium-based sorbents to control SO_3. Examples of fuel changes include blending of different coal types, and co-firing of biomass with

coal. EPRI maintains active research programs to evaluate the impacts of changes in emissions controls on the environmental and engineering characteristics of the ash.[11-13]

Table 2. Range (10th percentile – 90th percentile) in bulk composition of fly ash, bottom ash, rock, and soil.

	Fly Ash*	Bottom Ash*	Rock**	Soil***
Aluminum, mg/kg	70,000 – 140,000	59,000 – 130,000	9,800 – 96,000	15,000 – 100,000
Calcium, mg/kg	7,400 – 150,000	5,700 – 150,000	6,000 – 83,000	1,500 – 62,000
Iron, mg/kg	34,000 – 130,000	40,000 – 160,000	8,800 – 95,000	7,000 – 50,000
Silicon, mg/kg	160,000 – 270,000	160,000 – 280,000	57,000 – 380,000	230,000 – 390,000
Magnesium, mg/kg	3,900 – 23,000	3,400 – 17,000	700 – 56,000	1,000 – 15,000
Potassium, mg/kg	6,200 – 21,000	4,600 – 18,000	4,000 – 45,000	4,500 – 25,000
Sodium, mg/kg	1,700 – 17,000	1,600 – 11,000	900 – 34,000	1,000 – 20,000
Sulfur, mg/kg	1,900 – 34,000	BDL – 15,000	200 – 42,000	840 – 1,500
Titanium, mg/kg	4,300 – 9,000	4,100 – 7,200	200 – 5,400	1,000 – 5,000
Antimony, mg/kg	BDL – 16	All BDL	0.08 – 1.8	BDL – 1.3
Arsenic, mg/kg	22 – 260	2.6 – 21	0.50 – 14	2.0 – 12
Barium, mg/kg	380 – 5100	380 – 3600	67 – 1,400	200 – 1,000
Beryllium, mg/kg	2.2 - 26	0.21 – 14	0.10 – 4.4	BDL – 2.0
Boron, mg/kg	120 – 1000	BDL – 335	0.2 – 220	BDL – 70
Cadmium, mg/kg	BDL – 3.7	All BDL	0.5 – 3.6	BDL – 0.5
Chromium, mg/kg	27 – 300	51 – 1100	1.9 – 310	15 – 100
Copper, mg/kg	62 – 220	39 – 120	10 – 120	5.0 – 50
Lead, mg/kg	21 – 230	8.1 – 53	3.8 – 44	BDL – 30
Manganese, mg/kg	91 – 700	85 – 890	175 – 1400	100 – 1,000
Mercury, mg/kg	0.01 – 0.51	BDL – 0.07	0.1 – 2.0	0.02 – 0.19
Molybdenum, mg/kg	9.0 – 60	3.8 – 27	1.0 – 16	All BDL
Nickel, mg/kg	47 – 230	39 – 440	2.0 – 220	5 – 30
Selenium, mg/kg	1.8 – 18	BDL – 4.2	0.60 – 4.9	BDL – 0.75
Strontium, mg/kg	270 – 3100	270 – 2000	61 – 890	20 – 500
Thallium, mg/kg	BDL – 45	All BDL	0.1 – 1.8	0.20 – 0.70
Uranium, mg/kg	BDL – 19	BDL – 16	0.84 – 43	1.2 – 3.9
Vanadium, mg/kg	BDL – 360	BDL – 250	19 – 330	20 – 150
Zinc, mg/kg	63 – 680	16 – 370	25 – 140	22 – 99

BDL – Below Detection Limit

* Source for most fly ash and bottom ash data is EPRI CP-INFO Database[3]. Beryllium, thallium, mercury (bottom ash only) and boron (bottom ash only) are from the EPRI PISCES Database[6]

** Source for rock data is US Geological Survey National Geochemical database.[7]

*** Source for most soils data is Shacklette and Boerngen (1984)[8]; cadmium and thallium data are from Smith et al (2005).[9]

In 2007, 32 million tons of fly ash and 9.0 million tons of bottom ash and boiler slag were beneficially used. The primary use for fly ash was as a replacement for portland cement in making concrete.

