

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

<b>SIERRA CLUB and</b>	)	
<b>PRAIRIE RIVERS NETWORK,</b>	)	
	)	
<b>Petitioners,</b>	)	
	)	
<b>v.</b>	)	<b>PCB 22</b>
	)	<b>APPEAL FROM IEPA</b>
<b>ILLINOIS ENVIRONMENTAL PROTECTION</b>	)	<b>DECISION GRANTING</b>
<b>AGENCY and WILLIAMSON ENERGY LLC,</b>	)	<b>NPDES PERMIT</b>
	)	
<b>Respondents.</b>	)	

**NOTICE OF FILING**

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the PETITION FOR REVIEW OF AN NPDES PERMIT DECISION BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, a copy of which is herewith served upon you.



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<b>AGENCY and WILLIAMSON ENERGY LLC,</b>	)	<b>NPDES PERMIT</b>
	)	
<b>Respondents.</b>	)	

**PETITION FOR REVIEW OF AN NPDES PERMIT DECISION  
BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

Pursuant to 415 ILCS 5/40(e)(1) and 35 Ill. Adm. Code Section 105, the Sierra Club and Prairie Rivers Network (collectively “Petitioners”) hereby petition for review of the April 15, 2022 decision of the Illinois Environmental Protection Agency (“IEPA”) to grant the reissued National Pollutant Discharge Elimination System (“NPDES”) permit (Permit No. IL0077666, Ex. A, hereinafter, the “Permit”) to Williamson Energy LLC (the “Permittee”). The Permit allows the Permittee to discharge numerous pollutants in large volumes into the Big Muddy River and tributaries to Pond Creek, a tributary of the Big Muddy River, from its coal mine located in Williamson and Franklin Counties. In support of their petition, Petitioners state:

**Petitioners**

1. The Sierra Club is a California not-for-profit corporation, which has among its purposes to protect and restore the quality of the natural and human environments. The Sierra Club has approximately 29,000 members residing in the State of Illinois. Many of these members reside near the Big Muddy River and Pond Creek, as well as downstream waters. They are adversely impacted by pollution in the Big Muddy River and Pond Creek and any degradation of water quality that could affect the uses of those waters. Many Sierra Club members are

concerned with pollution that would affect their ability to enjoy their properties and recreational activities dependent on the ecological health of the Big Muddy River including fishing, boating, canoeing, nature study and hiking. Sierra Club members monitor water quality in the Big Muddy and are adversely affected by pollution and offensive conditions that occur as the result of discharges to the Big Muddy River including discharges of toxic levels of chloride and other pollutants that cause resuspension of pollutants in the Big Muddy River such as mercury and phosphorus.

2. Prairie Rivers Network (“PRN”) is an Illinois not-for-profit corporation concerned with river conservation and water quality issues in Illinois. The organization has approximately 1,350 members, and works with concerned citizens throughout the state to address issues that impact Illinois streams. Prairie Rivers Network members live in the Big Muddy watershed and are concerned with pollution that would affect their ability to enjoy recreation activities dependent on the ecological health of the Big Muddy River including fishing, boating, canoeing, nature study and hiking. Members of Prairie Rivers Network are adversely affected by pollution and offensive conditions that occur as the result of discharges to the Big Muddy River including discharges of toxic levels of chloride and other pollutants that cause resuspension of pollutants in the Big Muddy River such as mercury and phosphorus.

3. Members of the Petitioners, including Lucia Amorelli, Cameron Smith, Connie Schmidt, Jane Cogie, Jean Sellar, Amanda Pankau, Jan Thomas, Sabrina Hardenbergh, Barbara McKasson, Tabitha Tripp, Dr. Cynthia Skrukud, Andrew Rehn, and Albert Ettinger appeared at the hearing held in the IEPA proceeding on December 18, 2019, or submitted comments in opposition to the Permit. (Transcript of Hearing Ex. B, IEPA Responsiveness Summary Ex. C, and the written comments of Sierra Club and PRN Ex. D and Ex. E) They and other members of

Petitioners are so situated as to be affected by the Permit and by offensive conditions and other violations of water quality standards in the Big Muddy River and Pond Creek.

**Statement of Issues Raised**

4. On July 12, 2019, IEPA gave notice that it had made a tentative decision to issue NPDES permits to Permittee to discharge into the Big Muddy River and Pond Creek. After reviewing a copy of the draft Permit, Petitioners on August 12, 2019 filed their initial comment and request for a public hearing (Ex. D). Petitioners further commented through testimony given at a public hearing held on the draft Permit in Marion, Illinois on December 18, 2019. (See Transcript Ex. B). Petitioners commented again on the Permit with post-hearing written comments filed on January 17, 2020, which were supported by the expert testimony of Matthew Baker, PhD and Professor JoAnn Burkholder (See Exhibit E<sup>1</sup>), as well as numerous other exhibits.

5. In those comments and testimony, Petitioners raised legal and scientific issues regarding flaws in the draft Permit and in IEPA's consideration of the draft Permit including that the Permit did not comply with Illinois' antidegradation rules, 35 Ill. Adm. Code 302.105, and that it would allow discharges that may cause or contribute to violations of Illinois water quality standards regarding protection of existing uses, offensive conditions, dissolved oxygen, mercury, nickel and copper. Petitioners further pointed out that the monitoring requirements in the Permit were inadequate in numerous respects particularly in view of the long list of permit violations committed by the Permittee.

<sup>1</sup> Attached to the original Post-Hearing Comment Letter (Ex. E) were 22 exhibits, many of which are voluminous. To avoid duplication with the record, we have included with Ex. E here only copies of the first two attachments, the referenced expert testimony.

6. In particular, Petitioners commented based on the documents then available, that the draft Permit could not be legally granted under 35 Ill. Adm. Code 302.102, 302.105, 304.105, 309.141(a) and (d), 309.143(a) and 309.146 because the draft Permit as written did not ensure compliance with Illinois water standards or permitting rules. Petitioners stated *inter alia* that the Permit as drafted would violate at least the following applicable regulations:

- **35 Ill. Adm. Code 302.105(a)** (Tier 1 antidegradation) by allowing increased discharges of chloride, sulfate, total suspended solids, copper, iron, nickel, selenium and other pollutants and flow changes that would adversely affect existing uses of the Big Muddy River and Pond Creek and other creeks in the area. (Ex. E pp.3-7) In particular, Petitioners stated that chronic chloride toxicity, as well as the combined effects of all the different kinds of increased pollution allowed by the Permit would impact existing uses. Petitioners also commented that the Permit would damage creeks as a result of reduced stream flow caused by groundwater moving downward to fill areas vacated by groundwater filling the mine. Still further, Petitioners commented that the lack of pre-discharge baseline data would make it impossible to determine the extent of the damage done by the permitted discharges.
- **35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** by increasing the levels of methyl mercury and phosphorus, decreasing DO levels, and causing violations of narrative standards in the Big Muddy. In particular, Petitioners commented that permitted discharges would trigger chemical and biological processes acting on sediments in the Big Muddy, resulting in an increase in methyl mercury, phosphorus and cyanobacteria, as well as a decrease in dissolved oxygen (DO) in the water column.

- **35 Ill. Adm. Code 302.105(c)** (Tier 2 antidegradation) by allowing new discharges to the Big Muddy River and Pond Creek unnecessary to accommodate important social or economic development. Petitioners commented that the new discharges allowed by the draft Permit would harm social and economic development in the community at large by further wedding the local economy to an industry without a long-term future, and a company (then in bankruptcy) likely to leave the community with a large environmental hazard. Petitioners also pointed out that neighbors of the mine would continue to be harmed by the mining operations. Further, Petitioners demonstrated that the mining of coal, to be burned in China or elsewhere, would harm the local economy (and the world economy) by increasing the emission of greenhouse gases.
- **35 Ill. Adm. Code 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d), 309.143, and 309.146** by allowing a mixing zone that would in fact result in violations of applicable water quality standards outside the mixing zone and by allowing increased discharges subject only to implementation of a complex dilution and monitoring formula. Petitioners pointed out that these violations would be exacerbated by the fact that the Permittee has proven itself incapable of complying with the limits and reporting requirements of its current relatively simple permit.
- **35 Ill. Adm. Code 302.102(a), 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** by failing to protect mussels.
- **35 Ill. Adm. Code 309.146** by failing to require monitoring adequate to determine compliance with the complex dilution scheme contemplated by the Permit.
- **35 Ill. Adm. Code 302.102, 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** because the reasonable potential test on which the draft Permit relied was

not properly performed at least with regard to mercury, copper, iron, nickel, and selenium. Further, the draft Permit failed to properly consider the combined effects of these pollutants and others. (Ex. E pp. 3,7)

- **35 Ill. Adm. Code 302.102, 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** because the testing done for mercury was not done with sufficient sensitivity to determine whether there was a reasonable potential for permitted discharges to cause or contribute to violations of the applicable 12 ng/L water quality standard (35 Ill. Adm. Code 302.208(f)).

7. Further regarding antidegradation, 35 Ill. Adm. Code 302.105, Petitioners pointed out in their comments that, assuming *arguendo* that the increased pollution is necessary to keep the mine open, that would not benefit the “community at large” (see 35 Ill. Adm. 302.105(c)) because the community at large is injured by climate change caused by the burning of the coal being mined, mine subsidence, increased flooding, damage to local creeks and other environment damage allowed by the Permit as well as the water pollution that is directly being permitted. Petitioners further pointed out that the employment benefits stated in the record might not occur given the financial situation of the Permittee. (Ex. E pp.12-4)

**Violations of Law and Regulations in the Permit  
and in IEPA’s Consideration of the Permit**

8. On April 15, 2022, Illinois EPA issued the Permit that is subject to the current appeal. IEPA states in the Responsiveness Summary that it did improve the testing done for the reasonable potential test, placed some limits in the Permit as a result of this improved testing, and put certain new limits in the Permit. (Ex. C pp.3-5) Also, in the final Permit IEPA recognized that it could not allow a mixing zone in Pond Creek. However, the final Permit did

not remedy the major flaws discussed above that were raised by Petitioners in oral comments at the hearing and written comments made after the hearing.

9. Illinois EPA has the authority and the obligation to regulate all increased discharges of pollutants as necessary to prevent violation of Illinois water quality standards regarding existing uses and unjustified degradation (35 Ill. Adm. Code 302.105), offensive conditions (35 Ill. Adm. Code 302.203) and dissolved oxygen (35 Ill. Adm. Code 302.206), as well as to prevent violations of the numeric standards.

10. IEPA, however, did not set numeric limits in the Permit necessary to prevent discharges to the Big Muddy River (Outfall 011) that might cause or contribute to violations of these water quality standards for at least iron (dissolved), sulfate, chloride, nickel (dissolved), or copper (dissolved) (See Permit Ex. A. p.10, 24). Instead, to the extent the Permit sets limits for these pollutants at all, it sets only complex and unenforceable formulas. The degrading effect on existing uses of the alteration of stream flows in the vicinity of the mine was apparently ignored.

11. Despite the requirements of 35 Ill. Adm. Code 302.105 to prevent violation of Illinois water quality standards, as well as applicable federal regulations which explicitly require that NPDES permits include restrictions “necessary to achieve water quality standards ... including State narrative criteria” (40 CFR 122.44(d)(1)), Illinois EPA declined to even consider placing a limit on chloride releases from the mine necessary to fully protect existing uses the Big Muddy from chronic chloride toxicity. Instead, the Permit allows chloride levels up to 5000 mg/L within the mixing zone and up to 500 mg/L outside of the mixing zone, even though the federal criteria for chronic chloride toxicity is 230 mg/L and available science that was placed into the record by Petitioners demonstrates that chloride levels should be held well below 230 mg/L to protect existing uses. (Ex. E pp. 5-6)

12. IEPA apparently did not consider that discharges of chloride and other pollutants would promote increased toxic cyano-bacteria levels by creating a water quality regime more favorable for such organisms despite expert testimony stating that this effect was likely. (Ex. E p.2, Buckholder Comments pp. 3-4)

13. Further, it appears from the final Permit that the method for monitoring chloride and other pollutants and other key permit provisions have not even been determined as of the date of the issuance of the Permit, in violation of rights of public participation. It does not appear the calibration curves necessary to monitor chloride levels have been developed. (See, Ex. A p.24) The Permit provides that the Permittee and the agency intend in the future to develop key portions of the Permit regarding chloride and other pollutants without allowing public participation or review by the Board. (See Ex. A Special Condition No. 15)

14. Permit conditions that purport to protect the Big Muddy do not include enforceable numeric limits on pollutants that may cause or contribute to a violation of water quality standards for chloride, sulfate, iron, copper and nickel but only a narrative requirement that the permittee not cause a violation of water quality standards. (Ex. A pp. 10, 24 Special Condition 15). The monitoring requirements in the Permit are also defective and in violation of 35 Ill. Adm. Code 309.146 for these pollutants but the full extent of the errors in the Permit monitoring requirements cannot be known without the full administrative record containing the reasonable potential test calculations and other data.

15. The Permit appears to authorize continuing *acutely* toxic conditions in the Big Muddy River in violation of 35 Ill. Adm. Code 304.105, 309.141 and 309.143, even outside the mixing zone, as it allows discharges to cause levels of pollution in excess of acute criteria measured “within 10 feet downstream” of the mixing zone as long as these discharges do not

exceed 40% (for chloride, sulfate and iron) In addition, it appears to allow chronic toxicity in the Big Muddy and/or the tributary to Pond Creek for chloride, sulfate, iron, copper, nickel and zinc. See Ex. A pp. 2-11, 25, Special Condition No. 16.

16. Portions of the Permit appear to be senseless and may be the result of drafting errors. Special Condition No. 16 subparts d and e provide that “If the water quality standard, based on a hardness of 91 mg/L ... exceeds ...”, while also stating that these amounts would be 40% and 20% over the WQS. Clearly, the water quality standard cannot exceed the water quality standard.<sup>2</sup> These provisions must be revised to make sense, provide enforceable limits, and properly reflect the regulatory requirements.

17. In establishing monitoring requirements, IEPA appears to have failed to take into account the Permittee’s long history of permit violations, including violations that have occurred during the pendency of IEPA’s consideration of the Permit at issue. See Ex. C p. 50.

18. IEPA did not properly consider alternatives for addressing chloride discharges. It is unclear what economic analysis IEPA performed in rejecting alternatives other than to reject those alternatives that the Permittee or its consultants thought were too expensive. It is notable that the selected alternative provides for reverse osmosis reject water, thought to be too toxic to be stored or treated in some situations (Ex. C p. 54), to be dumped into the Big Muddy. (Ex. C p. 3).

19. IEPA apparently completely ignored the negative effects of the Permit on the “community at large,” stating essentially that such problems were not its problem, despite the requirements of 35 Ill. Adm. Code 105(c)(2)(B)(iv) which explicitly requires that effects on the

<sup>2</sup> Perhaps the drafters intended Special Condition No. 16 subparts d and e to provide that “If the measured concentration...”

“community at large” be considered. For example, IEPA utterly failed to consider that the coal produced from the Mine will contribute to disastrous climate change. In addition, IEPA apparently failed to consider the impact the alteration of stream flows, land subsidence, coal dust, noise, and loss of property values will have on the community at large although these potential impacts were explicitly brought to the agency’s attention. (Ex. E p.13)

20. IEPA also apparently ignored the fact that the employment benefits claimed by the Permittee may be very temporary in light of its apparent financial weakness, as the Permittee only recently emerged from bankruptcy.

21. Many of the statements made in the Responsiveness Summary appear to be without any basis in science. For example, it is claimed, without citation of evidence, that pollutants from the mine will not come into contact with sediments despite studies submitted into the record showing resuspension of phosphorus and creation of toxic mercury through contact of water column pollution with sediments. Whether there is any support in the record for the agency’s reasoning cannot be fully analyzed until the agency record is produced.

22. Other serious flaws in the testing or the limits in the revised Permit may be disclosed by the full agency record when that is produced.

23. Members of Petitioners will be affected adversely when pollution discharged under the Permit causes or contributes to the creation of toxic conditions, cyano-bacteria, low oxygen, toxic mercury and offensive conditions in the Big Muddy, Pond Creek and downstream waters. Further, members of Petitioners will be adversely affected when such pollution otherwise injures stream flows and the ecology of the Big Muddy, its tributaries and downstream waters as a result of Illinois EPA’s failure to protect existing conditions, require protective effluent limits, establish proper monitoring, and perform a proper antidegradation analysis. In addition,

Petitioners' public participation rights and rights to enforce the Clean Water Act have been and will continue to be injured by the failure of the agency to develop permit limits in public and to otherwise establish enforceable permit limits.

WHEREFORE, Sierra Club and Prairie Rivers Network ask that the Pollution Control Board set aside the NPDES permit (No IL0077666) issued to Williamson Energy LLC on April 15, 2022 as not sufficiently protective of the environment and not in accord with law, and direct that the Agency reconsider the Permit in order to establish conditions and limits necessary to protect Illinois waters, assure protection of Illinois water quality standards, and comply with the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq., and Illinois law.



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May 10, 2022

**CERTIFICATE OF SERVICE**

I, the undersigned, certify that I have served on the date of May 10, 2022 the attached Petition for Review of an NPDES Permit Decision by the Illinois Environmental Protection Agency upon the following persons by depositing the document in a U.S. Postal Service mailbox by the time of 5:00 pm, with proper postage or delivery charges prepaid:

Division of Legal Counsel  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Williamson Energy  
P.O. Box 300  
Johnson City, Illinois 62951



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Sarah Rubenstein

NPDES Permit No. IL0077666  
Illinois Environmental Protection Agency  
Division of Water Pollution Control  
1021 North Grand Avenue, East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
Reissued NPDES Permit

Expiration Date: April 30, 2027

Issue Date: April 15, 2022  
Effective Date: May 1, 2022

Name and Address of Permittee:

Williamson Energy, LLC  
P.O. Box 300  
Johnston City, Illinois 62951

Facility Name and Address:

Williamson Energy, LLC  
Pond Creek Mine  
4 miles east of Johnston City, Illinois  
(Williamson and Franklin Counties)

Discharge Number and Classification:

001, 002, 003, 004, 005      Alkaline Mine Drainage  
006, 007, 008                Acid Mine Drainage  
011                                Alkaline Mine Drainage

Receiving waters

Unnamed tributary to Pond Creek  
Unnamed tributary to Pond Creek  
Big Muddy River

In compliance with the provisions of the Illinois Environmental Protection Act, Subtitle C and/or Subtitle D Rules and Regulations of the Illinois Pollution Control Board, and the Clean Water Act, the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.



Darin E. LeCrone, P.E.  
Manager, Permit Section  
Division of Water Pollution Control

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 001 (Alkaline Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Mercury (ng/l) 12-month rolling average	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	12	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	12	Monitor Only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5. 21 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 001 and unnamed tributary of Pond Creek receiving such discharges.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 002 (Alkaline Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Nickel (mg/L)	Copper (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum										
I	35	70	3.0	6.0	6.5-9.0	Alk > Acid	1250	500	0.0144	0.1104	0.0245	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk > Acid	1250	500	0.0144	0.1104	0.0245	Monitor Only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 002 and unnamed tributary of Pond Creek receiving such discharges.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 003 (Alkaline Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Iron (dissolved) (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	Monitor Only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 003 and unnamed tributary of Pond Creek receiving such discharges.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 004 (Alkaline Mine Drainage)

Discharge Condition	Parameters												
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Copper (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum									
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.0245	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.0245	Monitor Only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 004 and unnamed tributary of Pond Creek receiving such discharges.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 005 (Alkaline Mine Drainage)

Discharge Condition	Parameters											
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum								
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	Monitor Only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 005 and unnamed tributary of Pond Creek receiving such discharges.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

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Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 006 (Acid Mine Drainage)

Discharge Condition	Parameters													
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/l) ***	Nickel (mg/L)	Mn (total) (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (m/l)
	30 day average	daily maximum	30 day average	daily maximum										
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.1104	1.0	Monitor Only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	Monitor Only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	0.1104	1.0	Monitor Only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 006 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfall 006 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls\*: 007 (Acid Mine Drainage)

Discharge Condition	Parameters															
	Total Suspended Solids (mg/L) ***		Iron (total) (mg/L) ***		pH** (S.U.) ***	Alkalinity/ Acidity ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Cadmium (Cd) (mg/L) ***	Mn (total) (mg/L) ***	Iron (dissolved) (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Hardness ***	Flow (MGD)	Settleable Solids (mfl)
	30 day average	daily maximum	30 day average	daily maximum												
I	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	1.0	0.1104	0.1835	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk.>Acid	1250	500	0.0144	1.0	1.0	0.1104	0.1835	Monitor only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 007 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfall 007 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall\*: 008 (Acid Mine Drainage)

Discharge Condition	Parameters															
	Total Suspended Solids (mg/L)		Iron (total) (mg/L)		pH** (S.U.)	Alkalinity/Acidity	Sulfate (mg/L)	Chloride (mg/L)	Cadmium (Cd) (mg/L)	Mn (total) (mg/L)	Copper (mg/L)	Nickel	Zinc (mg/L)	Hardness	Flow (MGD)	Settleable Solids (ml/l)
	30 day average	daily maximum	30 day average	daily maximum												
I	35	70	3.0	6.0	6.5-9.0	Alk > Acid	1250	500	0.0144	1.0	0.0245	0.1104	0.1635	Monitor only	Measure When Sampling	-
II	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	0.5
III	-	-	-	-	6.0-9.0	-	1250	500	-	-	-	-	-	Monitor only	Measure When Sampling	-
IV	35	70	3.0	6.0	6.5-9.0	Alk > Acid	1250	500	0.0144	1.0	0.0245	0.1104	0.1635	Monitor only	Measure When Sampling	-

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 1-year, 24-hour precipitation event, but less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

\*\*\* There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition No. 13 for the discharges from Outfall 008 and unnamed tributary of Pond Creek receiving such discharges. Also, discharges from Outfall 008 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall\*: 011\* (Alkaline Mine Drainage)

Parameters															
Total Suspended Solids** (mg/l)			Iron** (total) (mg/l)		pH** (S.U.)	Alkalinity/ Acidity	Sulfate** (mg/l)	Chloride** (mg/l)	Mn** (total) (mg/l)		Hardness	Nickel (mg/L)	Copper (mg/L)	Flow (MGD)	Iron (Dissolved)
30 day average	Yearly average	daily maximum	30 day average	daily maximum					30 day average	daily maximum					
35	32.2	70	3.0	6.0	6.5-9.0	Alk. > Acid	See Special Condition No. 15	See Special Condition No. 15	2.0	4.0	Monitor only	See Special Condition No. 15	See Special Condition No. 15	Measure When Sampling	See Special Condition No. 15

All sampling shall be performed utilizing the grab sampling method.