Beneficial Use

The physical and chemical properties of coal ash make it suitable for many construction and geotechnical uses. In 2007, 32 million tons of fly ash were beneficially used, representing 44% of the total fly ash produced.[1] Similarly, 7.3 million tons of bottom ash (40%) and 1.7 million short tons of boiler slag (80%) were used. Figure 4 shows the amounts of fly ash used in various applications.

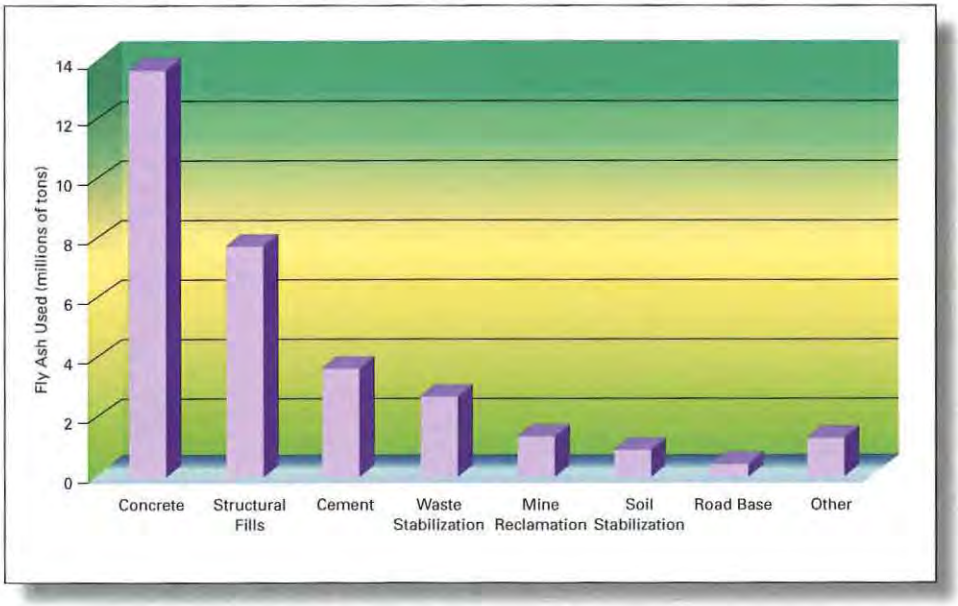


Figure 4. Beneficial uses of coal fly ash. Data are from the 2007 ACAA survey.[1]

In 2007, the use of fly ash to replace cement in concrete yielded energy savings equivalent to the annual energy use by over a half million households, and reduced CO_2 emissions equivalent to removing over 1.5 million cars from the road.

The primary use for fly ash is as an ingredient in concrete. Fly ash act as a pozzolan, a siliceous/aluminous material that develops cementitious properties when combined with calcium hydroxide and water. Fly ash can be used as a direct replacement for portland cement in concrete, and has been used in a wide variety of concrete applications in the United States for more than 60 years. The use of fly ash can significantly improve many concrete qualities, for example, strength, permeability, and resistance to alkali silicate reactivity. Standard specification ASTM C618 establishes the physical and chemical requirements of fly ash for use in concrete.[14]

In addition to improving the quality of concrete, the use of fly ash greatly reduces the energy use and CO_2 emissions associated with the production of concrete. In 2007, use of fly ash in concrete resulted in an estimated 55 trillion Btu in energy savings, and 10 million tons in avoided CO_2 emissions.[15] These numbers are equivalent to the annual energy use for over 600,000 households and removal of 1.7 million cars from the road, respectively. Other benefits of using ash include conservation of virgin materials such as limestone used in cement production, and reduced need for disposal sites.

In addition to concrete, applications that use more than 1 million tons per year of fly ash are structural fills, cement production, waste stabilization, and mine reclamation. The primary uses for the coarser bottom ash and boiler slag are for structural fills and road base materials, as blasting grit/roofing granules, and for snow and ice traction control.