\*\* There shall be a minimum of three (3) samples per week collected from Outfall 011 when the pond is discharging. A "no flow" situation is not considered to be a sample of the discharge.

\* Operation and management of pumpage to Outfall 011 is subject to the requirements of Special Condition No. 15. Also, discharges from Outfall 011 shall be subject to the limitations, monitoring, and reporting requirements of Special Condition No. 18. Monitoring downstream of Outfall 011 is subject to the requirements of Special Condition 16.

\*\* No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

\* The Permittee is subject to the limitations, monitoring, and reporting requirements of Special Condition Nos. 13 and 14 for the discharges from Outfalls 001, 002, 003, 004, 005, 006, 007 and 008 and unnamed tributary to Pond Creek.

The water quality standards for sulfate and chloride from the above referenced outfall as well as in the receiving stream.

\*\*\* One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).

II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 5.21 inches.

I Dry weather discharge (base flow, if present) from the outfall.

Discharge Condition	pH** (S.U.) ***	Sulfate (mg/L) ***	Chloride (mg/L) ***	Hardness ***	Flow (MGD)	Settleable Solids (m/l) ***	Parameters	
							Monitor only	Measure When Sampling
I	6.5-9.0	1250	500	Monitor only	Measure When Sampling	0.5	Monitor only	Measure When Sampling
II	6.0-9.0	1250	500	Monitor only	Measure When Sampling	0.5	Monitor only	Measure When Sampling
III	6.0-9.0	1250	500	Monitor only	Measure When Sampling	-	Monitor only	Measure When Sampling
IV	6.5-9.0	1250	500	Monitor only	Measure When Sampling	0.5	Monitor only	Measure When Sampling

Outfalls\*: 001, 002, 003, 004, 005, 006, 007, 008 (Reclamation Area Drainage)

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Effluent Limitations and Monitoring  
 NPDES Permit No. IL0077666

NPDES Permit No. IL0077666

Effluent Limitations and Monitoring

Upon completion of Special Condition No. 11 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls: 001, 002, 003, 004, 05, 006, 007, 008 (Stormwater Discharge)

Parameters	
pH* (S.U.) **	Settleable Solids (ml/l) **
6.0-9.0	0.5

Stormwater discharge monitoring is subject to the following reporting requirements:

Analysis of samples must be submitted with second quarter Discharge Monitoring Reports.

If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or updated previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency, indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Annual stormwater monitoring is required for all discharges until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

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\* No discharge is allowed from any above referenced permitted outfalls during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

\*\* One (1) sample per year shall be collected and analyzed for the indicated parameter; however, such sampling and analysis is required only if and/or when a discharge occurs from the individual Outfall(s) identified above.

NPDES Permit No. IL0077666

Construction Authorization No. 3117-15

Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area described as follows:

Surface facilities in support of an underground mine containing a total of 986.10 acres, also identified as IDNR/OMM Permit Nos. 375 417 and 456, and as described in IEPA Log Nos. 3117-15 and 3117-15-A, located in Sections 2, 3, 4, 7, 8, 9, 10, 12, 14, 15, 16, 17, 18 and 29, Township 8 South, Range 4 East, and Sections 11, 12, 13, 35, 36, Township 8 South, Range 3 East, Williamson County, 3<sup>rd</sup> P.M., Illinois, and Sections 1, 2 and 12, Township 8 South, Range 2 East, and Sections 7, 8, 9, 11, 14, 15, 16, and 17, Township 8 South, Range 3 East, and Sections 27, 28, 29, 30, 31, 32, 34 and 35, Township 7 South, Range 2 East, Franklin County, 3<sup>rd</sup> P.M., Illinois.

The surface facilities at this site contain drainage control structures (ditches) and nine (9) sediment basins, incline slope, coal preparation plant, coal stockpiles, refuse disposal areas, coal conveyors, railroad loop, ventilation shafts, parking areas, access roads, and office and maintenance buildings. The following additional areas are being added to the original facilities approved for this operation.

An additional area of 4.05 acres, identified as IBR No. 4 to OMM Permit No. 375, located in Section 12, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 2416-06 and 2416-06-A, installation of three (3) boreholes and associated pipeline to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 9.71 acres, identified as IBR No. 5 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 2380-06 and 2380-06-A, installation of the support facilities to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by two temporary catch basins, silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.20 acres, identified as IBR No. 10 to OMM Permit No. 375, located in Section 8, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 1396-07 and 1396-07-A, installation of two (2) boreholes and a vertical pump to ensure mine ventilation is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 12.50 acres, identified as IBR No. 11 to OMM Permit No. 375, located in Sections 4, 7 and 8, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 1525-07 and 1525-07-A, this area is incorporated for the installation of the water line from the Locust Grove Shaft area to Pond 006. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 0.36 acres, identified as IBR to OMM Permit No. 375, located in Sections 11 and 12, Township 8 South, Range 3 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log Nos. 0190-08 and 0190-08-A, re-alignment of access road is approved. Runoff from the area approved herein should be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.57 acres, identified as IBR No. 14 to OMM Permit No. 375, located in Section 9, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 0369-08, two (2) boreholes will be drilled and a vertical pump will be installed to ensure mine ventilation. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 8.1 acres, identified as IBR No. 25 to OMM Permit No. 375, located in Sections 9 and 10, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 8091-10, two (2) concrete transport boreholes and access road will be constructed and a turbine pump, buried waterline and power line will be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 2.13 acres, identified as IBR No. 55 to OMM Permit No. 375, located in Section 9 and 16, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5530-13 a buried pump discharge pipeline and electrical power line will be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 4.18 acres, identified as IBR No. 52 to OMM Permit No. 375, located in Section 15, Township 8 South, Range 4 East, Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5168-13, this area is being incorporated for the construction of an underground mine support facility including a borehole and installation of an electric vertical turbine pump. The area will also include a buried pipeline and electric power line. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

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An additional area of 3.3 acres, identified as IBR No. 57 to OMM Permit No. 375, located in Section 18, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 4088-14, two (2) boreholes will be constructed and a pump and waterline will be installed to pump underground mine pumpage to an existing waterline along Jordan Fort Road. Topsoil stockpiles will also be located with the IBR area. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 3.3 acres, identified as IBR No. 58 to OMM Permit No. 375, located in Sections 8 and 17, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 5477-13, two (2) boreholes will be constructed and a pump and waterline will be installed to pump underground mine water and to ensure underground ventilation. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 9.89 acres, identified as IBR No. 60 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, Williamson County, Illinois. As proposed and depicted in IEPA Log No. 4237-14, this area is for the development of topsoil and subsoil storage areas and construction of associated drainage ditches. Two (2) drainage ditches, identified as Collection Ditch Nos. D-5E-1 and D-5D-1, direct runoff from this area to existing Ditch D-5c and Pond 005.

An additional area of 1.0 acres, identified as IBR No. 78 to OMM Permit No. 375, located in Section 13, Township 8 South, Range 3 East, and Sections 7 and 18, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 9082-19, this area is incorporated into this permit for a buried four-inch waterline to be installed. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 19.9 acres, identified as IBR No. 79 to OMM Permit No. 375, located in Sections 35 and 36, Township 7 South, Range 3 East, in Franklin County, Illinois. As proposed and depicted in IEPA Log No. 9083-19, this area is incorporated into this permit for installation of a supply shaft to transport supplies underground as required for the continued effective operation of approved mine plan, belt air shaft and fan to supply required ventilation along with six (6) steel cased boreholes with a diameter less than 10 5/8 inches for power and other supplies, power substation, dry storage barn and equipment yard. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

An additional area of 17.01 acres, identified as IBR No. 83 to OMM Permit No. 375, located in Sections 2, 3, 9 and 10, Township 8 South, Range 4 East, in Williamson County, Illinois. As proposed and depicted in IEPA Log No. 9109-19, this area is incorporated into this permit for a access roadway, one 16.5 foot bleeder shaft, utility boreholes, concrete pad for transformer, a compressor station and a portable crib plant. Runoff from the area approved herein will be controlled by silt fence, mulching, seeding, vegetation, rock check dams, erosion control blankets, etc.

As described in IEPA Log No. 7395-11 and previously approved under Subtitle D Permit No. 2012-MA-7395-1, a permit area consisting of 9.82 acres located in Section 10, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of compressor bore hole, installation of a buried power line and an access road. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6141-12 and previously approved under Subtitle D Permit No. 2012-MA-6141-1, a permit area consisting of 0.64 acres located in Section 13, Township 8 South, Range 3 East, Williamson County, is incorporated into this permit for the construction of borehole for the batch material supply of crushed stone and concrete to the underground mine. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6562-12 and previously approved under Subtitle D Permit No. 2013-MA-6562, a permit area consisting of 3.81 acres located in Section 16, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of a steel-liner drill hole and temporary installation of a pumpable cement product mixing plant used for underground mine. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 6039-12 and previously approved under Subtitle D Permit No. 2015-MA-6039, a permit area consisting of 4.65 acres located in Section 14, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for installation of ventilation shaft site. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

As described in IEPA Log No. 2273-16 and previously approved under Subtitle D Permit No. 2016-MA-2273, a permit area consisting of 6.5 acres located in Section 29, Township 8 South, Range 4 East, Williamson County, is incorporated into this permit for the construction of a concrete lined South District Supply Shaft to provide supplies to underground workings, three (3) boreholes, a pole barn and an access road. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above.

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As previously approved under Subtitle D Permit No. 2014-MW-4275, a fine coal refuse (slurry) disposal area incorporating the use of geotextile tubes was developed at Pond Creek Mine site. As described and depicted in IEPA Log Nos. 4275-14, 4275-14-A, 4275-14-B, 1475-14-C development of this area included construction of a low permeability liner consisting of four (4) foot compacted clay with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec, or less. Surface runoff and dewatering of the geotextile tubes is collected in a "no-discharge" perimeter containment basin and pumped to existing refuse disposal area or coal preparation plant. Hereby incorporated into this permit is a modification of the drainage control plan to allow stormwater runoff from the area to discharge through sediment ditches and spillway into existing Ditch D-5C and through Pond No. 005, as described and depicted in IEPA Log No. 3117-15. Reclamation of the geotextile tube refuse disposal area shall consist of construction of a low permeability cap consisting of four (4) foot compacted clay with hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec, or less. Rooting medium and topsoil required for establishment of vegetative cover shall be in addition to the four (4) foot compacted clay low permeability cap. Four (4) monitoring wells identified as Well Nos. GW-29, GW-30, GW-31 and GW-32 shall be installed at each corner of the geotextile tube placement area. Groundwater monitoring shall be performed in accordance with Condition No. 13.

As described in IEPA Log Nos. 1186-17, 1186-17-Band 1385-17, and previously approved under Subtitle D Permit No. 2017-MA-1186-1, a permit area consisting of 17.7 acres located in Section 12, Township 8 South, Range 3 East, Williamson County, is incorporated into this permit for construction of a Water Management Facility consisting of three (3) water holding cells. Construction and development of the water Management facility includes topsoil removal, grading, foundation preparation and installation of a low permeability liner consisting of four (4) foot compacted clay liner with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec within the water holding cells. Compacted clay liner shall also be subject to and in accordance with the specifications and testing requirements of Condition No. 12. All runoff from this area shall be monitored in accordance with stormwater monitoring requirements of Special Condition No. 12 of this NPDES Permit. This additional area is included in the total permit acreage cited above. Four (4) monitoring wells identified as Well Nos. GW-33, GW-34, GW-35 and GW-36 shall be installed as depicted in IEPA Log Nos. 1186-17, 1186-17-B and 1385-17 Groundwater monitoring shall be performed in accordance with Condition No. 13.

The following mining operations plan changes are incorporated into this permit:

- Log No. 2413-06                      The Mining Operations Plan has been revised to include the construction of an access tunnel under the railroad loop and administration building.
- Log No. 2414-06                      The Mine Operations Map has been revised to depict the revised various structures within the support facility.
- Log No. 0371-08                      Installation of a concrete sump at the existing road tunnel and a pipeline which will discharge to Sediment Pond No. 003, identified as IPR No. 13 to OMM Permit No. 375.

Surface drainage control is provided by nine (9) sedimentation ponds with discharges designated as 001, 002, 003, 004, 005 and 011 classified as alkaline mine drainage, and Outfalls 006, 007, 008 classified as acid mine discharge. The sanitary wastewater water treatment system will be approved by the Illinois Department of Public Health.

The location and receiving stream of the Outfalls at this facility is as follows:

Outfall No.	Latitude			Longitude			Receiving Water
	DEG	MIN	SEC	DEG	MIN	SEC	
001	37°	50'	59.2"	88°	49'	37.5"	Unnamed tributary to Pond Creek
002	37°	50'	26.0"	88°	49'	51.5"	Unnamed tributary to Pond Creek
003	37°	50'	26.0"	88°	49'	58.0"	Unnamed tributary to Pond Creek
004	37°	50'	25.0"	88°	49'	56.6"	Unnamed tributary to Pond Creek
005	37°	50'	9.1"	88°	50'	00.0"	Unnamed tributary to Pond Creek
006	37°	50'	28.4"	88°	50'	40.6"	Unnamed tributary to Pond Creek
007	37°	50'	29.5"	88°	49'	34.0"	Unnamed tributary to Pond Creek
008	37°	50'	31.4"	88°	49'	33.9"	Unnamed tributary to Pond Creek
011	37°	52'	37"	89°	01'	49"	Big Muddy River

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Original Sedimentation Ponds with discharges designated as Outfall Nos. 007 and 008 have been re-designed as described and depicted in IEPA Log No. 8554-10.

**Refuse disposal**

Refuse Disposal Area as previously approved in IEPA Log No. 3054-05, was constructed in phases as depicted and described in IEPA Log No. 2377-06 (RDA No. 1), Refuse Disposal Area No. 2 was constructed at Pond Creek Mine facilities as proposed and described in IEPA Log Nos. 1465-07, 1465-07-B, 1465-07-D, 1465-07-E, 1465-07-G, 1520-07, 0346-08, 9005-09, 9198-09, 9198-09-A, 8114-10, 8114-10-A, 7185-11, 7225-11, 6431-12, 6431-12-A and 5378-13.

As previously approved under Subtitle D Permit No. 2015-MA-3432, construction and development of Refuse Disposal Area No. 3 includes topsoil removal, grading, foundation preparation for refuse area, also construction of the water holding cell and installation of four (4) foot compacted clay liner was performed in accordance with the procedures discussed and outlined in IEPA Log No. 3432-15. As described in IEPA Log No. 3432-15, all stormwater runoff from the deposited coarse refuse within the RDA No. 3 is collected and maintained within the RDA No. 3 and/or is pumped into the slurry impounding structure of the existing RDA, which is an integral part of the Pond Creek Mine No. 1 coal preparation plant closed circuit wastewater handling system.

As described and depicted in IEPA Log Nos. 3001-15 and 3001-15-C Refuse Disposal Area No. 3 (RDA 3) is approved for construction. RDA 3 is located immediately east of the RDA 1 and RDA 2 areas, contains 229.78 acres, and is included in the above cited total Permit acreage. The area for RDA 3 is located in Section 12, Township 8 South, Range 3 East and Section 7, Township 8 South, Range 4 East, Williamson County, Illinois. To not increase chloride and sulfates due to construction of RDA 3, the mine is reclaiming the out slopes of the RDA 1 and RDA 2 that previously discharged through Outfalls 007 and 008. There will be no increase in loading due to the construction of RDA 3. Runoff from this area will be tributary to previously constructed water holding cell. Construction of four (4) foot compacted clay liners for the Refuse Disposal Area No. 3, shall be subject to and in accordance with the specifications and testing requirements of Condition No. 12. With prior approval as to thickness and installation procedures, an HDPE synthetic liner may be utilized in lieu of the compacted clay liners proposed.

**Mixing Zone (Big Muddy River)**

Excess water will be transported from the Pond Creek Mine to Outfall No. 011 on the Big Muddy River through a high-density polyethylene (HDPE) pipeline. Water will be pumped from the Water Holding Cell by pumps through approximately 12.5 miles of pipe to the diffuser located at the mixing zone location. The pipeline ROW will be approximately 50 feet in width with a total permitted area of approximately 70.7 acres. The amount of water that could be discharged through the Pipeline depends upon the chloride concentration in the discharge stream, the background chloride content and the flow in the Big Muddy River. The upper limit to the discharge will be based on the pumping capacity of the facility. Maximum pumping rate of 5,000 gallons per minute or 11.1 cfs. from the facility. The volume of water discharged to Big Muddy River will be dependent upon the flow in the Big Muddy River and the chloride concentration of the water in the Water Holding Cell and the chloride concentration coming downstream in the River.

During operations of the pipeline, continuous flow monitors will be installed to provide protection against leakage. Flow will be monitored near the pump discharge while the pipeline is within the sediment control structure of Pond Creek Mine. Flow will also be monitored at the mixing zone location. This instrumentation will be connected to an alarm monitoring system and flow data will be transmitted to a central location for tracking and assessing system operations. The flow monitoring system operation and maintenance is subject to the requirements of Special Condition No. 15.

Groundwater monitoring for the facility will consist of Monitoring Well Nos. MW-10, MW-11, MW-12, MW-13, MW-8R, MW-28, GW-1, GW-2, GW-4, GW-5, GW-9, GW-33, GW-34, GW-35 and GW-36. Groundwater monitoring requirements are outlined in Condition No. 13.