US EPA actively promotes coal ash use under the Coal Combustion Partnership Program (C^2P^2), and has set a goal of 50% utilization by 2011.[16] The Federal Highway Administration provides technical guidance on the use and benefits of fly ash for highway construction projects.[17]

Disposal

Coal ash that is not beneficially used is placed in landfills and impoundments. About 60% of disposed fly ash is managed dry in landfills, and 40% is managed wet in impoundments. There

is a long-term trend toward increased use of dry management practices.[18,19]

Dry fly ash is typically loaded on trucks, wetted to prevent dusting, and then transported to a dedicated landfill facility. The landfill may be located on or off the power plant property. Wet-managed fly ash is typically sluiced to an on-site impoundment or series of impoundments, where the fly ash settles to the bottom of the ponds. In some cases, treatment chemicals may be added to the ash pond to improve settling, remove dissolved constituents, or control pH. The settled ash solids may either be dredged for beneficial use or for disposal, or may be left in place.

Ash management sites vary in age, size, and design. In most cases, the sites are operated under state-issued permits that specify applicable requirements for siting criteria, engineering controls (for example, liners, leachate collection, caps, slopes, and runoff control), groundwater monitoring, site closure, corrective action, and financial assurance. A study by US EPA and US Department of Energy (DOE) published in 2006 found that regulatory and engineering controls for new or expanded units permitted between 1994 and 2004 had tightened considerably, establishing engineering controls and groundwater monitoring as standard practice.[18] For example, 55 of 56 units assessed in that study employed engineered liners, with the only exception being one landfill that managed only bottom ash.

A study performed by US DOE and US EPA found that nearly all new CCP disposal units (55 of 56 units) studied between 1994 and 2004 employed liners to control leachate release.

In 1993 and again in 2000, following several years of study, the US EPA published regulatory determinations that coal ash and other combustion products did not warrant regulation as a hazardous waste.[20,21] Disposal is currently regulated under non-hazardous provisions by individual states. In 2009, US EPA is again evaluating the appropriate federal role in regulating disposal of coal combustion products.

Environmental Issues

Leaching

One of the primary environmental concerns at large storage and disposal sites is leaching and release of trace constituents to groundwater and surface water. Extensive testing has shown that coal ash rarely, if ever, exceeds hazardous waste criteria contained in the the Toxicity Characteristic Leaching Procedure (TCLP) promulgated under the Resource Conservation and Recovery Act.

Laboratory studies have demonstrated that the leaching process is complex and depends on a number of factors, primarily chemical speciation of the constituent, solution pH, and availability of the constituent for leaching. Availability for leaching depends on whether the element resides on the surface of the ash particle, in the outer glass hull, or within the interior glass matrix (see Figure 2).

In addition, subsequent chemical interactions and secondary mineral formation can further modify leaching characteristics of the ash. For example, because arsenic typically condenses on the surface of the fly ash particle, it may initially be available for leaching. However, the presence of calcium in the ash can limit the release of dissolved arsenic by formation of calcium-arsenic precipitates.[22] Weathering and formation of iron hydroxide compounds can also serve to sequester arsenic. Detailed leaching studies under controlled conditions are used to elucidate the mechanisms controlling constituent release and provide the best indication of the long-term potential for release and environmental risk.

While laboratory studies are used to define long-term leaching mechanisms, field studies provide