This Construction Authorization replaces Construction Authorization No. 3054-05.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by 35 Ill. Adm. Code Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

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This Authorization is issued subject to the following Condition(s). If such Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. If any statement or representation is found to be incorrect, this permit may be revoked and the permittee thereupon waives all rights thereunder.
2. The issuance of this permit (a) shall not be considered as in any manner affecting the title of the premises upon which the mine or mine refuse area is to be located; (b) does not release the permittee from any liability for damage to person or property caused by or resulting from the installation, maintenance or operation of the proposed facilities; (c) does not take into consideration the structural stability of any units or parts of the project; and (d) does not release the permittee from compliance with other applicable statutes of the State of Illinois, or with applicable local laws, regulations or ordinances.
3. Final plans, specifications, application and supporting documents as submitted by the permittee and approved by the Agency shall constitute part of this permit in the records of the Agency.
4. There shall be no deviations from the approved plans and specifications unless revised plans, specifications and application shall first have been submitted to the Agency and a supplemental permit issued.
5. The permit holder shall notify the Agency (217/782-3637) immediately of an emergency at the mine or mine refuse area which causes or threatens to cause a sudden discharge of contaminants into the waters of Illinois and shall immediately undertake necessary corrective measures as required by 35 Ill. Adm. Code 405.111. (217/782-3637 for calls between the hours of 5:00 p.m. to 8:30 a.m. and on weekends.)
6. The termination of an NPDES discharge monitoring point or cessation of monitoring of an NPDES discharge is not authorized by this Agency until the permittee submits adequate justification to show what alternate treatment is provided or that untreated drainage will meet applicable effluent and water quality standards.
7. Initial construction activities in areas to be disturbed shall be for collection and treatment facilities only. Prior to the start of other activities, surface drainage controls shall be constructed and operated to avoid violations of the Act or Subtitle D. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed, for the parameters designated as 1M through 15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet the standards of 35 Ill. Adm. Code 406.106 or applicable water quality standards, a Supplemental Permit must be obtained. Discharge from ponds is not allowed unless applicable effluent and water quality standards are met in the basin discharge(s).
8. This Agency must be informed in writing and an application submitted if drainage, which was previously classified as alkaline (pH greater than 6.0), becomes acid (pH less than 6.0) or ferruginous (base flow with an iron concentration greater than 10 mg/L). The type of drainage discharging to the basin should be reclassified in a manner consistent with the applicable provisions of 35 Ill. Adm. Code Part 406. The application should discuss the treatment method and demonstrate how the discharge will meet the applicable standards.
9. A permittee has the obligation to add a settling aid if necessary to meet the suspended solids or settleable solids effluent standards. The selection of a settling aid and the application practice shall be in accordance with a. or b. below
  - a. Alum ( $Al_2(SO_4)_3$ ), hydrated lime ( $Ca(OH)_2$ ), soda ash ( $Na_2CO_3$ ), alkaline pit pumpage, acetylene production by-product (tested for impurities), and ground limestone are acceptable settling aids and are hereby permitted for alkaline mine drainage sedimentation ponds.
  - b. Any other settling aids such as commercial flocculents and coagulants are permitted only on prior approval from the Agency. To obtain approval a permittee must demonstrate in writing to the Agency that such use will not cause a violation of the toxic substances standard of 35 Ill. Adm. Code 302.210 or of the appropriate effluent and water quality standards of 35 Ill. Adm. Code parts 302, 304, and 406.
10. A general plan for the nature and disposition of all liquids used to drill boreholes shall be filed with this Agency prior to any such operation. This plan should be filed at such time that the operator becomes aware of the need to drill unless the plan of operation was contained in a previously approved application.
11. Any of the following shall be a violation of the provisions required under 35 Ill. Adm. Code 406.202:
  - a. It is demonstrated that an adverse effect on the environment in and around the receiving stream has occurred or is likely to occur.

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- b. It is demonstrated that the discharge has adversely affected or is likely to adversely affect any public water supply.
  - c. The Agency determines that the permittee is not utilizing Good Mining Practices in accordance with 35 Ill. Adm. Code 406.204 which are fully described in detail in Sections 406.205, 406.206, 406.207 and 406.208 in order to minimize the discharge of total dissolved solids, chloride, sulfate, iron and manganese. To the extent practical, such Good Mining Practices shall be implemented to:
    - i. Stop or minimize water from coming into contact with disturbed areas through the use of diversions and/or runoff controls (Section 406.205).
    - ii. Retention and control within the site of waters exposed to disturbed materials utilizing erosion controls, sedimentation controls, water reuse or recirculation, minimization of exposure to disturbed materials, etc. (Section 406.206).
    - iii. Control and treatment of waters discharged from the site by regulation of flow of discharges and/or routing of discharges to more suitable discharge locations (Section 406.207).
    - iv. Utilized unconventional practices to prevent the production or discharge of waters containing elevated contaminant concentrations such as diversion of groundwater prior to entry into a surface or underground mine, dewatering practices to remove clean water prior to contacting disturbed materials and/or any additional practices demonstrated to be effective in reducing contaminant levels in discharges (Section 406.208).
12. The four (4) foot compacted clay liner to be constructed course refuse disposal area, fine coal refuse area (RDA No. 3) shall be subject to the specifications and procedures presented in IEPA Log No. 3001-15-C.

Construction Specifications

- a. All soils to be used for the compacted clay liner shall be free of grass, vines, vegetation and rock or stones greater than four (4) inches in diameter.
- b. Samples collected from the borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.
- c. Each successive soil lift shall be placed to a 6 to 8 inch loose thickness; however, in no instance shall the loose lift thickness exceed the length of the pads or feet on the compactor or roller.
- d. Each soil lift shall be compacted to the minimum Standard Proctor (ASTM D698) density identified in item no. 12(q) below, at a moisture content of 0% to 5% above the optimum moisture content of the soil.
- e. Inter-lift surfaces shall be adequately scarified to ensure inter-lifting bonding.
- f. Liner construction shall be performed to consistent achievement of density, moisture content, and hydraulic conductivity for each successive lift.
- g. The placement of frozen material or the placement material on frozen ground is prohibited.
- h. Contemporaneous placement or protective covering shall be provided to prevent drying, desiccation and/or freezing where necessary.
- i. Liner construction shall be completed in a manner which reduces void spaces within the soil and liner.
- j. All construction stakes shall be removed during construction, and all test holes (Shelby tube samples) are to be backfilled with bentonite.
- k. The compacted clay liner shall be constructed in a manner to achieve a uniform barrier with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec.
- l. In the event that acceptable compaction results are not achieved, the soil lift shall be reprocessed or removed and replaced. If moisture content is less than optimum, or greater than 5% above optimum, the failing material shall be wetted or dried to a moisture content within specification and re-compacted. If the dry density is below specification, the failing material shall be re-compacted until a passing test is achieved.

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- m. In the event of a failing conductivity test, the soil may be removed or re-compacted and retested until a passing result is obtained; or the soil immediately above and below the test specimen from the same Shelby tube may be tested. If both tests pass, the original test shall be nullified. If either test fails, that portion of the liner shall be rejected and shall be reconstructed and retested until passing results are obtained. The limits of necessary reconstruction shall be determined by additional sampling and testing within the failed region, thereby isolating the failing area of work.

**Testing Specifications**

- n. Prior to initiating soil liner construction, borrow soils shall be identified, qualified, and verified. At minimum, a representative sample of each soil type identified within the borrow area is to be collected and analyzed for gradation, compaction, and hydraulic conductivity characteristics.
  - o. Samples collected from borrow area shall be evaluated in accordance with ASTM D422, D4318 and D2487 to ensure classification criteria are met.
  - p. Samples collected from the borrow area shall be tested in accordance with ASTM D 698 to determine maximum dry density and optimum moisture content of the soil.
  - q. Samples collect from the borrow area shall be compacted to 90% and 95% standard Proctor density at or near optimum moisture content. The hydraulic conductivity of the re-compacted samples shall be determined in accordance with ASTM D5084 procedures. The results of this testing shall be used to establish the minimum dry density for soil liner compaction necessary to achieve a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less.
  - r. Moisture and density testing by nuclear methods (ASTM D2922 and D3017) shall be conducted at a rate of at least one test per 1,000 cubic yards placed. Testing locations shall be random and shall not be known to the earthwork contractor prior to lift placement.
  - s. To ensure the accuracy and reproducibility of the nuclear testing, all nuclear density gauges shall be certified to calibration. Soil compaction tests shall be double-checked with independent test methods. A drive cylinder test and laboratory moisture content determination shall be conducted and compared to gauge readings. These independent checks shall be made at the outset of construction and on a bi-weekly basis (e.g., every ten working days) thereafter.
  - t. Samples for hydraulic conductivity verification shall be retrieved from the compacted soil liner and tested in accordance with ASTM D5084 procedures. Samples shall be retrieved using three-inch Shelby tubes. Samples shall be completed at frequency of one sample/test per 20,000 cubic yards placed. The vertical location of the recovered samples shall be varied so that representative portions or lifts of the contractor prior to soil liner construction.
  - u. Survey checks shall be conducted at a minimum spacing of 100 ft. centers, and at 100 ft. intervals along each line where a break in slope occurs, to verify liner thickness. To verify liner thickness, the survey checks shall be taken before and after liner construction.
13. Groundwater monitoring requirements for Well Nos. MW-10, MW-11, MW-12, MW-13, MW-8R, MW-28, GW-1, GW-2, GW-4, GW-5, GW-9, GW-33, GW-34, GW-35 and GW-36 are as follows:

- a. Ambient background monitoring shall be performed for all referenced wells. Such ambient monitoring shall consist of six (6) samples collected during the first year (approximately bi-monthly) following well installation but no later than during the first year of operation or disturbance to determine ambient background concentrations. Background monitoring shall include the following list of constituents:

Aluminum	Fluoride	Sulfate
Antimony	Iron (dissolved)	Thallium
Arsenic	Iron (total)	Total Dissolved Solids
Barium	Lead	Vanadium
Beryllium	Manganese (dissolved)	Zinc
Boron	Manganese (total)	pH (field)
Cadmium	Mercury	Acidity
Chloride	Molybdenum	Alkalinity
Chromium	Nickel	Hardness
Cobalt	Phenols	Static Water Elevation
Copper	Selenium	
Cyanide	Silver	

- b. Following the ambient monitoring as required under Condition No. 13(a) above, routine monitoring shall continue on a quarterly basis as follows:

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- i. Monitoring Well Nos. MW-10, MW-11, MW-12, MW-13, MW-8R, MW-28, GW-2, GW-5, GW-9, GW-33, GW-34, GW-35 and GW-36 shall continue to be monitored quarterly for the contaminants identified in Condition No. 13(a) above.
- ii. Monitoring Well Nos. GW-1 and GW-4 shall be monitored quarterly as required by IDNR/OMM for the following list of constituents:
 

Chloride	Total Dissolved Solids
Iron (dissolved)	Hardness
Iron (total)	Acidity
Manganese (dissolved)	Alkalinity
Manganese (total)	pH
Sulfate	Static Water Elevation
- c. Following completion of active mining and reclamation, post-mining monitoring of all above referenced wells shall consist of six (6) samples collected during a 12-month period (approximately bi-monthly) to determine post-mining concentrations. Post-mining monitoring shall include the list of constituents identified in Condition No. 13(a) above.
- d. Groundwater monitoring reports shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5 of this NPDES permit.
- e. A statistically valid representation of background and/or post mining water quality required under Condition No. 13(b) above shall be submitted utilizing the following method. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed above.

Should the Permittee determine that an alternate statistical method would be more appropriate based on the data being evaluated, the Permittee may request utilization of such alternate methodology. Upon approval from the Agency, the alternate methodology may be utilized to determine a statistically valid representation of background and/or post mining water quality.

The following method should be used to predict the confidence limit when single groundwater samples are taken from each monitoring (test) well.

- i. Determine the arithmetic mean ( $\bar{X}_b$ ) of each indicator parameter for the sampling period. If more than one well is used, an equal number of samples must be taken from each well.

$$\bar{X}_b = \frac{X_1 + X_2 + \dots + X_n}{n}$$

Where:

$\bar{X}_b$  = Average value for a given chemical parameter

$X_n$  = Values for each sample  
 n = the number of samples taken

- ii. Calculate the background and/or post mining variance ( $S_b^2$ ) and standard deviation ( $S_b$ ) for each parameter using the values ( $X_n$ ) from each sample of the well(s) as follows:

$$S_b^2 = \frac{(X_1 - \bar{X}_b)^2 + (X_2 - \bar{X}_b)^2 + \dots + (X_n - \bar{X}_b)^2}{n - 1}$$

$$S_b = \sqrt{S_b^2}$$

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iii. Calculate the upper confidence limit using the following formula:

$$CL = \bar{X}_b \pm t \sqrt{1 + 1/n} (S_b)$$

Where:

CL = upper confidence limit prediction  
 (upper and lower limits should be calculated for pH)  
 t = onetailed t value at the required significance level and at n1 degrees of freedom from Table 1  
 (a twotailed t value should be used for pH)

- iv. If the values of any routine parameter for any monitoring well exceed the upper confidence limit for that parameter, the permittee shall conclude that a statistically significant change has occurred at that well.
- v. When some of the background and/or post mining values are less than the Method Detection Limit (MDL), a value of one-half (1/2) the MDL shall be substituted for each value that is reported as less than the MDL. All other computations shall be calculated as given above.

If all the background and/or post mining values are less than the MDL for a given parameter, the Practical Quantitation Limit (PQL), as given in 35 Ill. Adm. Code Part 724 Appendix I shall be used to evaluate data from monitoring wells. If the analytical results from any monitoring well exceed two (2) times the PQL for any single parameter, or if they exceed the PQLs for two or more parameters, the permittee shall conclude that a statistically significant change has occurred.

**Table 1**  
Standard tTables Level of Significance

Degrees of freedom	tvalues (onetail)		tvalues (twotail)*	
	99%	95%	99%	95%
4	3.747	2.132	4.604	2.776
5	3.365	2.015	4.032	2.571
6	3.143	1.943	3.707	2.447
7	2.998	1.895	3.499	2.365
8	2.896	1.860	3.355	2.306
9	2.821	1.833	3.250	2.262
10	2.764	1.812	3.169	2.228
11	2.718	1.796	3.106	2.201
12	2.681	1.782	3.055	2.179
13	2.650	1.771	3.012	2.160
14	2.624	1.761	2.977	2.145
15	2.602	1.753	2.947	2.131
16	2.583	1.746	2.921	2.120
17	2.567	1.740	2.898	2.110
18	2.552	1.734	2.878	2.101
19	2.539	1.729	2.861	2.093
20	2.528	1.725	2.845	2.086
21	2.518	1.721	2.831	2.080
22	2.508	1.717	2.819	2.074
23	2.500	1.714	2.807	2.069
24	2.492	1.711	2.797	2.064
25	2.485	1.708	2.787	2.060
30	2.457	1.697	2.750	2.042
40	2.423	1.684	2.704	2.021

Adopted from Table III of "Statistical Tables for Biological Agricultural and Medical Research" (1947, R.A. Fisher and F. Yates).

\* For pH only when required.

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Special Conditions

**Special Condition No. 1:** No effluent from any mine related facility area under this permit shall, alone or in combination with other sources, cause a violation of any applicable water quality standard as set out in the Illinois Pollution Control Board Rules and Regulations, Subtitle C: Water Pollution.

**Special Condition No. 2:** Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

**Special Condition No. 3:** All periodic monitoring and reporting forms, including Discharge Monitoring Report (DMR) forms, shall be submitted to the Agency according to the schedule outlined in Special Condition No. 4 or 5 below with one (1) copy forwarded to each of the following addresses:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
1021 North Grand Ave., East  
P.O. Box 19276  
Springfield, IL 62794-9276

Illinois Environmental Protection Agency  
Mine Pollution Control Program  
2309 West Main Street, Suite 116  
Marion, Illinois 62959

Attn: Compliance Assurance Section

The Permittee will be required to submit electronic DMRs (NetDMR) instead of mailing paper DMRs to the IEPA, unless a waiver is approved by the Agency. More information, including registration information for the NetDMR program, can be obtained on the IEPA website, <https://www2.illinois.gov/epa/topics/water-quality/surface-water/netdmr/Pages/quick-answer-guide.aspx>.

**Special Condition No. 4:** Completed Discharge Monitoring Report (DMR) forms and as well as upstream and downstream monitoring results, shall be retained by the Permittee for a period of three (3) months and shall be submitted electronically (or mailed if waiver is approved by the Agency) and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

Period	Received by IEPA
January, February, March	April 15
April, May, June	July 15
July, August, September	October 15
October, November, December	January 15

The Permittee shall record discharge monitoring results on Discharge Monitoring Report (DMR) forms using one such form for each Outfall and Discharge Condition each month. In the event that an Outfall does not discharge during a monthly reporting period or under a given Discharge Condition, the DMR form shall be submitted with "No Discharge" indicated.

Any and all monitoring results, other than NPDES outfall discharge results reported through NetDMR, shall be submitted to the Agency at the addresses indicated in Special Condition No. 3 above.

**Special Condition No. 5:** Completed periodic monitoring and reporting, other than DMR's and stream monitoring (i.e., groundwater monitoring, coal combustion waste analysis reports, etc.), shall be retained by the Permittee for a period of three (3) months and shall be mailed and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

Period	Received by IEPA
January, February, March	May 1
April, May, June	August 1
July, August, September	November 1
October, November, December	February 1

**Special Condition No. 6:** The Agency may revise or modify the permit consistent with applicable laws, regulations or judicial orders.

**Special Condition No. 7:** If an applicable effluent standard or limitation is promulgated under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the NPDES Permit, the Agency shall revise or modify the permit in accordance with the more stringent standard or prohibition and shall so notify the permittee.

**Special Condition No. 8:** The permittee shall notify the Agency in writing by certified mail within thirty days of abandonment, cessation, or suspension of active mining for thirty days or more unless caused by a labor dispute. During cessation or suspension of active mining, whether caused by a labor dispute or not, the permittee shall provide whatever interim impoundment, drainage diversion, and wastewater treatment is necessary to avoid violations of the Act or Subtitle D Regulations.

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Special Conditions

**Special Condition No. 9:** Plans must be submitted to and approved by this Agency prior to construction of any future sedimentation ponds. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed for the parameters designated as 1M-15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet these standards, a Supplemental Permit must also be obtained. Discharge from a pond is not allowed unless applicable effluent and water quality standards are met.

**Special Condition No. 10:** The special reclamation area effluent standards of 35 Ill. Adm. Code 406.109 apply only on approval from the Agency. To obtain approval, a request form and supporting documentation shall be submitted to request the discharge be classified as a reclamation area discharge. The Agency will notify the permittee upon approval of the change.

**Special Condition No. 11:** The special stormwater effluent standards apply only on approval from the Agency. To obtain approval, a request with supporting documentation shall be submitted to request the discharge to be classified as a stormwater discharge. The documentation supporting the request shall include analysis results indicating the discharge will consistently comply with reclamation area discharge effluent standards. The Agency will notify the permittee upon approval of the change.

**Special Condition No. 12:** Annual stormwater monitoring is required for all discharges not tributary to a sediment basin until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

- a. Each discharge must be monitored for pH and settleable solids annually.
- b. Analysis of samples must be submitted with second quarter Discharge Monitoring Reports. A map with discharge locations must be included in this submittal.
- c. If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or update previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

**Special Condition No. 13:** Sediment Pond Operation and Maintenance (Outfalls 001, 002, 003, 004, 005, 006, 007 and 008):

- a. For discharges resulting from precipitation events, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008 shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.
- b. The following sampling and monitoring requirements are applicable to flow in the unnamed tributary to Pond Creek which receive discharges from Outfalls 001, 002, 003, 004, 005, 006, 007, 008.
  - i. All sampling and monitoring required under 13(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.
  - ii. Unnamed tributary to Pond Creek shall be monitored and reported quarterly for Discharge Rate, Chloride, Sulfate and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding receiving stream flow characteristics and in-stream contaminant concentrations the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

- iii. Unnamed tributary to Pond Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of the associated outfall.

**Special Condition No. 14:** The Permittee shall install and operate a 1.0 MGD (million gallon per day) reverse osmosis (RO) unit with operation to begin no later than December 31, 2023.

- a. The RO permeate (treated water) will discharge through Outfalls 001 thru 008. Discharge may be through any single or combination of multiple outfalls at any given time.
- b. The RO reject will discharge to the Big Muddy River through Outfall 011.

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Special Conditions**Special Condition No. 15:** Sediment Pond Operation and Maintenance (Outfall 011):

- a. Pursuant to 35 Ill. Adm. Code Part 302.102, discharges from the referenced outfalls that otherwise would not meet the water quality standards of 35 Ill. Adm. Code Part 302 may be permitted if sufficient flow exists in the receiving stream to ensure that applicable water quality standards are met. That is, discharges not meeting the water quality standards of 35 Ill. Adm. Code Part 302 may only be discharged at such times that sufficient flow exists in the receiving stream to ensure that water quality standards in the receiving stream beyond the area of allowed mixing will not be exceeded. The permittee shall determine the effluent limitation for chloride and/or the maximum effluent flow rate allowable to maintain water quality in the receiving stream. The following equations shall be used to make such determinations:

$$C_{DS} = [C_E Q_E + 0.25 C_{US} Q_{US}] / (0.25 Q_{US} + Q_E)$$

Where:

$C_E$  = Effluent concentration (mg/L)

$Q_E$  = Effluent flow rate (cfs) for Outfall 011

$Q_{US}$  = Upstream flow rate (cfs)

$C_{US}$  = Upstream concentration (mg/L)

$C_{DS}$  = Downstream concentration

The "calculated" downstream concentration ( $C_{DS}$ ) shall be less than 500 mg/L for chloride and reported on the discharge monitoring reports (DMRs).

Chloride is limited in the NPDES permit at the limits described below. The maximum flow from Outfall 011 is 5,000 gpm and the maximum chloride concentration is 5,000 mg/L.

Sulfate, chloride and Iron (dissolved) shall be monitored from the effluent three (3) times per week when discharging.

The maximum dispersion required for all water quality parameters is 13.3:1. Model predictions have been made for a maximum effluent total flow rate of 11.1 cfs. At the maximum chloride concentration of 5,000 mg/L, this maximum discharge requires a river flow of 1,734 cfs to meet a dispersion of 13.3:1 in less than 25 % of the river volume. The maximum distance to meet the water quality standard for all scenarios is 46 feet downstream with a plume width of 25 feet.

The zone of initial dilution for Ports 1 and 2 has a length of 4.5 feet by a width of 1.12 feet each. The zone of initial dilution for Port 3 has a length of 5.68 feet by a width of 1.38 feet. The zone of initial dilution for Port 4 has a length of 7.64 feet by a width of 1.97 feet. The zone of initial dilution for Port 5 has a length of 9.18 feet by a width of 2.23 feet. The mixing zone has a length of 46 feet by a width of 25 feet.

The permit allows discharge from Outfall 011 when the Big Muddy River is between 30 to 2350 cfs, except after a 1-year, 24-hour precipitation event, Outfall 011 can discharge for 6 consecutive days. The 1-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

The upstream flow ( $Q_{US}$ ) should be based on the full flow measurement upstream of the proposed Outfall 011 that shall be approved by the Agency.

Flow & chloride concentrations should be available for the inspector during inspections.

The upstream and downstream conductivity monitoring locations need to be approved by the Agency.

The permittee shall install a conductivity monitor upstream of the discharge to determine a chloride concentration ( $C_{US}$ ) correlated to the conductivity value. In addition, the permittee shall install a continuous conductivity monitor located within ten (10) feet of the edge of the mixing zone downstream of Outfall 011 to ensure that the chloride concentration (correlated to the conductivity value) stays within the chloride water quality standard. The daily maximum downstream chloride concentration controlled to conductivity shall be reported on the DMR's.

Monthly chloride samples and conductivity measurements, in the Big Muddy River (upstream and downstream) and in the effluent is required to ensure that the calibration curves remain accurate. The calibration curves should be approved by the Agency before discharge, after six months of operation, and yearly thereafter.

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Special Conditions

Outfall 011 should include signage on the bank of the Big Muddy River to inform people on the Big Muddy River that the outfall is present.

A mussel survey and a macroinvertebrate survey is required 1 year after commencement of the discharge from Outfall 011, during the next sampling period.

The pipeline should be constructed with the new material, pressure control sensors (or other type of equipment) to stop the pumps when there is a loss of pressure in the pipeline should be installed. Inspection reports of the pipeline should be available to the Agency's inspector when requested.

- b. The following sampling and monitoring requirements are applicable to flow in Big Muddy River, which receives the discharges from Outfall 011.
- i. All sampling and monitoring required under 15(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.
  - ii. The Big Muddy River shall be monitored and reported quarterly for Discharge Rate, Sulfate, Chloride and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding stream flow characteristics and in-stream contaminant concentrations, the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

- iii. The Big Muddy River shall be monitored and reported annually for Discharge Rate, Sulfate, Chloride and Hardness upstream of the associated outfall.

**Special Condition No. 16:** Outfall 011 downstream monitoring.

- a. A continuous conductivity monitor (correlated to chloride) shall be installed within 10 feet downstream of the edge of the mixing zone.
- b. The facility shall collect three samples per week from the receiving stream of Sulfate, Nickel, Copper, and Iron (dissolved) within 10 feet downstream of the edge of the mixing zone.
- c. If the measured concentration of Chloride, at the downstream monitoring location, exceeds 700 mg/l (this equals 40% over the water quality standard) more than 20 percent of the time in any month, the discharge from Outfall 011 shall cease until the water quality standard can be met within the mixing zone.
- d. If the water quality standard, based on a hardness of 91 mg/L as CaCO<sub>3</sub>, for Sulfate and Iron (dissolved) exceeds the numbers below at the downstream monitoring location, in more than 3 of the samples taken within the month, the discharge from Outfall 011 shall cease until the water quality standards can be met within the mixing zone.
  - i. Sulfate = 700 mg/l (this is 40% over the WQS)
  - ii. Iron (dissolved) = 1.4 mg/l (this is 40% over the WQS)
- e. If the water quality standard, based on a hardness of 91 mg/L as CaCO<sub>3</sub>, for Copper (dissolved) and Nickel (dissolved) exceeds the numbers below at the downstream monitoring location, by 20 percent\* in more than 3 of the samples taken within the month, the discharge from Outfall 011 shall cease until the water quality standards can be met within the mixing zone.
  - i. Copper (dissolved) = 0.0126 mg/l (this is 20% over the WQS)
  - ii. Nickel (dissolved) = 0.0055 mg/l (this is 20% over the WQS)

**Special Condition No. 17:** Data collected in accordance with Special Condition Nos. 13 and 15 above will be utilized to evaluate the appropriateness of the effluent limits established in this Permit. Should the Agency's evaluation of this data indicate revised effluent limits are warranted; this permit may be reopened and modified to incorporate more appropriate effluent limitations. This data will also be used for determination of effluent limitations at the time of permit renewal.

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Special Conditions

**Special Condition No. 18:** Discharges from Outfalls 006, 007, 008 and 011 shall be monitored once per month for the first year and then twice annually spaced at approximately every 6-month apart for the remaining 5-year term of this NPDES Permit. Sampling of the discharges shall be performed utilizing the grab sampling method and analyzed for total (unfiltered) concentrations. The results of the sampling required under this Special Condition shall be submitted twice annually to the Agency in January and July of each calendar year to the addresses indicated in the Special Condition No. 3 above. The parameters to be sampled and the detection limits (minimum reported limits) are as follows:

<u>Parameter</u>	<u>Detection Limit</u>
Arsenic	0.05 mg/L
Barium	0.50 mg/L
Cadmium	0.001 mg/L
Chromium (hexavalent)	0.01 mg/L
Chromium	0.05 mg/L
Copper	0.005 mg/L
Lead	0.05 mg/L
Manganese	0.50 mg/L
Mercury*	1.00 ng/l**
Nickel	0.005 mg/L
Phenols	0.005 mg/L
Selenium	2.000 µg/l***
Silver	0.003 mg/L
Zinc	0.025 mg/L

\* Utilize USEPA Method 1631E and the digestion procedure described in Section 11.1.1.2 of 1631E.

\*\* 1.00 ng/l (nanogram/liter) = 1 part per trillion.

\*\*\* µg/l = micrograms/liter

1 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
2 PUBLIC HEARING  
3 IN RE: NPDES PERMIT NUMBER IL0077666  
4 HELD DECEMBER 18, 2019  
5  
6  
7  
8 RECORD OF PROCEEDINGS of the public  
9 hearing taken at Rent One Park Diamond Club, 1000  
10 Miners Drive, Marion, Illinois, on December 18,  
11 2019, at 6:00 p.m. before Lori A. Rogers, Notary  
12 Public/Illinois Certified Shorthand Reporter  
13 No. 084-002872.  
14  
15 HEARING OFFICER:  
16 Christine Zeivel  
17 Hearing Officer & Right to Know Coordinator  
18 Illinois Environmental Protection Agency  
19 1021 N. Grand Ave. East/P.O. Box 19278  
20 Springfield, IL 62702  
21  
22 IEPA PANEL:  
23 Darin LeCrone  
24 Iwona Ward  
Scott Twait  
Stephanie Diers

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1 HEARING OFFICER: It's 6:00. Good  
2 evening, everyone. This is an informational  
3 hearing on the issuance of a water discharge  
4 permit for Williamson Energy at its Pond Creek  
5 Mine. Let the record reflect the time is now  
6 6:01 p.m. My name's Christine Zeivel, and I am  
7 the hearing officer for the Illinois  
8 Environmental Protection Agency. On behalf of  
9 Director John Kim, I welcome you to tonight's  
10 hearing, and at this time, please silence all  
11 cell phones and other electronic devices if you  
12 have not already done so.

13 As I said, this is an informational  
14 hearing before the Illinois EPA in the matter of  
15 a renewal of a National Pollution Discharge  
16 Elimination System permit, which will be referred  
17 to generally as an N-P-D-E-S or NPDES permit, for  
18 Williamson Energy's Pond Creek Mine located in  
19 Franklin and Williamson counties. As part of  
20 this hearing proceeding, the Illinois EPA has  
21 prepared documents for public review that outline  
22 the major permit terms and conditions that are  
23 the subject of this hearing. And those documents  
24 are available for review at the registration desk

1 and also on the Illinois EPA's Public Notice web  
2 page.

3           The Illinois EPA is holding this  
4 hearing for the purpose of accepting comments  
5 from the public on the proposed renewal of the  
6 NPDES permit for Williamson Energy's Pond Creek  
7 Mine prior to taking final action on the renewal  
8 application. This public hearing is being held  
9 under the provisions of the Illinois EPA's  
10 procedures for permit and closure plan hearings  
11 which can be found at 35 Illinois Administrative  
12 Code, Part 166, Subpart A, which is in accordance  
13 with 35 Illinois Administrative Code Part 309 for  
14 public participation in NPDES Permit  
15 Applications. Copies of these procedures can be  
16 accessed on the website for the Illinois  
17 Pollution Control Board. That website is  
18 [www.ipcb.state.il.us](http://www.ipcb.state.il.us) or if you do not have ready  
19 access to the internet, that can be obtained from  
20 me upon request.

21           An informational public hearing is  
22 not a contested case hearing but rather is meant  
23 as an opportunity for you to provide information  
24 to and ask questions of the Illinois EPA

1 concerning this specific permit. My  
2 responsibility as the hearing officer is to  
3 ensure that this proceeding comports with the  
4 procedural requirements and is conducted in a  
5 proper and fair but efficient manner.

6 Now I would like to explain how  
7 tonight's hearing is going to proceed. First, we  
8 will have the Illinois EPA staff located to my  
9 right introduce themselves. They will each  
10 identify their responsibilities within the agency  
11 in regard to the permitting action, and then a  
12 few of them will provide you a brief overview of  
13 information we believe is relevant to tonight's  
14 proceeding. This will be followed by additional  
15 instructions from me on how we will be taking  
16 oral comments during the hearing this evening,  
17 and then the public will be allowed to ask  
18 questions and provide comments utilizing the  
19 microphone and table located in between the  
20 aisles here in front of the panel.

21 We have a court reporter here who is  
22 taking a record of these proceedings for the  
23 purpose of creating a public record. Therefore,  
24 for her benefit, please keep the general

1 background noise in the room to a minimum so that  
2 she can hear and properly record everything that  
3 is said. Any comments or statements made from  
4 the audience without a microphone will not be  
5 recorded by the court reporter and will not be  
6 located and recorded in the transcript. Illinois  
7 EPA will post the transcript of this hearing on  
8 our web page in the same general place where the  
9 hearing notice and draft permit and other  
10 documents associated with this proceeding have  
11 been posted.

12                   You are not required to provide your  
13 comments orally. Written comments are given the  
14 same consideration as oral comments made during  
15 this hearing and may be submitted to the Illinois  
16 EPA at any time during the comment period which  
17 ends January 17, 2020. All comments submitted by  
18 mail must be postmarked in sufficient time so as  
19 to arrive at the Illinois EPA no later than the  
20 closing day of January 17, 2020. Although we  
21 will continue to accept comments through that  
22 date, tonight is the only time that we will  
23 accept oral comments.

24                   Any person who wishes to make oral

1 comments may do so as long as the statements are  
2 relevant to the issues at hand and the time  
3 allows. If you have not completed a registration  
4 card at this point, please head to the  
5 registration desk and complete a card making sure  
6 to check the appropriate box on the card if you  
7 desire to make comments at the hearing this  
8 evening. If you have lengthy comments, please  
9 consider giving only a summary of those comments  
10 at this hearing and then submitting the remainder  
11 and entirety of your comments to the Agency  
12 before the end of the comment period, and I will  
13 ensure that they are included in the hearing  
14 record. Please do keep your comments relevant to  
15 the conditions and requirements in the permit  
16 that Illinois EPA is proposing to renew. If your  
17 comments fall outside of the scope of this  
18 hearing, I may ask you to proceed to your next  
19 issue.

20 Each speaker will have the option of  
21 addressing questions to the Illinois EPA panel  
22 located to my right or making just a general  
23 comment, or you can do both. However, since we  
24 have a limited time in which to conduct this

1 hearing, Illinois EPA staff members will be  
2 responding to issues presented primarily for  
3 clarification purposes. We will be available to  
4 answer questions if those answers are readily  
5 available, but the Agency panel may respond by  
6 agreeing to defer the response to the  
7 responsiveness summary which will be posted  
8 following the close of the comment period. I  
9 will not allow speakers to argue, cross-examine  
10 or engage in prolonged dialogue with each other  
11 or with members of the panel, and I will also not  
12 allow members of the public to address comments  
13 to other members of the public. Comments from  
14 the public are to be addressed to the hearing  
15 panel located at the front of the room and the  
16 court reporter. We do have representatives of  
17 Williamson Energy here tonight, and they will be  
18 providing a statement for the record, but they  
19 will not be responding directly to questions or  
20 issues raised at this hearing tonight.

21 As the hearing officer, I intend to  
22 treat everyone in this room in a courteous,  
23 respectful and professional manner, and I ask  
24 that members of the panel and the public please

1 do the same. You may disagree with or object to  
2 some of the statements and comments that are made  
3 here tonight, but this is a public hearing, and  
4 everyone has a right to express their comments on  
5 this matter. However, I will only allow  
6 statements to be made tonight that relate to  
7 issues involved with this specific water permit.  
8 Statements and comments that are of a personal  
9 nature or reflect on the character or motive of a  
10 person or group are not appropriate at this  
11 hearing, and if statements or comments begin to  
12 drift into this area, I may interrupt the person  
13 speaking and ask them to move on to their next  
14 issue. While the issues tonight may justifiably  
15 invoke an emotional response, responsive noises  
16 such as applause, jeering, booing and other  
17 responsive noises are also not appropriate. It  
18 interfere's with the court reporter's ability to  
19 create a fair and accurate record of tonight's  
20 proceeding. And so I ask that everyone in the  
21 audience respect her time and ability to be able  
22 to provide a transcript that's accurate for both  
23 the benefit of the Agency and for the benefit of  
24 the public following this hearing. If the

1 conduct of persons attending this hearing should  
2 become unruly, I am authorized to adjourn this  
3 hearing should the actions warrant. And if that  
4 were to happen, the Illinois EPA would still  
5 accept written comments through the close of the  
6 comment period which is January 17, 2020.

7 In addition, I'd like to briefly  
8 stress that we want to avoid unnecessary  
9 repetition. As you can see, we have a full room  
10 tonight, and there are many individuals who have  
11 indicated their desire to provide comments, so if  
12 anyone before you has already presented what is  
13 contained in your comments, please skip over  
14 those issues when you speak. If someone speaking  
15 before you has already said what you desire to  
16 say, you can pass when I call your name to come  
17 forward. Once a single point is made, it makes  
18 no difference if that same point is made once or  
19 a dozen times. It will be considered, and it  
20 will be responded to in the responsiveness  
21 summary. Duplicative comments or sentiments will  
22 not lend weight to the Agency's decision in this  
23 matter.

24 All who legibly complete a

1 registration card or submit written comments  
2 during the comment period will be notified of the  
3 final decision in the matter and of the  
4 availability of the responsiveness summary. In  
5 the responsiveness summary, the Illinois EPA will  
6 respond to relevant issues that were raised at  
7 this hearing or submitted prior to the close of  
8 the comment period on January 17, 2020. Again, I  
9 will accept those written comments as long as  
10 they are received at the Illinois EPA in  
11 Springfield by that date.

12                   While the record is open, all  
13 relevant comments, documents and data will be  
14 placed into the hearing record as exhibits. You  
15 can send all written documents to the attention  
16 of Barb Lieberoff in the matter as directed in  
17 the revised public notice which is available at  
18 the registration desk and on the Agency's public  
19 notice web page. The physical mailing address  
20 should you want to submit your comments via mail  
21 is located in that public notice. And if you  
22 wanted to send your comments via e-mail, that  
23 e-mail address is [epa.publichearingcom](mailto:epa.publichearingcom). That's  
24 [publichearingcom@illinois.gov](mailto:publichearingcom@illinois.gov). Please include

1 Pond Creek Mine NPDES or the permit number, which  
2 is IL0077666, in the subject line of the e-mail.  
3 Again, those addresses are located in the public  
4 notice that's available to you at the  
5 registration desk or on the web page.

6 At this time, I'm going to have the  
7 Illinois EPA staff present tonight introduce  
8 themselves and make a brief statement regarding  
9 the permit and tonight's proceeding. Afterwards,  
10 they'll return it to me, and I will provide  
11 further instruction on how we will be taking  
12 comments during this hearing, and then we will  
13 begin taking comments from the public.

14 MR. LeCRONE: Is it on? Not on? No,  
15 not on. Okay. I'll just go ahead and yell then.  
16 My name is Darin LeCrone. I'm the manager of the  
17 Industrial Unit, so I am the -- you can't hear  
18 me?

19 My name's Darin LeCrone. I am the  
20 manager of the Industrial Unit and the permit  
21 section, and so I am the one whose name is on the  
22 draft permit and have the supervisory  
23 responsibilities for not only coal mine  
24 permitting but other non-municipal-type

1 wastewaters.

2 MS. WARD: My name is Iwona Ward, and  
3 I am with the permit regulation unit for the  
4 agency and responsible for reviewing the coal  
5 mine applications and preparation of the coal  
6 mining EPA's permits.

7 MR. TWAIT: My name is Scott Twait.  
8 I'm the manager of the Water Quality Standards  
9 Section. I worked on the antidegradation  
10 assessment, the mixing zone, which is based on  
11 the CORMIX model, and water quality issues for  
12 the NPDES permit.

13 MS. DIERS: Hi. My name is Stephanie  
14 Diers, and I'm legal counsel for the Agency.

15 MS. WARD: Good evening, ladies and  
16 gentlemen. Again, my name is Iwona Ward, and I  
17 am the permit engineer for the Mine Pollution  
18 Control Program for the Environmental Protection  
19 Agency.

20 The purpose of this renewal and  
21 modified NPDES permit is to regulate surface  
22 discharges to the water of the state from the  
23 surface facilities of the existing underground  
24 Pond Creek Mine. The surface facilities of this

1 underground mining operation are located on  
2 approximately 986 acres and include drainage  
3 control structures.

4 UNIDENTIFIED SPEAKER: We can't hear  
5 you.

6 MS. WARD: I will try and speak  
7 louder. Will this be okay? Well, I will try  
8 again. The purpose of this renewal and modified  
9 NPDES permit is to regulate surface discharges to  
10 water of the state from the surface facilities of  
11 the existing underground Pond Creek Mine. The  
12 surface facilities of this underground mining  
13 operation are located on approximately 986 acres  
14 and include drainage control structures, nine  
15 sedimentation basins, and a coal preparation  
16 plant with a slurry disposal system that is  
17 operated as a closed circuit. The surface  
18 facilities at this operation also includes coal  
19 stockpiles, coal conveyors, a railroad loop,  
20 access roads, office and maintenance buildings.

21 Nine basins with eleven outfalls are  
22 identified in the NPDES permit which control  
23 runoff from these surface facilities. Receiving  
24 waters for the discharges from the facility are

1 identified as Pond Creek, unnamed tributaries to  
2 Pond Creek, and the Big Muddy River.

3 The following additional changes and  
4 modification have been incorporated into the  
5 current NPDES permit:

6 Three new discharges of Outfall 009  
7 discharging to the Pond Creek, Outfall 009ES  
8 discharging to the unknown tributaries of the  
9 Pond Creek, and Outfall 011 discharging to the  
10 Big Muddy River;

11 Various mining operation and drainage  
12 control plan revisions;

13 About 229 acres incorporated for  
14 Refuse Disposal Area Number 3;

15 70.7 acres incorporated for the  
16 pipeline to the Big Muddy River;

17 About 145 acres for various IBR's for  
18 additional permit area;

19 Addition of bi-annual metals  
20 monitoring of discharges from Outfall Numbers 6,  
21 7, 8, 9, 9ES and 11;

22 Incorporated previously issued  
23 Subtitle D Permits;

24 Mixing zone to the Big Muddy River is

1 approved with this permit. Excess water will be  
2 transported from the Pond Creek Mine to Outfall  
3 Number 011 located in the Big Muddy River through  
4 an HDPE pipeline. Water will be pumped from the  
5 water holding cell through approximately 12.5  
6 miles of pipeline to the diffuser located at the  
7 mixing zone. The amount of water that could be  
8 discharged through the pipeline depends upon the  
9 chloride concentration in the discharge stream,  
10 the background chloride content, and the flow in  
11 the Big Muddy River. Maximum pumping rate is  
12 5,000 gallons per minute from the facility.