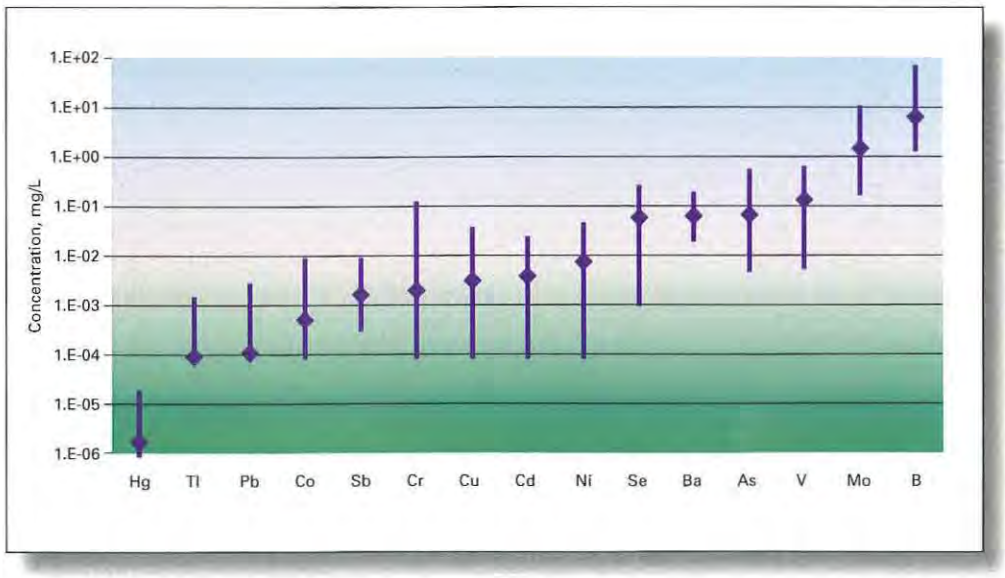


Figure 5. Field leachate concentrations for coal ash disposal sites. Bars show 10th percentile to 90th percentile, and diamond shows median. Source: EPRI CP-INFO Database.[3]

Coal ash rarely, if ever, exceeds hazardous waste criteria contained in the the Toxicity Characteristic Leaching Procedure (TCLP). While laboratory studies are used to understand leaching mechanisms, field studies provide the best information on leachate quality under actual environmental conditions.

the best information on leachate quality under actual environmental conditions. In 2006, EPRI, with support from the US DOE, completed an extensive characterization of field leachates at over 30 coal combustion product disposal facilities (Figure 5).[23] This study provides the most comprehensive database available for ash leachate characteristics representative of typical environmental conditions at disposal sites. The data in Figure 5 represent initial concentrations in the management facility, not the concentration that the public is exposed to; these data can be used as input to infiltration and groundwater transport models to assess the risk of contamination to a receptor, either a drinking water well or surface water body, and to develop the best management methods to prevent or mitigate those risks.

Leachate runoff and infiltration to groundwater can be controlled by a variety of standard engineering practices employed at disposal facilities. Depending on site-specific conditions, these practices may include use of liners, leachate collection systems, diversion ditches, caps, and vegetation. Monitoring networks are used to ensure the performance of the engineering controls in protecting groundwater and surface water resources.

Windblown Ash

Because of its fine-grained texture, dry fly ash is susceptible to blowing under windy conditions. Studies of the potential health effects associated with ash dust have largely focused on power plant workers, for whom exposure to dusty conditions is much more common than for the general public. While direct inhalation of fly ash or any respirable dust should be avoided, research has shown that worker exposure to ash dust during normal power plant operation does not result in exposures above health criteria.[24,25] Standard precautions such as dust masks are recommended when working in high-dust environments at power plants. At disposal sites, windblown ash is generally controlled by periodic wetting of open ash areas, and by covering inactive areas with bottom ash, soil, or vegetation.

Mercury

Research by US EPA, EPRI, and others has all shown that mercury is stable on fly ash at ambient temperatures, with very little potential for leaching or volatilization.

Mercury is an element of significant environmental interest because of its toxicity and occurrence in lakes and rivers. The median mercury concentration in coal is 0.11 mg/kg, and 80% of coal samples contain less than 0.25 mg/kg.[26] Information collected by the US EPA in the late 1990s indicated that in the United States about 40% of the mercury in coal was captured by the fly ash and/or the then existing SO_2 control, and 60% was released to the atmosphere.[27] The amount of mercury captured at any particular plant was found to depend on a number of factors, including coal type, coal chlorine content, particulate collection device, NO_x control, and flue gas desulfurization systems.