13 I would like to thank you everyone  
14 for coming this evening and welcome you to the  
15 Illinois EPA public hearing. Thank you.

16 MR. TWAIT: Once again, my name is  
17 Scott Twait. I want to provide some background  
18 on the mixing zone issue as the Agency has  
19 received several comments on this topic. Mixing  
20 zones are allowed by the Clean Water Act and  
21 Board Regulations. Mixing zones are a defined  
22 area in the receiving stream which allows the  
23 discharger to design an effluent structure to mix  
24 their effluent with the receiving stream to meet

1 the water quality standards. This facility will  
2 have to calculate the chloride concentration at  
3 the edge of the mixing zone based on the upstream  
4 river flow and upstream chloride concentration  
5 and the effluent flow and the effluent chloride  
6 concentration. The maximum calculated chloride  
7 concentration at the edge of the mixing zone will  
8 then have to be reported on the DMRs, which is  
9 the discharge monitoring report, which is  
10 submitted to the Agency. Using the equation in  
11 Special Condition 14 and 16, they can only use  
12 25 percent of the receiving stream for mixing.  
13 The facility will be installing conductivity  
14 meters upstream in the effluent pipe and  
15 downstream of the mixing zone. The conductivity  
16 meters will be correlated to the chloride  
17 concentration so that the facility will have  
18 continuous information of the chloride  
19 concentration in the stream (upstream and  
20 downstream) and the effluent. In addition to the  
21 calculated chloride concentration at the edge of  
22 the mixing zone, the facility will be required to  
23 install a conductivity meter downstream of the  
24 mixing zone that is correlated to the chloride

1 concentration. They will then be required to  
2 report the highest chloride concentration  
3 (correlated to conductivity) on the DMRs. This  
4 will ensure that the calculations for the mixing  
5 zone are being computed correctly and the water  
6 quality standard is being met for chlorides  
7 downstream of the mixing zone.

8           Also, I wanted to let you know that  
9 the company has provided additional information  
10 yesterday by e-mail with a paper copy to follow  
11 in response to the public comments that have been  
12 received. The information that the company  
13 provided includes: Supplemental information  
14 concerning the antidegradation document for Pond  
15 Creek Mine; the Big Muddy flood analysis; and  
16 modeling of the Big Muddy River chloride  
17 dispersion downstream of the proposed mixing zone  
18 regarding Pond Creek Mine.

19           The Agency has not had time to fully  
20 review these materials, but they will be added to  
21 the permit record and reviewed in considering  
22 comments and revisions to the draft permit.

23           Finally, the Agency has received a  
24 lot of comments about flooding and has prepared

1 the graphs shown on the easels over here. The  
2 first graph is Exhibit 239. The first graph  
3 shows the monthly mean flows of the Big Muddy  
4 River for the calendar years of 2005 to 2009 at  
5 the Plumfield Station, which is just upstream of  
6 the discharge. 2015 to 2019, sorry. This  
7 station is a few miles upstream of the proposed  
8 discharge location. The graph also shows a  
9 straight line at the bottom showing the maximum  
10 discharge from Pond Creek Mine of 11.1 cfs --  
11 that's cubic feet per second. This is provided  
12 to indicate the relative magnitude of the maximum  
13 discharge of the Pond Creek Mine of 11.1 cfs to  
14 the monthly mean flow of the Big Muddy River at  
15 the upstream gauge station. Please note that the  
16 peak monthly mean on this graph is 4,893 cfs.  
17 When the Big Muddy River is flowing at this rate,  
18 the maximum discharge of the mine, 11.1 cfs, is  
19 0.23 percent of the flow. Using the peak in 2015  
20 monthly average flow of 2,122 cfs, the maximum  
21 discharge of the mine is 0.52 percent of the  
22 flow.

23 The second figure, Exhibit 240, shows  
24 the lowest monthly mean for each calendar year of

1 2015 to 2019 with a comparison to the maximum  
2 discharge rate from the Pond Creek Mine of 11.1  
3 cfs. This graph shows that there is enough flow  
4 during the dryer portions of the year for the Big  
5 Muddy River to accept effluent and maintain the  
6 chloride water quality standard. Thank you for  
7 attending this hearing.

8 HEARING OFFICER: I will note that we  
9 had someone scheduled to be here tonight from the  
10 Agency's groundwater division, but she was unable  
11 to attend at the last minute due to health  
12 reasons. Any questions pertaining specifically  
13 to groundwater, which we acknowledge will be  
14 present by the comments received to date, those  
15 comments may be addressed in the responsiveness  
16 summary and not by tonight's panel. I apologize  
17 for the absence of our groundwater division  
18 representative tonight.

19 People who have requested to speak  
20 will be called upon in the order in which they  
21 registered to make a comment. I have that stack  
22 of cards here. For the purpose of allowing  
23 everyone to have a chance to comment and to  
24 ensure that we conduct this hearing in a timely

1 fashion, I'm going to have to impose a time limit  
2 of four to five minutes per speaker. We have had  
3 over fifty members of the public indicate their  
4 desire to speak tonight, and we'd like to give  
5 everybody an opportunity to come to the  
6 microphone. If everyone has had an opportunity  
7 to speak and we still have time, I may allow  
8 those who initially did not desire to speak to  
9 come to the microphone or those who have spoken  
10 to speak again if there's additional comments  
11 that they weren't able to fit in during their  
12 initial time. If we cannot accommodate everyone  
13 who desires to speak and make comments this  
14 evening, please submit your comments to us in  
15 writing. Each comment submitted is received,  
16 entered into the hearing record, and addressed in  
17 the responsiveness summary. Again, those  
18 comments are given the same weight as any  
19 comments made orally here tonight.

20 We will start with the first speaker  
21 at the microphone, as I said, that's located in  
22 the aisleway here beginning with Clayton Cross on  
23 behalf of Williamson with Foresight. Once he  
24 begins -- or before he begins, I will read the

1 name of the next speaker and ask that you come  
2 and stand behind them so that you can approach  
3 the microphone as soon as the previous speaker  
4 has finished. I recognize that this may be  
5 inconvenient for some, but by having you ready  
6 behind the speaker who is at the microphone,  
7 we'll be able to get people to the microphone  
8 quicker and be able to fit in as many speakers  
9 tonight as possible.

10           When it is your turn to speak, you  
11 should state your name and, if applicable, any  
12 governmental body, organization or association  
13 that you represent for the record. If you are  
14 not representing a governmental body, an  
15 organization or an association, you may simply  
16 indicate that you're a concerned citizen,  
17 resident or member of the public.

18           For the benefit of the court  
19 reporter, I ask that you spell your last name.  
20 If there are alternate spellings to your first  
21 name, and you know who you are, please provide  
22 the spelling -- the correct spelling of your  
23 first name for the benefit of the court reporter.  
24 And once you spell your name, we will start

1 timing and your time period will begin.

2 Mr. Twait referenced two graphs that  
3 have been provided today for visual  
4 representation. As he referenced, those graphs  
5 have been marked as Exhibit 239 and 240. If you  
6 have questions specific to those graphs or  
7 comments specific to those graphs, please  
8 reference the exhibit numbers. It makes it much  
9 more clear for the transcript and for the Agency  
10 reviewing the comments later exactly to what you  
11 were referencing.

12 UNIDENTIFIED SPEAKER: Can you name  
13 those exhibit numbers again?

14 HEARING OFFICER: Sure. It's  
15 Exhibit 239 is the graph that's closest to me,  
16 and Exhibit 240 is the -- that's farthest away to  
17 my left that shows the minimum mean flow.

18 I ask that while you're speaking, you  
19 direct your attention to the hearing panel at the  
20 front of the room and to the court reporter to  
21 ensure that an accurate record of your comments  
22 is made. If you're reading from a prepared  
23 statement, please read slowly so that all of your  
24 comments can be transcribed by the court

1 reporter. And also, please consider leaving a  
2 copy of your prepared remarks for the court  
3 reporter. You can just walk up here and provide  
4 them to this corner of the table when you're done  
5 speaking. That will help make sure that the  
6 transcription is as accurate as possible.

7 Before we get started, I would just  
8 like you to raise your hand if you cannot hear me  
9 or if you have not been able to hear us to this  
10 point. No? Wonderful.

11 As I said, Clayton Cross is with  
12 Foresight on behalf of Williamson Energy.  
13 Clayton will be giving a statement that's limited  
14 to the same period as any other member of the  
15 public, and then our next speaker following  
16 Clayton, if you wouldn't mind coming behind the  
17 microphone, is Clare Killman with Carbondale  
18 Spring. You will be up following Clayton's  
19 comments.

20 CLAYTON CROSS: Good evening. Is  
21 this on? Can you hear me? Hello? Okay. Good  
22 evening. My name is Clayton Cross, last name  
23 C-R-O-S-S. I am the Director of Engineering at  
24 Foresight and Williamson Energy. Williamson

1 Energy operates one of the safest and most  
2 productive mines in the entire world. This is no  
3 mistake. Williamson Energy has invested in the  
4 best people, best systems and best equipment to  
5 build this coal mine. In all, over \$600 million  
6 has been invested into this property. We are  
7 responsible for employing 194 coal miners  
8 directly. Another 283 contractors work  
9 supplying, servicing and performing some other  
10 activity for our operation. This means almost  
11 500 families in this area directly depend upon  
12 the success of this mine for their livelihood, to  
13 pay their mortgages, educate their children, and  
14 buy Christmas gifts. Furthermore, every year  
15 this mine directly or indirectly generates  
16 \$78 million in state, county, and local revenues.  
17 The economic boost that this mining operation  
18 provides to southern Illinois is very, very  
19 significant.

20           Given the extensive coal reserve that  
21 we have the rights to mine, this mine could be  
22 operating for another 50 years at current  
23 production levels. We need this permit renewed  
24 to keep this mine open long term and operating in

1 an environmentally-responsible manner while  
2 ensuring that our coal miners are not exposed to  
3 the unnecessary dangers of excessive water. This  
4 mine has operated since 2006, and the purpose of  
5 this hearing is to take comments on the IEPA's  
6 decision to renew and modify our NPDES permit.  
7 Generally, the NPDES permit allows us to  
8 discharge water at our mining operation under  
9 certain conditions.

10           When we first started this mine in  
11 2006, the mine was very dry, meaning that we had  
12 to import almost all of our water for various  
13 uses. In other words, the mine didn't make much  
14 water. Now, as our mine has expanded for 13  
15 years, we have had to handle an increasing amount  
16 of groundwater that is seeping into our mine.

17           This groundwater infiltrating into  
18 our underground coal mine presents two main  
19 problems for us. First, we have to get it out of  
20 the mine, because the water has the ability to  
21 block our critical ventilation systems or flood  
22 escapeways out of the mine, any of which leads to  
23 serious risks to our miners. We have to get the  
24 water out of the mine. We do this with pumps

1 that bring the water to the surface and pipelines  
2 that convey it to our main facilities.

3 This brings me to the second problem.  
4 The groundwater that is infiltrating our mine has  
5 naturally-occurring sulfates and chlorides in it.  
6 So one nontechnical way to look at it, it's a  
7 little bit salty, what you might call "brackish"  
8 water.

9 Again, this little bit of saltiness  
10 is naturally occurring in the water. It is not  
11 caused by anything that we add or because the  
12 water comes into contact with our coal. But  
13 because it is relatively salty, we have to deal  
14 with it differently than normal water.  
15 Historically, we have stored the water in surface  
16 ponds or impoundments, but they have limited  
17 capacities. We recirculate and use as much of  
18 the brackish water as we can on site through  
19 various processes, but we still have an excess.

20 So as many of you know, the plan to  
21 deal with this problem long term involves  
22 Williamson Energy building a twelve and one-half  
23 mile buried pipeline to the Big Muddy River,  
24 installing a multi-port diffuser, and tying the

1 diffuser to real-time continuous monitors. All  
2 of these elements work together to strategically  
3 discharge the water through a mixing zone into a  
4 water body that can easily assimilate it without  
5 violating the water quality standard. We  
6 evaluated other alternatives -- reverse osmosis,  
7 evaporation, and crystallization, to name a few,  
8 but these methods consume a tremendous amount of  
9 energy and require the disposal of a concentrated  
10 cake to a separate landfill. It is not as simple  
11 as filtering the water. The salt is dissolved.

12           This mixing zone is not going to be  
13 just an open pipe dumping continuously into the  
14 river. There are very specific controls to make  
15 sure the discharges are compliant with water  
16 quality standards. Water quality standards are  
17 adopted and approved by both the US and Illinois  
18 EPA based on a rigorous scientific process that  
19 result in standards that are conservatively  
20 protective of aquatic life. In addition, we have  
21 reviewed the aquatic life present in the Big  
22 Muddy River in conjunction with academic experts,  
23 and they have concluded that our discharges will  
24 not adversely impact aquatic life in the Big

1 Muddy River.

2                   We will install continuous water  
3 quality monitors upstream and downstream of the  
4 diffuser (or outfall structure). This will give  
5 us virtually continuous data on the chloride  
6 levels in the receiving water, the Big Muddy  
7 River. And if we see on these monitors that the  
8 Big Muddy is not capable of accepting our water  
9 without violating the water quality standard,  
10 then we will not discharge. Instead, we will  
11 hold the water until the river can receive it  
12 without violating the standard. This provides  
13 the ability to control the flow so that water  
14 quality standards will be met on a continuous  
15 basis.

16                   Lastly, I wish to address the concern  
17 for increasing the flood risk. Our discharge  
18 will not have any practically-measurable impact  
19 to the surface water elevation and to the flood  
20 extent. For example, we had a large rain event  
21 in this area on October 26th of this past year.  
22 It produced nearly three and a half inches of  
23 rain. This is almost equivalent to a two-year  
24 24-hour rain event for this area. The Big Muddy

1 River at the Plumfield Bridge monitoring station  
2 eventually crested at a height of almost 10 feet,  
3 flowing 834 cubic feet per second, which is  
4 374,326 gallons per minute. Again, almost  
5 375,000 gallons per minute. If we were to pump  
6 our max capacity of right at 5,000 gallons per  
7 minute, our contribution would increase the water  
8 elevation at the Route 13 Bridge in Murphysboro  
9 by 1.8 millimeters.

10 HEARING OFFICER: Mr. Cross, I'm  
11 going to have to ask you to wrap up.

12 CLAYTON CROSS: Yes, ma'am. This is  
13 equivalent to the thickness of a quarter, so it's  
14 not practically measurable.

15 Approving the requested mixing zone  
16 is the safest, most environmentally sound and  
17 most effective way for Williamson Energy to  
18 manage its excess water to ensure the miners'  
19 safety and enhance our ability to meet the  
20 mandated water quality standards. We are fully  
21 committed to operating this system within the  
22 legal limits of this permit. This long-term  
23 solution will allow our first-class operation to  
24 continue and support about 500 local families.

1 Thank you.

2 HEARING OFFICER: If you're providing  
3 your comments to the court reporter, we'll enter  
4 it as Exhibit 241. I believe those comments may  
5 have additionally contained pictures of the  
6 graphs that are provided to the right of the  
7 panel today. Any information you see to the  
8 right of the panel has been provided by  
9 Williamson and Foresight and are not products of  
10 the Agency. If you have any questions specific  
11 to those graphs, you can reference Exhibit 241 in  
12 your questions orally tonight or through your  
13 written comments.

14 Clare, you can proceed to the  
15 microphone, and next up is Thomas Finkenkeller.  
16 You'll be up following Clare.

17 CLARE KILLMAN: Thank you, Christine.  
18 My name is Clare Killman. That's spelled  
19 C-L-A-R-E, K-I-L-L-M-A-N just for the alternative  
20 spelling. Is it okay if I ask a few questions?

21 HEARING OFFICER: Absolutely.

22 CLARE KILLMAN: Okay. This first one  
23 is for Christine Zevil (ph)? Is that how you --

24 HEARING OFFICER: Zeivel.

1 CLARE KILLMAN: Zeivel?

2 HEARING OFFICER: Yes.

3 CLARE KILLMAN: Okay. Just for the  
4 point of clarification. Are you all acting as  
5 representatives of the EPA currently?

6 HEARING OFFICER: I am an employee of  
7 the Illinois EPA, and I have been designated by  
8 the Director as the Agency's hearing officer.

9 CLARE KILLMAN: Yes. Would you  
10 consider everyone on this panel to be acting  
11 currently in capacities as reps of the EPA or  
12 whatever capacity they're acting in?

13 HEARING OFFICER: Everyone is an  
14 employee of the Illinois EPA.

15 CLARE KILLMAN: Cool. Thank you,  
16 just for the video camera and all of that.

17 HEARING OFFICER: Absolutely.

18 CLARE KILLMAN: So you're all acting  
19 currently as the EPA, like representatives of  
20 that organization here today. And that would  
21 mean that you would be able to speak to the  
22 ethical considerations of the EPA as I  
23 understand.

24 This first question is for Mr. Twait.

1 Do you consider humans to be a part of the  
2 environment you are obliged to protect?

3 MR. TWAIT: Yes, we have human health  
4 criteria also.

5 CLARE KILLMAN: Do you think it's  
6 irresponsible for an EPA official to misrepresent  
7 written data and then need to be corrected by  
8 their hearing officer in a public hearing?

9 HEARING OFFICER: I provided him  
10 clarification, because I've seen the written  
11 comments beforehand. They were written  
12 accurately, but while he was reading, he  
13 misspoke, and so I wanted to make sure for the  
14 clarity of the record. So it was a mistake, a  
15 misspeak and not a purposeful misrepresentation.

16 CLARE KILLMAN: And do you find that  
17 to be irresponsible is the question?

18 MR. TWAIT: When I read the material,  
19 I made a mistake, and she corrected me.

20 CLARE KILLMAN: Cool. Thank you.  
21 This next question is for LeCrone, if you don't  
22 mind. Just pass the mike. Darin, the definition  
23 of a sellout is the betrayal of one's principles  
24 for reasons of expedience. And as I understand

1 it, this permit's on your desk, right? So should  
2 you approve this permit, would you consider  
3 yourself a sellout and the EPA sellouts or just  
4 unprincipled?

5 HEARING OFFICER: Miss Killman, I  
6 clarified in my opening comments that remarks of  
7 a personal nature that speak to an individual's  
8 character or otherwise wouldn't be appropriate  
9 for this hearing. We're here to address  
10 specifically the technical issues, terms and  
11 conditions related to the permit renewal.

12 CLARE KILLMAN: Sure.

13 HEARING OFFICER: I ask that you keep  
14 your comments to that.

15 CLARE KILLMAN: Sure. As I said  
16 earlier, that you are acting as the EPA, so maybe  
17 this isn't necessarily directed to LeCrone as an  
18 individual, but more as a representative of the  
19 EPA offering ethical considerations privy to his  
20 position, right?

21 HEARING OFFICER: But comments  
22 specific to individuals are inappropriate for  
23 this hearing, and your comments --

24 CLARE KILLMAN: Sure.

1 HEARING OFFICER: -- need to be  
2 directed to the matter of the permit, the permit  
3 conditions, issues and questions surrounding the  
4 permit itself.

5 CLARE KILLMAN: And if the permit is  
6 signed, do you consider yourselves sellouts or  
7 just unprincipled?

8 HEARING OFFICER: Miss Killman, if  
9 you continue with your line of questioning, I'm  
10 going to have to move on to the next speaker --

11 CLARE KILLMAN: Sure, I understand.

12 HEARING OFFICER: -- unless you have  
13 another issue that you feel is more relevant.

14 CLARE KILLMAN: Okay. I'm totally  
15 fine if you move on. Thanks.

16 HEARING OFFICER: Thomas  
17 Finkenkeller, you are up next to the microphone.  
18 And following Thomas, Nick -- and I apologize for  
19 any mispronunciations tonight. I'm doing my  
20 best. Nick Smalego (ph)? Smaligo? Thank you.

21 THOMAS FINKENKELLER: Good evening.  
22 My name is Thomas Finkenkeller. First name  
23 T-H-O-M-A-S. Last name F-I-N-K-E-N-K-E-L-L-E-R.  
24 I am a concerned citizen living in Carbondale,

1 Illinois. One of my concerns is about trace  
2 effluence from the mine discharges. Looking at a  
3 pollutant loading report for Pond Creek Mine for  
4 all the years, for at least seven years in the  
5 past, there was at least one year that had  
6 incomplete data points, and I want to reiterate  
7 or I want to stress that it must be made clear  
8 that it is not just sulfates and chlorides that  
9 are important to have complete data on, because  
10 there are many other different elements. Whether  
11 they are aluminum or boron or various transition  
12 metals, it can be toxic in relatively low  
13 concentrations. I must stress that the data must  
14 always be complete before any permit can be  
15 approved. Thank you all.

16 HEARING OFFICER: Nick, you will be  
17 next to the microphone. And following Nick is  
18 Keenan Bell, Sr.

19 NICK SMALIGO: Okay, hi. My name is  
20 Nick Smaligo, S-M-A-L-I-G-O. I feel a bit  
21 limited in terms of the ability to speak, because  
22 there's certain constraints that have been put on  
23 the discourse here. One of them, as you said, to  
24 focus solely on the permit and the discharge, but

1 the problem is is that's connected to a mining  
2 operation and that, as Mr. Cross said, this is  
3 necessary in order to sustain that mining  
4 operation. And you all as members of the EPA and  
5 all of us as environmentally-conscious people  
6 here understand that you can't really separate  
7 one thing out from the whole that it's a part of.  
8 You can for a moment, but if you just focus on  
9 that one thing, then you're making an error in  
10 your perception. So we can't discuss this and  
11 the health of the Big Muddy River, the ecosystems  
12 that it's connected to, southern Illinois as a  
13 whole unless we're also thinking about the effect  
14 of coal mining on climate change, on the two  
15 million people who die every year as a result of  
16 the burning of coal, fossil fuels. And so it  
17 feels very limiting to say, well, we can only  
18 focus just on this thing, because these things  
19 are connected. And I understand that  
20 institutionally you have to put up certain  
21 blinders in order to function within the role  
22 that you have as a job, but that's not sufficient  
23 for the moment that we're in.

24 There are scientists around the globe

1 ringing the alarm bells about human-caused  
2 climate change of which coal burning has had a  
3 tremendous contribution to. And we can't -- you  
4 know, you can't be an environmental protection  
5 agency unless you actually consider the  
6 ecological crises that we're in. And so it seems  
7 to be utterly irresponsible to even consider  
8 sustaining this industry which has destroyed the  
9 lungs and the land for a hundred years in this  
10 place. And it's pathetic to see the lackeys of  
11 that corporation come up here and give their  
12 reasoned arguments within this very narrow window  
13 while the companies that own them have been  
14 funding climate change denial for decades. That  
15 was recently revealed by when Murray Energy which  
16 went into bankruptcy last month had to make its  
17 records of its political contributions public.  
18 So this is a company that is actively obscuring  
19 scientific discourse and the ability for us to  
20 make an informed decision about how we want to  
21 develop in this region and how we can freaking  
22 live. And here you are as members of an  
23 environmental protection agency trying to give  
24 them one last chance to sustain this horrible

1 practice for another decade or so in an industry  
2 that is in terminal structural decline in this  
3 region. It doesn't have a future, and they're  
4 trying to take us down with it.

5 Foresight Energy is valued at 8 cents  
6 on the stock market as of last week. They're on  
7 the verge of bankruptcy, and you're trying to  
8 give them a way out here. And when they go into  
9 bankruptcy, by the way, you know they're going to  
10 take all of that money and they're going to fuck  
11 over their workers just like that coal mine did  
12 down in Kentucky where the workers, to their  
13 credit, blocked the coal train and eventually won  
14 a settlement there. But this is disgusting, and  
15 to echo my friend Clare's comments, like the  
16 procedure, the idea that we're all just going to  
17 like keep it very, very narrow here and not talk  
18 about the issues that are actually driving all of  
19 us here, but to pretend that we're all biologists  
20 or chemists, we're not. But we know that this  
21 industry can't go on, because we've listened to  
22 lots and lots of biologists and chemists.

23 And so this is an opportunity for you  
24 all to make one tiny dent in the right direction.

1 And rather than permitting the continuing  
2 destruction of the ecosystems on which the life  
3 on this planet depends, right, you can put your  
4 foot down and say, No, sorry, Foresight, you're  
5 going to have to go into bankruptcy, and you're  
6 going to have to shut this mine down. And the  
7 rest of us here, especially those families on  
8 whose livelihood depends on this mine, we're all  
9 going to have to really quick figure out how we  
10 are going to live going forward, and that's a  
11 question we're all asking. Those families are in  
12 the same boat as the rest of us. But right now,  
13 we can't keep going down this path. Thank you.

14 HEARING OFFICER: Mr. Keenan Bell,  
15 you're up to the microphone. And following  
16 Mr. Bell, Mike Ellet, E-L-L-E-T, I believe is  
17 your last name, sir? Keenan, whenever you're  
18 ready.

19 KEENAN BELL: Thank you. Peace and  
20 blessings to everybody here tonight. Thank you  
21 for coming out. I didn't know I was coming out,  
22 but, you know, I'm a member of the universe, and  
23 I come here to speak on behalf of all of those  
24 things who cannot speak for themselves like the

1 wildlife, like the children, like the children in  
2 the wombs. I mean, I mean, it gets really deep.  
3 I mean, everybody speaks about going to heaven,  
4 right? Everybody talks about going to heaven and  
5 Hell, but no one else understands about the  
6 kingdom of nature first. You have to first  
7 respect the earth if you are going to expect the  
8 earth to respect you.

9           Now, people wonder why there's  
10 earthquakes going on all around the world. They  
11 wonder why these things, these drastic things are  
12 happening. Okay. When you take blood from the  
13 human body, what happens? It collapses and dies.  
14 That's what's going on with the earthquakes,  
15 okay? I can give you an explanation. All right.  
16 First and foremost, I must start over. My name  
17 is Keenan Bell, Sr. My mother named me. I was  
18 born here in Carbondale Memorial Hospital, so  
19 that makes me a native here of this area and  
20 these lands. And I have a name given by God. I  
21 am Chief Yunio Benyaweh (ph), and I speak in the  
22 name of Yaweh and his son Yahshua or Christ.  
23 Now, Christ died for all of us. I don't know if  
24 you believe in him. I know this. It may not be

1     pertinent to this conversation or whatnot, but  
2     he's real, and he is coming back. And I hate to  
3     be doing some drilling or polluting his earth  
4     when he comes back. I mean, you guys are  
5     bringing a curse upon these lands. Don't you see  
6     it? 2020, 20/20 vision, 2020 Mad Dog, whatever  
7     you want to call it. You guys are opening up  
8     Pandora's box. Please stop, because if you  
9     don't, then there will be repercussions, and  
10    those things you guys aren't ready for. I mean,  
11    Gaia, Mother Earth, she's real. I mean, she  
12    feeds us; she clothes us; she shelters us. I  
13    mean, she's everything we need. Why do we  
14    continue and insist on destroying her? Why? You  
15    ask yourself that question when you go to sleep  
16    at night.

17                    You know what? It's not about clean  
18    this and that. It's about money, and money is  
19    the root of all evil. You talk about all of  
20    these millions and these billions. Why isn't  
21    this money going to help these homeless people?  
22    I'm staying currently at this homeless shelter,  
23    because I'm a traveler, and I didn't know I would  
24    be here tonight. I'm going to wrap this up.

1 I'll tell you this. Decisions and the choices is  
2 what molds one's lives. See, your lives can be  
3 filled with happiness. Well, you could be doomed  
4 from all your sins and die, die, die.

5 Have a blessed night, everybody. And  
6 for the record, everybody, if you continue with  
7 this -- and I am just a messenger -- you will  
8 curse yourself and your families. Have a great  
9 night.

10 HEARING OFFICER: Mr. Ellet, you're  
11 up to the microphone. And following Mike, Lucia  
12 Amorelli -- Lucia, you'll be up following Mike's  
13 comments.

14 MIKE ELLET: My name is Mike Ellet.  
15 Last name is E-L-L-E-T. My credentials are I'm  
16 retired. I was a licensed -- under the  
17 Department of Health licensed state plumber. I  
18 started my occupation in 1964 in the Air Force as  
19 a plumber, went to plumbing school. After that,  
20 I've come through the apprentice program, got my  
21 license. I was in business 45 years. So a part  
22 of my license fell under the Department of  
23 Health, and my other part of my license fell  
24 under the EPA. I went through the Environmental

1 Resources Training Center in Edwardsville to  
2 become a cross-connection control device  
3 inspector, State Drinking Water Act. I see we're  
4 addressing the Clean Water Act here tonight.

5 Now I'm going to go back in a little  
6 bit of history why I'm here. I was raised on the  
7 Big Muddy River, that direction over there  
8 towards Hurst and Bush in a little community  
9 called Blairsville. In the early '50s, from '53  
10 to '59, the Big Muddy River was poisoned twice.  
11 I don't know if Scott under the -- first name of  
12 Scott up there, Clean Water Act, I never knew.  
13 I'm not saying the mines done it, but it can  
14 happen. What had happened when I say "poisoned,"  
15 the first time it come down, it was red water.  
16 And what I'm saying is it turned the Big Muddy  
17 red. And when someone was mentioning earlier the  
18 aquatic conditions of the river, it killed  
19 everything, all of the fish, wild animals, birds.  
20 My uncle had livestock that part of his fencing  
21 was the Big Muddy River, so he had to move the  
22 livestock away. And then in the latter part of  
23 the '50s, probably '58, '59, here come the green  
24 water. When I said the red and green water, I

1 mean it turned Big Muddy red and green and killed  
2 everything.

3 Now, again, my license fell under the  
4 Safe Drinking Water Act, and this is under the  
5 Clean Water Act. This can happen. I don't know  
6 if records was kept from the EPA or what happened  
7 then. Again, I'm not saying the mines done it,  
8 but I say it can happen. And, you know,  
9 remembering this as a child, we had people in  
10 Blairsville that would actually -- four  
11 commercial fishermen back then for a staple -- we  
12 didn't have all the money in the world, so these  
13 commercial fishermen sold fish to make a living,  
14 and myself, probably about ten years old, I done  
15 what we call trotlines, and I got to sell some of  
16 my fish to the commercial fishermen and then  
17 bring it home to our family. Not after this. I  
18 remember one of the things that for some reason  
19 it stuck in my mind, Blairsville Bridge a hundred  
20 yards upstream, and when the water would get low,  
21 there would be an island, go out in the middle,  
22 and there was actually mussels on the river,  
23 okay? We would see that in there, the oceans and  
24 whatever. After that happened, no, there were no

1 more mussels. And the other thing about this is  
2 back at that time -- and I'm kind of curious  
3 about that, what happened -- is several of the  
4 communities along Big Muddy -- Royalton,  
5 Murphysboro, Hurst, whatever -- that was their  
6 water source. So to say that this can't -- and  
7 the monitoring. I think what I've seen in the  
8 past the years that I was a plumber or worked  
9 with the EPA or whatever, the response comes  
10 after a disaster. And that's why I'm here, and I  
11 thank you for my time, okay?

12 HEARING OFFICER: Ms. Amorelli,  
13 you'll be up next to the microphone. Following  
14 Lucia, George Ellis. You can prepare yourself to  
15 follow Ms. Amorelli.

16 LUCIA AMORELLI: Okay. My name is  
17 Lucia Amorelli.

18 HEARING OFFICER: Lucia, I apologize  
19 for my mispronunciation of your first name.

20 LUCIA AMORELLI: That's all right.  
21 A-M-O-R-E-L-L-I is the last name. Lucia,  
22 L-U-C-I-A. I'm going to bounce around a little  
23 bit, just a couple of different topics. First of  
24 all, I am from Jackson County. I'm a concerned

1 citizen. I live five miles from the Big Muddy  
2 River, less than half a mile from one of the  
3 tributaries. I'm an avid hiker, kayaker,  
4 swimmer. I swim in these waters, I kayak, I do  
5 all kinds of things. That's why I live here.  
6 That's why I'm here. I've already submitted 16  
7 pages of comments. I could have written a whole  
8 book on the issues and on the unanswered  
9 questions that I hope to get.

10           The first thing I want to address is  
11 just for everybody's information. According to  
12 information I found on the EPA violations,  
13 Williamson Energy between -- just between 2015  
14 and 2017, just those two years, 45 outfall  
15 effluent violations. Two years. I haven't got  
16 the information for the other years. Eleven  
17 violations were sulfate and ten for chloride in  
18 Pond Creek, which brings me to issues of water  
19 quality. You say that we are not going to have  
20 problems with water quality, but they're  
21 repeatedly violating the standards, okay? So how  
22 can the water be safe if they're repeatedly  
23 violated?

24           The second issue of water quality,

1 and I'm sure other people will address this  
2 further, is that the standards for Illinois are  
3 some of the worst standards around. Our  
4 neighboring states -- so 500 milligrams per liter  
5 of chloride for Illinois, but surrounding states  
6 -- Indiana, Missouri, Iowa -- they have 250  
7 milligrams of chloride. That's because the  
8 national quality water standard is like at  
9 250 milligrams a liter for chloride, which is  
10 what they're saying is the acceptable level for  
11 aquatic life. So our standard is two times  
12 higher. And there could be up to  
13 12,000 milligrams dumped into the river at a time  
14 to diffuse, 12,000 milligrams, just to say that.

15 In 2004, the Big Muddy River TDML  
16 report states that the Big Muddy River is  
17 compromised and impaired. And again in the 2019  
18 report that just came out, the same thing. The  
19 Big Muddy River is already polluted. It's  
20 already impaired in part because of mining  
21 operations. It states that, and I quote,  
22 Abandoned coal mines should be identified in  
23 addition to other mining activities which  
24 contribute to manganese and sulfate

1 concentrations, which is exactly what the  
2 violations are for this company. So my question  
3 to the IEPA is does this mean that the IEPA is  
4 going against its own implementation plans by  
5 considering granting a permit for a pipeline  
6 which will infuse the river with more elevated  
7 levels of chlorides, sulfates, manganese and  
8 other pollutants? Does this not go against the  
9 Clean Water Act? So IEPA already says the river  
10 is polluted, but then they're allowing more  
11 pollutants to go in. Why is Pond Creek Mine not  
12 included in the draft permit? It's a polluted  
13 river, polluted tributary. It's not included in  
14 the permit.

15 I want to address Scott Twait about  
16 mixing zones. You said that they're following  
17 the mixing zones. But in Section 302.102  
18 allowing mixing, mixing zones and ZIDs. Number  
19 4, Section 4: Mixing is not allowed in water  
20 containing mussel beds, endangered species  
21 habitats, fish spawning areas, areas of important  
22 aquatic life habitats or any other national  
23 features. My question is has this been  
24 determined by the EPA or IDNR if there are

1 endangered species, mussel beds, because there's  
2 no mention of endangered species anywhere except  
3 for they won't be affected, any species, because  
4 the water qualities will be met, which is not  
5 true, because they violate all the time.

6           Second thing for mixing zone. No  
7 mixing is allowed when the water quality standard  
8 for the constituent in question is already  
9 violated. The water is already violated, which  
10 brings me to what I want to close with and then I  
11 have -- they're all my pages. Which I've been  
12 sick for a couple months primarily probably  
13 focusing on this, which is very, very upsetting.  
14 And I think someone else is going to be talking  
15 about the endangered species. The point I want  
16 to bring up that someone might not bring up very  
17 quickly is that this section of river is the  
18 exact section of river that the NRI, the National  
19 Rivers Inventory, by the national parks has  
20 listed as an outstanding remarkable value just  
21 south of Rend Lake exactly where this pipeline  
22 all the way 52 miles from the Southern Illinois  
23 Airport which is where I live close by. It says  
24 that it being a wild and scenic candidate river,

1 it's supposed to have protections from government  
2 agencies. It says if an NRI river segment could  
3 be affected by the proposed action, an  
4 environmental assessment or an environmental  
5 impact statement needs to be done. My question  
6 is why was there no mention that this is an  
7 Outstandingly Remarkable Value designated river?  
8 Nowhere no one has ever mentioned it. Why? It's  
9 the exact same section. We have this section of  
10 a river, and the EPA doesn't seem to care.

11 I want to finish with that I believe  
12 the rivers -- and this is starting to become  
13 worldwide, this thought, this philosophy, and it  
14 should be. Has the EPA considered that the river  
15 itself should have its own rights? It's already  
16 dammed and polluted. It's dammed at Rend Lake to  
17 create water for us, to create water for that  
18 mine. It's dammed. It already has a pipeline  
19 that's at Sugar Camp 12 miles north of this  
20 proposed pipeline. It's already being screwed by  
21 the stuff that's going to come out of that pipe,  
22 and now you're proposing to put another pipeline  
23 in it. How much more should the Big Muddy River  
24 endure? How dare we as humans treat the river as

1 a toxic dump?

2 HEARING OFFICER: Mr. George Ellis,  
3 you're up next to the microphone. Ms. Amorelli,  
4 thank you for your comments tonight. We are out  
5 of time to be able to answer at this time  
6 directly to the questions posed, but they have  
7 been recorded by the court reporter for the  
8 transcript, and responses will be provided in the  
9 Agency's responsiveness summary. Mr. Ellis, are  
10 you here this evening? So you're going to pass?

11 GEORGE ELLIS: Yeah.

12 HEARING OFFICER: Okay. Tabitha  
13 Tripp. Tabitha, if you're here tonight, you're  
14 up next to the microphone. Following Tabitha --  
15 while she, perhaps, comes forward, following  
16 Tabitha will be Roy Sumner. Is Tabitha Tripp  
17 here this evening?

18 UNIDENTIFIED SPEAKER: She's coming.

19 HEARING OFFICER: Okay. I apologize  
20 for the short notice. Roy Sumner? Mr. Sumner,  
21 if you're available, you will be following  
22 Ms. Tripp at the microphone. Thank you.

23 TABITHA TRIPP: Tabitha Tripp,  
24 T-R-I-P-P, T-A-B-I-T-H-A. I am with Southern

1 Illinoisans Against Fracturing Our Environment.  
2 So I had a FOIA at the EPA office for what had  
3 been told to me a complaint had been made. And  
4 on first response, we were denied. And finally  
5 on the second response, my wording must have been  
6 correct. So in a field inspection report for  
7 compliance sampling dated 8/29/19, the EPA  
8 employee spoke to a nearby landowner who said the  
9 EPA should take samples on Saturdays or Sundays  
10 when the stream is rolling in dark gob water.  
11 The landowner was advised to then make a formal  
12 complaint to which he responded that the mine had  
13 given him such a hard time last time that he  
14 didn't want to make a complaint, a formal  
15 complaint. So my question to the EPA is what  
16 recourse do citizens have when they see a  
17 violation occurring and assume that risk of  
18 making a complaint, but yet the polluters are  
19 allowed to bully us, the citizens, in silence?  
20 If you at the EPA are not doing your jobs in  
21 enforcing the regulations that they are, and  
22 citizens who see the violations, they should be  
23 protected by you. You should uphold the law and  
24 stand with the citizens who are actually doing

1 due diligence and actually reporting those  
2 violations.

3           On 9/3, an IDNR inspector -- this is  
4 in the same report -- it cited in this report  
5 saying that he had received similar information  
6 from multiple resources about off-hour  
7 discharges. Are these off-hour discharges a  
8 reoccurring problem with this mine? The same  
9 reports state that despite the daily effluent of  
10 approximately 2.7 million gallons of underground  
11 water seeping into the mine, there have been no  
12 discharges monitoring reports since March of  
13 2019. And that report goes on to say that the  
14 water max balance of effluent water and discharge  
15 water does not appear consistent. Seems a little  
16 weird to me, too, that there's 2.7 million  
17 gallons going into a mine today but nothing was  
18 documented coming out. Doesn't add up, does it?

19           Sample results show amounts of  
20 sulfites and chlorides greatly exceed the limit  
21 of permit water quality standards in this little  
22 report that I got. And then the report goes on  
23 to say monitoring violations, the analysis not  
24 conducted of discharges, inadequate frequency of

1 sampling, invalid underrepresented samples as  
2 required by permit. So I guess what my biggest  
3 concern here is it seems like you've got EPA  
4 employees saying one thing, but when we look at  
5 the EPA ECHO site, it's saying another thing. I  
6 thought it was really awkward that it went on the  
7 site on Sunday and it said that there were actual  
8 violations in a big yellow box on the ECHO site,  
9 and then today I went there, and the box had  
10 turned blue in two days, that there were no  
11 violations. So I'm curious what happened in the  
12 last two days that it went from there were  
13 violations cited to no violations? I took screen  
14 shots, because I was a little baffled that that  
15 just happened today.