Mercury in fly ash generally ranges from about 0.05 mg/kg up to about 2 mg/kg, with typical concentrations between 0.1 mg/kg and 0.5 mg/kg. One of the leading approaches to further reduce mercury emissions from power plants is injection of activated carbon into the flue gas. The mercury sorbs onto the carbon, which is then captured with the fly ash in the ESP or baghouse. Although the mercury and carbon content in the fly ash are increased by this process, research by US EPA, EPRI, and others, has consistently shown that the carbon-bound mercury is very stable on the fly ash at ambient temperatures, with very low potential for leaching or volatilization.[13,28,29] Similarly, concrete containing fly ash exhibits very little mercury release and does not present a significant risk to the public.[30,31] High-temperature fly ash uses, such as use in cement kilns and hot-mix asphalt, may release mercury from fly ash to the air due to volatilization.

Radioactivity

"Radioactive elements in coal and fly ash should not be sources of alarm. The vast majority of coal and the majority of fly ash are not significantly enriched in radioactive elements, or in associated radioactivity, compared to soil or rocks."—US Geological Survey

Coal contains naturally occurring radioactive constituents, such as uranium and thorium and their decay products. Uranium and thorium are each typically present in coal at concentrations of 1 to 4 mg/kg.[32] These constituents are captured by the fly ash following combustion of the coal. Any radon gas present in the coal is lost to stack emissions.

Although the radionuclides are enriched in the fly ash in comparison to the coal itself, the US Geological Survey determined that the average radionuclide concentrations in ash are within

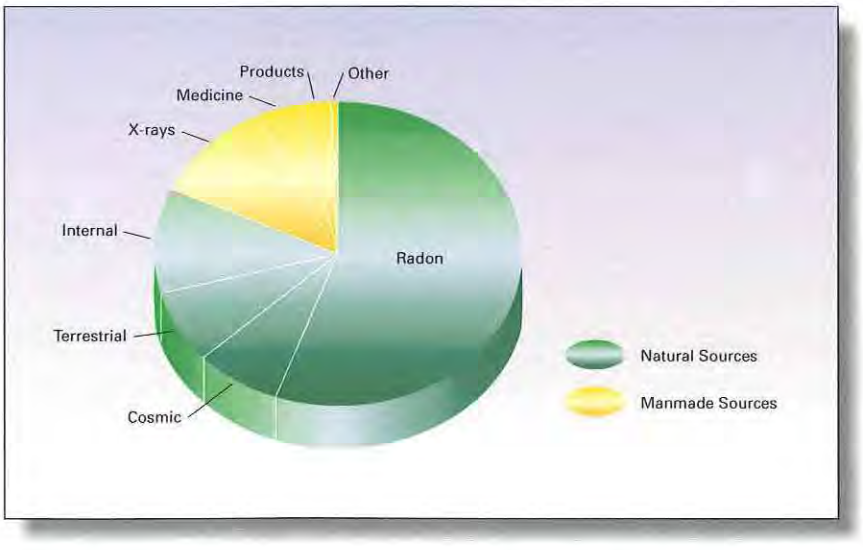


Figure 6. Distribution of background radiation sources comprising the total annual average radiation dose in the United States.[32,33]

the range of concentrations found in other geologic materials, such as granite and shale.[32] Background radiation exposure to the U.S. population is about 360 mrems/yr, with natural sources, primarily geologic materials and cosmic rays, accounting for about 82% of that total (Figure 6).[32,33] Man-made sources account for the remaining 18% of total exposure, with X-rays being the largest single source.

In a worst case evaluation, exposure to an outdoor worker at an ash storage facility (8 hrs/day for 225 days/yr) was estimated as 8 mrems/yr, or only about 2.3% of background exposure.[33] Similar results have been found in examining potential for radioactivity exposure to concrete made with a high proportion of fly ash.[32] Research by US EPA, US Geological Survey, EPRI, and others has shown that exposure to radiation from coal ash or concrete products made with fly ash does not represent a significant health risk.

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Electric Power Research Institute
3420 Hillview Avenue, Palo Alto, California 94304 • PO Box 10412, Palo Alto, California 94303 USA
800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com