16 So I'm a little concerned about the  
17 transparency that the EPA is sharing. I'm  
18 concerned about the authenticity of the  
19 information that you're sharing with the public.  
20 I am concerned that there is not adequate  
21 monitoring happening. I'm concerned that there's  
22 not inspections that are actually documenting  
23 what's really going on, and I'm really, really  
24 concerned, because what happens is when citizens

1 make a complaint, then they're bullied into  
2 silence. That's not acceptable. It's not  
3 acceptable that we don't have any recourse as  
4 citizens when we actually stand up and report  
5 something. You see something, say something.  
6 Isn't that what the cops are always telling us  
7 now? Isn't that what they tell us in the  
8 airport? You see something, say something. We  
9 are, and we're getting bullied. I don't have  
10 anything further to say.

11 HEARING OFFICER: Mr. Sumner, we're  
12 going to take just a moment to respond to a few  
13 of the points made, and then we'll bring you up  
14 to the microphone.

15 MS. WARD: We appreciate all of your  
16 comments and your concerns. Yes, you're  
17 completely right, you know. Yes, you should be  
18 our eyes in the field, and we all appreciate if  
19 you see anything, please report it to us. This  
20 is helping us to keep the company and all our  
21 environment protected. So I would like to -- you  
22 provided many, many questions, and I would like  
23 to answer all of them. I will provide you  
24 responses in the summary. All of my comments --

1 all of my responses will be in the responsiveness  
2 summary, but one of our questions or one of your  
3 questions I remember was -- so they did not  
4 disappear on the DMRs. On the ECHO system that  
5 you see one day and another day you have not  
6 that's because we actually review the DMRs also,  
7 and we realized that some of them was recorded  
8 with the wrong units, was recorded with  
9 milligrams per liter versus it should be recorded  
10 milliliters per liter. That's why some of them  
11 actually was not a violation, so they were  
12 actually mistakes again -- by our mistake was  
13 wrongly reported on the DMRs on the ECHO system.

14 UNIDENTIFIED SPEAKER: (Inaudible)

15 HEARING OFFICER: Any comments from  
16 the audience will not be taken by the court  
17 reporter and should be reserved for the time at  
18 the microphone.

19 MS. DIERS: I think one other thing I  
20 want to note about you talked about the  
21 violations that you saw. There's an ECHO system  
22 which is USEPA, and then you have ICIS is what  
23 IEPA does. So sometimes there's mistakes made at  
24 ICIS on our system or it doesn't get fed in

1 enough time to EPA, so sometimes they cross over.  
2 So if you see those instances where you guys are  
3 seeing something on ECHO, that is not on our ICIS  
4 or vice versa. So now that you have raised those  
5 issues about compliance issues numbers that  
6 you've seen, we are going back through the DMRs  
7 and looking to see if they've recorded correctly,  
8 if the numbers are correct. Like Ms. Ward  
9 mentioned about seeing that some of the  
10 parameters weren't recorded correctly, we are  
11 definitely looking into that and appreciate you  
12 guys raising that information with us.

13 HEARING OFFICER: Mr. Sumner, please  
14 come to the microphone. I appreciate your  
15 patience. Following Roy's comments, Georgia de  
16 la Garza, you will be up following Mr. Summer.

17 ROY SUMNER: Hello. I'm Roy Sumner,  
18 S-U-M-N-E-R. First name is R-O-Y. I have lived  
19 on Carbon Lake Road in Murphysboro for the last  
20 25 years. I'm very close to the Big Muddy River.  
21 This last -- in 2019, I think from the end of  
22 January until May, the Big Muddy River lapped at  
23 the road. Late May into June, it was closed for  
24 two months. What I have observed in the 25 years

1 I've been out there is that it's more likely to  
2 see more frequent flooding that affects my road,  
3 and I notice it when I can't get out. But I'm  
4 also concerned about the poisons that they've  
5 mentioned in this water that's going to be  
6 discharged. And I haven't seen anything or heard  
7 anything so far that makes me comfortable  
8 accepting the plan before us. Thank you.

9 GEORGIA de la GARZA: Georgia de la  
10 Garza. Georgia is spelled like the state. de la  
11 Garza is D-E, space, L-A, space, capital  
12 G-A-R-Z-A. I'm president of Shawnee Hills and  
13 Hollers as a 501, and I'm also a organizer with  
14 Big Muddy River Rats over here in Zeigler at the  
15 point where they're going to be expelling these  
16 toxins in the water.

17 When I was first called by my home  
18 people over here to come and talk to them -- I've  
19 worked on the front lines of the coal industry  
20 now for fifteen years -- I put a presentation  
21 together, went over there, and the first question  
22 I asked them, because I grew up on the Big Muddy  
23 River. We had a house in town, but my dad wanted  
24 us to have that farm experience, so we were

1 raised on a farm on Big Muddy. We had a rope,  
2 jumped into the river, swam, learned how to make  
3 turtle soup, how to run troutlines, you know,  
4 catfish lines, how to canoe, make identifications  
5 of a poignant amount of bird life, scout mussels  
6 for soups. There was a lot of creatures and  
7 people and community that lived on that river and  
8 that still do live on that river and use that  
9 river. So the first question I asked them,  
10 because I used to throw a pole alongside many of  
11 them, was how many people in this room, which was  
12 a packed room, fish? Everyone -- little kids,  
13 moms, grandmas, everybody raised their hands. I  
14 said, How many of you lately have seen something  
15 wrong with the fish? The livers are enlarged.  
16 Their eyes are milky. The gills are messed up.  
17 How long has this been going on? Several years  
18 now. The mussels have declined substantially.  
19 How was I going to tell them that I'd just found  
20 the permit after looking through the 456 IDNR  
21 permit, this permit, looking at the data, looking  
22 at the science that Sugar Camp Mine had been  
23 dumping into Big Muddy since 2003. So we know  
24 that Big Muddy has a substantial amount of this

1 same water that's been being dumped in that river  
2 on a daily basis. There are documents that prove  
3 that. There are readings that prove that. So we  
4 know that if they're going to be dumping and  
5 allowing 3.5 million more gallons of water going  
6 on top of 2.6 million, we know what that river's  
7 going to look like. We know that whatever  
8 aquatic life that's there is going to go. We  
9 know that our way of life on the river is going  
10 to go.

11 And something that you need to  
12 consider, too, is, you know, the Big Muddy is not  
13 just a river. It's a major tributary, a major  
14 tributary of the Mississippi River. Right now,  
15 we have our local governments are looking at the  
16 issues that we're having on our rivers now. And  
17 this is detrimental to that whole Mississippi  
18 flow and resiliency that we're looking at as our  
19 communities are developing and preparing for  
20 these floods that we've been having and looking  
21 at climate change.

22 I work with Wash U students. I've  
23 been doing that for about seven years. And the  
24 last two years we've done a major study. I think

1 the EPA, you guys reached out to us last year to  
2 ask us to see that data which was pretty  
3 substantial. It's a lot more than just under a  
4 hundred violations. There are multiple clustered  
5 violations that we have in our areas. I think I  
6 was showing some of you some photographs of our  
7 water. We've done a lot of aerials here. We are  
8 surrounded right now with mercury ponds, aluminum  
9 ponds, heavy metal holding ponds, and I want you  
10 to take into consideration right now this is not  
11 just about a pipeline going into the river  
12 dumping 3.5 million gallons of toxic water. This  
13 is about whole communities that Pond Creek Mine  
14 is wiping out. You go over to that community,  
15 the houses are abandoned. People are being  
16 forced out of their homes. You can't do -- you  
17 can't farm the land, because it's caving in,  
18 because that's what longwall mining does.

19 If the coal miners -- 194 coal  
20 miners, let's compare that to the thousands of  
21 people in southern Illinois who are being  
22 diagnosed with cancer on a daily basis. One of  
23 our biggest industries here is health care, and  
24 it is because of these toxins that are being

1 emitted into the air making us sick. We have a  
2 cancer that is 1 in 28 million diagnosed in the  
3 USA. We have ten clustered cancers, a group over  
4 here of ten, mostly children, right over in that  
5 area surrounded by these toxins. Take a  
6 helicopter, I urge you, to go over. And say, you  
7 know, well, the violations we're taking in  
8 consideration. Here's our experience when we  
9 report violations. We've done this multiple  
10 times every year. Groups of students that come  
11 in from Wash U, Northwest, U of I, whatever, and  
12 communities that we -- community groups that we  
13 organized. You say if you see something that is  
14 a violation -- of course, we have the forms.  
15 Fill out your violation. We'll submit it to the  
16 EPA. We call the office over in Marion, and then  
17 we go and we sit and we wait to see how long it  
18 takes for someone from the EPA to come out. But  
19 guess what happens? The coal mine goes out  
20 there, and they clean it up really quick. Do  
21 they get a phone call? Do they get, you know,  
22 Hey, get over there and clean it out. We've got  
23 to come and check this out. And then a day or  
24 two after the coal miners leave, guess what? The

1 EPA comes in and, oh, interesting. We don't see  
2 anything. You mean, you don't see that 30-foot  
3 ditch pouring out of a 168-foot impoundment  
4 structure going into agriculture? No, it's not  
5 there. Well, we have video. So here's the other  
6 thing I want to -- two other points I want to  
7 make.

8 Now that we have scientists that work  
9 with us, we have -- I think I have ten of my  
10 students that I've worked with over hundreds over  
11 the last few years, ten of them are now  
12 environmental lawyers -- love it -- and they're  
13 all ready to work and jump in for us. We have  
14 found foundations that will support that effort.  
15 So right now, since we know the science, since we  
16 know, we're working right now connecting these  
17 toxins to our health risks. We've got the data  
18 we've worked on for two years. We're connecting  
19 it with new data that we're compiling and working  
20 very hard to get an epidemiology report. And we  
21 know, as you know, testing has become very clear  
22 right now.

23 HEARING OFFICER: Ms. de la Garza,  
24 I'm going to have to ask you to wrap up.

1                   GEORGIA de la GARZA: Okay. It's  
2 become very clear right now when we make those  
3 connections, when you sign those permits, you're  
4 an accomplice to our murder. You're killing us  
5 here. We're dying from this industry. We're  
6 dying. It's not about the endangered species  
7 anymore. It's about us. I want to say one  
8 thing --

9                   HEARING OFFICER: You've had eight  
10 minutes now, Ms. de la Garza.

11                   GEORGIA de la GARZA: Praise to you,  
12 my creator, with all of your creatures,  
13 especially sir brother sun, who is the day, and  
14 through whom you give us light. You remember --

15                   HEARING OFFICER: You have had eight  
16 minutes, Ms. De la Garza. I'm going to have to  
17 ask you to sit down.

18                   GEORGIA de la GARZA: -- where our  
19 creation is. Praise to you. Water is life.

20                   HEARING OFFICER: Amber Futch, you  
21 will be next. If you would come up to the  
22 microphone, and following Ms. Futch, Jan Thomas.

23                   GEORGIA de la GARZA: (Untranslated  
24 chant.)

1 HEARING OFFICER: I'm going to have  
2 to ask you to sit down for the benefit of the  
3 panel. We have other citizens that want the  
4 opportunity to speak. I do not want to have to  
5 ask you to be escorted from the room, so can you  
6 please sit down, ma'am? Thank you. Amber,  
7 you're going to be up next to the microphone.  
8 Jan Thomas, you're going to follow.

9 AMBER FUTCH: As you know, I'm Amber  
10 Futch, Futch spelled F-U-T-C-H, and I didn't grow  
11 up around here. I grew up in Tennessee near  
12 plastic factories and such, and they were allowed  
13 to dump into the Duck River down in Tennessee.  
14 And they said they were within the -- reasonable  
15 with the EPA and everything. And we currently in  
16 Hickman County, Tennessee, do not have a viable  
17 water source from the Duck River. We have to go  
18 out further from the Duck River to get water. My  
19 concern is the same thing happening here if this  
20 is approved, because people, after working with  
21 corporations before, I know they are good at  
22 covering up what they do. They lie about their  
23 numbers, and that's a huge concern to me. Is it  
24 being digitally monitored and sent to you guys

1 and you guys are seeing it as live, or is it them  
2 reporting it to you? Because people can lie very  
3 easily on just a submit -- oh, it has to be at  
4 this. Well, we'll say it's this, without even  
5 checking. And that's a huge concern of mine, not  
6 to mention the way the wildlife is going to be  
7 impacted. Every little thing that we do to our  
8 environment comes back to us. When they tested  
9 Agent Orange in Hickman County, Tennessee, the  
10 same place I came from, they didn't understand  
11 the whole cancer risk with it. Yeah, it got rid  
12 of the brush, but at what cost? It killed parts  
13 of our environment, and we're still recovering  
14 today from it. I may be from a different area,  
15 and I may not understand everything that goes  
16 into it, but I want to know more information on  
17 it, more than what you provided, in plain English  
18 as well. I see on there that there would be a  
19 minimal amount of mercury allowed into the river,  
20 and mercury, period, is not healthy for river  
21 life and/or people. That's about all I have to  
22 say on the subject.

23 HEARING OFFICER: Ms. Thomas, you'll  
24 be next up to the microphone. And following Jan

1 Thomas, Cameron Smith, if you could please be  
2 ready to provide your comments.

3 JAN THOMAS: I'm Jan Thomas. That's  
4 T-H-O-M-A-S. I live in Murphysboro, and I would  
5 like to talk about a couple of things, and one  
6 has already been -- yeah, one has already been  
7 touched on. But, basically, it is the financial  
8 unreliability of this company which somebody  
9 mentioned its stock is worth \$0.08 now on the New  
10 York Stock Exchange. About four years ago, it  
11 was worth \$17. So as you can see, it's  
12 plummeting, and, in fact, all of the coal mines  
13 in the Illinois Basin are projected by the  
14 Institute for Energy Economics and Financial  
15 Analysis, they're all going down the tubes and  
16 pretty fast, too, because most of this coal goes  
17 to electricity generation, which companies are  
18 now switching to natural gas, because natural gas  
19 is cheap. We're fracking now, which is another  
20 whole issue. But a lot of the coal-burning power  
21 plants that Foresight Energy supplies throughout  
22 the Midwest and the Southeast, a very large  
23 percentage of them, according to this article,  
24 have indicated that they will be either closing

1 or severely reducing their production as coal  
2 burners within the next decade certainly. So all  
3 of this is just financially unsupportable.  
4 Foresight just missed a \$24.4 million interest  
5 payment at the end of the third quarter of '19,  
6 and they have been given, so far, two, maybe  
7 we're even up to three now extensions from the  
8 SEC on paying this. But as a matter of fact,  
9 their total debt is like one and a quarter  
10 billion dollars, and yet we're talking about  
11 permitting them to build out an elaborate  
12 infrastructure which will keep tying this --  
13 tying us to dependence on fossil fuel for an  
14 indefinite period of time. And they're bragging  
15 that they have 50 years worth of coal there, but  
16 the planet can't really handle 50 years more of  
17 burning coal. In fact, the writing is on the  
18 wall. Coal mines are done. And I'm afraid that  
19 the coal miners here are going to find themselves  
20 in the same state as those ones in Kentucky.  
21 Everybody heard about them camping out on the  
22 railroad tracks to stop that last shipment of  
23 coal from going out because their company was  
24 bankrupt and they hadn't been paid. And, as a

1 matter of fact, the paychecks they had recently  
2 gotten had bounced. So this is not a good  
3 financial risk.

4 And, by the way, there's not a  
5 severance tax on coal in Illinois, and it's been  
6 mined here for almost -- maybe even for two  
7 centuries, and there's still no severance tax on  
8 it. Every other state in the country has that.

9 Oh, and one more thing. In that  
10 category of Robert Murray, the CEO of Murray  
11 Energy, parent company of Foresight which just  
12 filed for bankruptcy, he took away \$14 million  
13 when he left, and he also contributed \$1 million  
14 to climate-change-denying groups. So these guys  
15 are not -- you know, the coal miners, I'm very  
16 sorry that they're in a stressful position, but  
17 we all know they're not really the people who get  
18 the money. The money goes to the CEOs. So  
19 that's my first point.

20 And my second -- this is really a  
21 question. I have not seen anything at all  
22 anywhere that's a solution to this saline water  
23 seeping into the mine from an underground  
24 aquifer. Why isn't it -- why hasn't it been

1 suggested that this saline water could be placed  
2 in the depths of the earth with these injection  
3 wells? We all know that the fracking industry  
4 does this all the time. And if this were fracked  
5 water with all the toxic chemicals added in order  
6 to make fracking work and with all the  
7 radioactivity and more salty stuff brought out  
8 from the deep earth, I would definitely not be  
9 advocating this. But the coal mine is telling us  
10 this water is just salty, so why aren't we asking  
11 them to reinject it in deep injection wells back  
12 into the earth? So I think you should deny this  
13 permit. Thanks.

14 MR. TWAIT: You asked the question  
15 about why they're not injecting the water. They  
16 are currently doing that at their Sugar Camp  
17 Mine. They're running it through reverse osmosis  
18 and developing a high concentration brine and  
19 reinjecting it in deep water wells. And the deep  
20 water wells haven't been able to continue to  
21 handle both -- the amount of water that's pumped  
22 down there, and so it's just not economical for  
23 them.

24 HEARING OFFICER: Mr. Smith, you're

1 going to be up next at the microphone with your  
2 comments. Following Cameron Smith, Connie  
3 Schmidt.

4 CAMERON SMITH: I'm Cameron Smith,  
5 S-M-I-T-H. I live in Murphysboro. I'm a SAFE  
6 member. I'm also a property owner, and I'm here  
7 not to take anybody's job away, but I'm here to  
8 protect my property. My wife and I co-own the  
9 historic Douglass School in Murphysboro. The  
10 Frederick Douglass School was first built in  
11 1897, way before the building of the Rend Lake  
12 Dam. It was Murphysboro's segregated school, and  
13 it was built next to the Big Muddy, because they  
14 were the black kids. Anyway, back in the day  
15 when the Big Muddy was a navigable river, they  
16 hauled brick and coal down that river. Today,  
17 FEMA has classified our building as an AE Flood  
18 Zone. So it's not a matter of if it will flood;  
19 it's when will it flood.

20 On May 3, 2011, the Big Muddy reached  
21 its record high of forty and a half feet above  
22 flood stage, and that was at the gauging station  
23 on Route 127. At that time, the 127 bridge was  
24 closed and under water. The water was so high,

1 you could no longer see the guardrails on either  
2 side of the river. The Route 13 Bridge was also  
3 being threatened, but it remained opened and  
4 closely watched by IDOT. During this time, the  
5 flood water was so high and so strong, the water  
6 was vibrating the bridge, so it was decided by  
7 IDOT to rebuild the bridge and raise the level of  
8 the Route 13 Bridge. I wonder if IDOT had  
9 calculated for this increase of water flow from  
10 Pond Creek.

11 This spring we had standing water on  
12 our property for 148 days. I think the gentleman  
13 mentioned that. Most of the time, the flood  
14 water comes in and goes out as fast as it comes  
15 in. But this spring, the water stood there in  
16 our yard, and we could see hundreds, if not  
17 thousands, of minnows and tadpoles on the water's  
18 edge. So I have to wonder what these extra  
19 chlorides and sulfates will do to the population.

20 Mr. Cross mentioned that the amount  
21 of water at the time that will be released is  
22 only 5,000 gallons per minute, or that would be  
23 83 gallons per second, and that would be the  
24 equivalent of 16 five-gallon buckets coming out

1 of those pipes in one second. That sounds like a  
2 lot of water to me. But my understanding is that  
3 the mine won't be allowed to increase the water  
4 discharge when the Big Muddy is high, and I have  
5 to wonder what that one percent of increased  
6 salty water will do to our historic building.  
7 And will the IEPA be monitoring how much comes  
8 out of that pipe at that time? How much longer  
9 will we continue to pollute our waters and not  
10 care? I ask the IEPA to deny or delay the permit  
11 to allow for further study for what impact it  
12 will have for the people of southern Illinois.  
13 Thank you.

14 HEARING OFFICER: Sir, if you give a  
15 copy of your comments to the court reporter right  
16 down here in front of me, it will be entered into  
17 the record. Connie Schmidt will be up next to  
18 the microphone, and following Ms. Schmidt, Galen  
19 Thomas, if you could be ready to provide your  
20 comments.

21 CONNIE SCHMIDT: Hi. My name is  
22 Connie Schmidt, C-O-N-N-I-E. Schmidt is  
23 S-C-H-M-I-D-T. Good evening. I serve as the  
24 Chairperson for the Executive Committee of Sierra

1 Club, the Illinois chapter. We are a big group.  
2 I represent 100,000 members and supporters across  
3 Illinois, and we are concerned with a clean and  
4 healthy environment for all residents of  
5 Illinois. This includes clean water, which is  
6 what brings me here today.

7 The request by the Pond Creek Mine  
8 owners for discharge of dirty wastewater carrying  
9 high concentrates of chloride and sulfate into  
10 the Big Muddy River is ludicrous at best. These  
11 pollutants impact aquatic life, both plants and  
12 organisms, by altering their ability to reproduce  
13 and killing many of them off, thus drastically  
14 impacting the ecosystem and all of the other  
15 species that depend on those life forms, which  
16 would include humans.

17 Dumping waste into a natural resource  
18 like the Big Muddy is harmful to southern  
19 Illinois and beyond. The Big Muddy carries water  
20 to the Mississippi eventually and on to the Gulf  
21 of Mexico. This is already an area in serious  
22 peril. In addition to the Big Muddy, it's very  
23 important to humans. It provides tourism. There  
24 is commercial and recreational uses of the water

1 both for visitors and local residents, not to  
2 mention a safe haven to countless fish and other  
3 species. This area is prone to flooding, so  
4 polluting the actual waters of the river would  
5 also harm the riparian watershed as well.  
6 Endangering these factors is like shooting a  
7 healthy resource in the foot.

8           The plan to monitor this discharge is  
9 flawed at best. The discharge would enter the  
10 river at its bed where contaminants are more  
11 difficult to detect, and the entry point is  
12 strategically placed downstream of a monitoring  
13 system. This river does not have a rock bottom  
14 that naturally can act as a filtration. By its  
15 very name, we know that mud lines the river basin  
16 trapping pollution within its banks. Even if the  
17 pollutants could seep through the river, they  
18 would enter -- undoubtedly enter an aquifer that  
19 would connect to human drinking water at some  
20 point. It is just not a good idea to allow  
21 pollution into a water source.

22           In conclusion, we ask you please deny  
23 this request to dump dirty wastewater from the  
24 mine into any water system sustaining life for

1 recreation or creatures of our environment.

2 Thank you.

3 HEARING OFFICER: Mr. Thomas, you'll  
4 be up next. Following Mr. Thomas, David Freeman.  
5 Mr. Freeman, if you can be prepared to provide  
6 your comments.

7 GALEN THOMAS: Galen Thomas. Last  
8 name T-H-O-M-A-S. First name G-A-L-E-N. On  
9 behalf of the Southern Illinois Kayak and Canoe  
10 Club, I want to thank you for the opportunity to  
11 come and speak to the group. Although we have  
12 been assured that this discharge of 2.7 to 3.5  
13 million gallons per day of mine water into the  
14 Big Muddy will not pose a hazard to individuals  
15 using the river for kayaking and canoeing, it's  
16 frankly difficult for us to believe that water  
17 with that quantity going into the Big Muddy will  
18 not create turbulence in that particular area  
19 that could pose a hazard to people that are  
20 kayaking or canoeing, especially if they are  
21 relatively new to the issue of trying to maneuver  
22 around hazards in the water. The map or the  
23 picture that they had up on the board earlier  
24 there showing the depth allegedly of the Big

1 Muddy is really a misrepresentation, because we  
2 were out very recently, thanks to Iwona Ward and  
3 her cooperation with the mines, to see the actual  
4 location and, in reality, the water level is on  
5 an embankment of 30 feet down to the water. So I  
6 would really like to know if anybody knows what  
7 the depth of the Big Muddy in that area is  
8 currently, because it surely isn't 30 feet deep  
9 for the diffusers to be pouring the effluent into  
10 the water. Three and a half million gallons a  
11 day would seem to create some turbulence. I  
12 don't care if it is directed to be on the bottom  
13 of the water or the bottom of the screen and it  
14 supposedly is on the side that the natural flow  
15 of the river is going to push all of that  
16 polluted water up against the one bank and,  
17 magically, it's not going to spread out over the  
18 entire flow of the water so that fish will  
19 conveniently swim down on the upstream part of it  
20 and not be impacted by that. That's what we're  
21 supposed to believe.

22 In addition to the turbulence issue,  
23 there is concern for the high concentrations of  
24 sulfates, chlorides and other pollutants that

1 might pose a danger to people if they fell into  
2 the river in that particular curve where the  
3 water is, because some of the individuals that  
4 have expressed concern on our website take their  
5 children out for kayaking and canoeing on the Big  
6 Muddy, and they're very concerned that this might  
7 be an added hazard for them.

8           We have concerns that the  
9 antidegradation assessment is deficient because  
10 it seems to totally be focused on the water  
11 quality issues while not giving any assessment to  
12 the impact on the recreational use of the Big  
13 Muddy and the potential economic impact on  
14 reducing the Big Muddy's contribution to the  
15 region as a tourism destination.

16           The assessment also identifies the  
17 Big Muddy, as others suggested, as being impaired  
18 due to sulfates, chlorides and several other  
19 factors, but ignores the fact that the plan will  
20 inevitably result in more contamination of the  
21 river. The reality is the proposed dumping would  
22 result in some increase in the TMDL, the total  
23 maximum daily load. Just because the diffusers  
24 are located near the bottom of the river out of

1 sight doesn't change the fact that dumping is  
2 occurring. At best, it minimizes the portion of  
3 the river that's immediately impacted and a plume  
4 may be not evident to observers, but  
5 nevertheless, it is there. We would hope that  
6 the IEPA is not saying that pollution is  
7 acceptable as long as the water quality limits  
8 are not exceeded. Does it have to exceed the 500  
9 milligram level in order to cause alarm? I would  
10 hope not. It's still impairing the river more  
11 than what it's already impaired. Maybe rather  
12 than having the diffuser hidden under water and  
13 out of sight, it would be preferable to just have  
14 a pipeline that pumped directly into the Big  
15 Muddy so people could see when pollution is being  
16 dumped in rather than having it hidden near the  
17 bottom. Surely we're not saying if the Big Muddy  
18 is already impaired, what's a little more  
19 contamination?

20                   How will the monitoring equipment be  
21 installed to ensure that it's secured when the  
22 water levels vary so drastically in that region?  
23 We were out there, like I say, 30 feet at least  
24 down at the water level, but during flood stage,

1 it's much higher than that. It's almost up to  
2 where we were walking. There aren't any bridges  
3 in that area or any real sturdy structures in  
4 order to attach the monitoring equipment there  
5 like it is at Murphysboro. So there's something  
6 going to have to be constructed there to shield  
7 and protect it from floating debris, trees and  
8 all the other things that come down during the  
9 floods.

10           How will the diffuser vents be  
11 protected from people continuing to use the  
12 location as a dumpsite for large objects? I  
13 assume that there's going to be a fencing off of  
14 that area, but currently as we saw, there were  
15 deer carcasses that had been dumped over the  
16 side, and in the past it's a historic dumpsite  
17 for larger objects that people just wanted to get  
18 rid of. So if somebody dumps a refrigerator or  
19 something off there, it has that potential of  
20 damaging the vents.

21           As far as the monitoring goes, our  
22 recommendation would be that the monitoring be  
23 done the same way the USGS service does in  
24 Murphysboro. Have it continuous. Have it

1 accessible to anybody that wants to look it up on  
2 the website. Right now, you can go on USGS and  
3 see sulfates and chlorides and turbidity and all  
4 of these things. Anybody can research that  
5 whenever they want. They don't have it be just  
6 the sole property of the mine and quarterly  
7 reports being made to the Illinois EPA.

8           Lastly, if the pipeline can be  
9 approved in spite of all the numbers and  
10 statistics that other people have documented,  
11 then how many more pipelines can be approved to  
12 dump into the Big Muddy as long as it's not a  
13 massive excessive amount that occurs at one  
14 particular time? I know the Sugar Camp Mine has  
15 already been approved for a pipeline. It has not  
16 been built yet, so they're not dumping yet. If  
17 this is approved also, that's two. How many more  
18 can be approved because it will just be an  
19 incremental degradation of the Big Muddy? Thank  
20 you.

21           HEARING OFFICER: I would like to let  
22 the record reflect that Mr. Thomas' comments  
23 specifically referenced a graphic provided by  
24 Williamson Energy. That graphic has been

1 provided and a scale available to be entered into  
2 the record that will be entered into the record  
3 as Exhibit 241.

4 Mr. Freeman, you will be up next to  
5 the microphone. And following David Freeman, we  
6 have Jean Sellar.

7 DAVID FREEMAN: Good evening. My  
8 name is Dave Freeman, F-R-E-E-M-A-N. I'm  
9 actually here because I love the Big Muddy River.  
10 I was born and raised within probably an eighth  
11 of a mile. I own property right now about  
12 three-eighths of I'll call it "oceanfront  
13 property" on Big Muddy, and I care very much  
14 about the Big Muddy. I've fished it and hunted  
15 it my whole life. I actually do some commercial  
16 fishing on the river, mainly a hobby, but I do  
17 put up my winter's meat -- flathead catfish --  
18 but through the years, I've seen many fish kills.  
19 Especially, say, approximately thirty,  
20 thirty-five years ago, I saw -- well, the big  
21 ditch that comes out of Herrin, when we did have  
22 several businesses in the area. After a big  
23 rain, we'd have a lot of poisons washed into the  
24 river, and I've seen absolutely thousands of fish

1 die. Actually, now if I do take home a big  
2 channel, I cut it open, and the livers will have  
3 white spots on it, so there's poison in the river  
4 that's been put in there for years.

5 One thing that does scare me, right  
6 south of Zeigler, we have a sewage lagoon, and I  
7 know it's EPA regulated, evidently, but the  
8 runoff, actually, is very detrimental to the  
9 river. It stinks. A lot of times it's blue.  
10 It's full of bubbles and soap, and I don't  
11 understand why it could possibly be that way this  
12 day and time. I've seen many generations,  
13 several different generations from when I was a  
14 little boy I remember from grade school. I  
15 actually have seen the old foreigners -- we had a  
16 great influx of foreigners to come into Zeigler  
17 to the No. 1, Zeigler No. 1 mine, and I can  
18 remember the little men sitting down on the river  
19 on little old docks with a tripod and a net on it  
20 like a fulcrum, and they would catch their fish  
21 that way. They mowed -- with the old sickle  
22 mowers, they mowed through the woods on the banks  
23 of the Big Muddy River to the hickory nut trees,  
24 and they would mow underneath the hickory nut

1 trees, because that was their lives, their  
2 mainstay of having hickory nuts, and they also  
3 sold them.

4 I've seen paths. There used to be a  
5 path for a mile along the river well worn.  
6 Everyone used that. And the point being if we  
7 would have just a small computer glitch and the  
8 trucks shut down, we're all going to be depending  
9 on the Big Muddy River again. So we do  
10 definitely need to take care of it, and that's  
11 something we all need to think about. It's just  
12 we can't have any carcinogens going in there,  
13 because, you know, all of the fish live off the  
14 phytoplankton, zooplankton, etc., etc. I mean,  
15 if we damaged that little small part of our  
16 ecosystem, we will have the trickle-down or the  
17 trickle-up effect.

18 Before I start throwing spears at the  
19 coal company, I would like to say that my  
20 parents, my grandparents and, actually, my  
21 son-in-law are coal miners. I have had a  
22 love/hate relationship with the coal mines.  
23 Actually, Zeigler Coal Company owned -- don't  
24 quote me exactly on this -- approximately at one

1 time 23,000 acres around Zeigler and then  
2 probably 30 plus years ago, from a desk in  
3 Chicago they cleared 17,000 acres. And when they  
4 cleared this, they didn't do it in a very proper  
5 manner. They cleared out all the -- a lot of the  
6 trees in the waterways, and now we do have much  
7 more erosion involved than what we need. I do  
8 know that the -- eventually, they sold out to the  
9 area farmers, and now they put fescue, etc.,  
10 etc., in those drains, so we do have less erosion  
11 into the Big Muddy River.

12 I've always lived -- my property --  
13 also I have property where I do live right on the  
14 edge of Zeigler, and it's been right next to the  
15 No. 2, Zeigler No. 2 mines, and for 50 years,  
16 we've put up with gob piles there. Finally, a  
17 few years ago, they reclaimed the mine. They  
18 supposedly came in and put two to three foot of  
19 dirt on that property. But when I was a kid, we  
20 used to skate on this place called -- we called  
21 the rust pond, because it was a rusty color from  
22 all the bad chemicals that came out of that mine.  
23 There were several sections of Prairie Creek that  
24 ran for two miles that ran into Big Muddy River

1 that almost all of it, the big sections, will not  
2 even grow trees. They all died and fell over.  
3 That's from Zeigler Coal Company. I know a place  
4 down by No. 3 mine, Zeigler Coal Company No. 3  
5 where there's several feet of shale that came in  
6 a big ditch for years. And at the lowest point  
7 of the river now, you can't hardly -- you have to  
8 get out of your boat and drag it because there's  
9 several feet of rock and shale from the coal  
10 company. Those gob piles that adjoins my  
11 property have smelled and have been such a danger  
12 for 50 years, and they finally took care of it.  
13 But they didn't cover it all up, and now there's  
14 also drains in different areas that's very  
15 detrimental to the Big Muddy River.

16 HEARING OFFICER: Mr. Freeman, I'm  
17 going to have to ask you to wrap up your  
18 comments.

19 DAVID FREEMAN: Okay. I will say one  
20 thing. The chemical companies will lie. I do  
21 between thirty-four and forty-five funerals a  
22 year. I'm on the Honor Guard. Our Vietnam vets  
23 are dying at a faster rate per capita than our  
24 Korean vets because of Agent Orange. The

1 chemical company lied to our farmers about the  
2 chemicals, and now they're causing lots -- and  
3 they told them they'd dissipate in two to  
4 three days. Now they're poisonous, finding out  
5 they're giving us, the human species, cancer.  
6 Thank you, very much.

7 HEARING OFFICER: Jean Sellar, you'll  
8 be up to the microphone next. And then following  
9 Jean, Beth Ann Roberts-Jacquot, you can begin.

10 BETH ROBERTS-JACQUOT: Jacquot.

11 HEARING OFFICER: Jacquot, thank you.  
12 Appreciate it. Jean, you can begin.

13 JEAN SELLAR: Hi. My name is Jean  
14 Sellar, J-E-A-N, S-E-L-L-A-R. I'm speaking as a  
15 concerned citizen and someone who spends a lot of  
16 time in the bottomlands of the Big Muddy River.  
17 My credentials are that I am a retired biologist  
18 retired from the U.S. Army Corps of Engineers. I  
19 have spent thousands of hours monitoring  
20 bottomlands, (inaudible), wetlands, rivers,  
21 lakes and streams.

22 UNIDENTIFIED SPEAKER: Talk louder.

23 JEAN SELLAR: Sorry. I'm trying not  
24 to shout.

1 HEARING OFFICER: Everybody would  
2 like to hear what you have to say.

3 JEAN SELLAR: Okay. I am a retired  
4 biologist from the U.S. Army Corps of Engineers.  
5 I have spent thousands of hours monitoring  
6 streams, rivers, wetlands, bottomlands for  
7 changes in ecosystem quality as a result of  
8 flooding and water quality issues. I want to  
9 make several comments, but first, I want to  
10 remind the Agency, as I'm sure you know, that you  
11 are required to consult on threatened and  
12 endangered species of Illinois. I want to report  
13 a bunch of numbers -- very dull -- but I hope  
14 important to a technical agency like you. There  
15 are nineteen -- or excuse me -- fifteen species  
16 that are threatened and endangered in Franklin  
17 County. There are twenty-one in Williamson  
18 County. In Jackson County, there are  
19 fifty-seven. In Union County, there are sixty.  
20 These are all species that are affected by the --  
21 or most of them are species that are affected by  
22 the Big Muddy River. Of those species, there are  
23 thirty threatened and endangered plant species  
24 that live in bottomlands. I have a great deal of

1 personal experience that shows that rare species  
2 such as that are directly negatively impacted by  
3 flood water, especially polluted flood water.  
4 They are dying out. One of those species is only  
5 found in the bottomlands of Big Muddy River in  
6 Illinois, and it's rare outside of Illinois.

7 Two comments. One is that the mean  
8 flow is not very meaningful to other organisms.  
9 They care, as a number of other people mentioned,  
10 about the rare toxic events. It only takes a  
11 short time of exposure ranging from a few minutes  
12 to a few hours, possibly days, to poison and kill  
13 them. I think the agency needs to be looking at  
14 different numbers than mean base flow or mean  
15 peak flow even on a monthly level.

16 The other thing is that there are no  
17 -- and I repeat -- no thorough studies of the Big  
18 Muddy organisms. I've checked endlessly through  
19 professional documentation. It's a difficult  
20 river to study if you don't have a fair amount of  
21 money. I want to strongly encourage the Agency,  
22 the Illinois EPA, to require a thorough  
23 documentation of the species that actually live  
24 in the Big Muddy River. You're going to find a

1 number that are not listed already by the State.  
2 For example, the pallid sturgeon has been caught  
3 in the Mississippi River right outside the mouth  
4 of the Big Muddy. The Big Muddy provides a  
5 habitat that's perfect for the pallid sturgeon.  
6 The alligator snapping turtle, which is gradually  
7 increasing its population in Illinois partly but  
8 not totally due to reintroduction programs, is  
9 documented in some other streams in the vicinity.  
10 The Big Muddy habitat is fine for alligator  
11 snapping turtles. So I want to strongly  
12 encourage you to do that study with a responsible  
13 or a group of responsible, objective scientists.  
14 Thank you.

15 HEARING OFFICER: If you can give us  
16 just one moment.

17 MR. TWAIT: Just two I'll respond to  
18 you on the questions on T and E species. We do  
19 have to consult with Illinois Department of  
20 Natural Resources, their threatened and  
21 endangered species consultation, and they did  
22 look at this discharge and indicated that there  
23 were no T and E species that would be affected by  
24 this discharge.

1 HEARING OFFICER: Excuse me. We're  
2 going to have to wait for speakers with  
3 microphones; otherwise, it's not clear and able  
4 for the court reporter to create a transcript.

5 MR. TWAIT: However, they did  
6 indicate that there was numerous species that  
7 were in various need of conservation and provided  
8 some comments on that. And one of the comments  
9 was to ensure that the mine or the effluent  
10 monitoring requirements, according to the permit,  
11 were enforced.

12 HEARING OFFICER: Beth, you will be  
13 up next to the microphone to provide your  
14 comments. And then following Beth, just so that  
15 someone can be ready, is Jerry and Carolyn  
16 Worther? Worthen? You can be prepared to  
17 provide your comments following Beth.

18 BETH ANN ROBERTS-JACQUOT: All right.  
19 It's Beth Ann and then Roberts -- that's Robert  
20 with an S -- a hyphen, and then J-A-C-Q-U-O-T,  
21 pronounced Jacquot. All right. So first of all,  
22 I'm going to address the coal mine gentleman and  
23 tell him you're not in my county. You're not  
24 adding to our revenue. You're not adding to the

1 local revenue. I live in Murphysboro. You're  
2 going to pipe this garbage 70 miles to my back  
3 yard. I live on the Big Muddy. I have two acres  
4 on one side of the river and thirty-two on the  
5 other. We hunt. We fish. My grandkids play in  
6 the yard that gets flooded by this water spring,  
7 summer and fall here lately. Am I to the point  
8 where I can't let my grandkids play in the yard  
9 because I have to fear what's left over from him  
10 trying to make a profit? It's disturbing.

11 I don't know a lot, I'm not a  
12 biologist, but I am going to tell you a few  
13 things that this grandma managed to look up. All  
14 right. Runoff can change the pH to the same  
15 level as vinegar, runoff from coal mining. Coal  
16 releases heavy metals. Research shows that at  
17 nearly every level analyzed, there was a coal  
18 leachate that exceeded international water  
19 quality guidelines. For example, some metal  
20 samples from low sulfur western U.S. coal  
21 exceeded the Canadian water quality guidelines  
22 for protecting aquatic life. Combined efforts of  
23 chemical and physical stresses on stream  
24 ecosystems is a decline in ecosystem health loss

1 of biodiversity, which is fish,  
2 macroinvertebrates -- if I said that right -- and  
3 algae. Acid mining drainage has eliminated fish  
4 completely from some rivers and streams, and  
5 others support only a few acid-tolerant species.  
6 Coal mining practices not only destroy the  
7 streams and the rivers' beneficial uses, but the  
8 streams and rivers themselves by drastically  
9 altering their physical characteristics.

10 If an environmental disaster occurs,  
11 taxpayers will pay the costs of cleanup caused by  
12 the coal industry. Costs of pollution habitat  
13 destruction negate any benefit that may come from  
14 this. The economic impact is no longer positive,  
15 and the health effects only make it even more  
16 costly. Recent studies in Illinois found that  
17 coal mining in the state resulted in a net cost  
18 to the State of almost twenty million without  
19 even including any external factors.  
20 Twenty million dollars they're costing us.  
21 They're not bringing in money; they're costing us  
22 money.

23 Other industries will be affected  
24 because they depend on the ecosystems that coal

1 mining destroys. Tourism is one of those  
2 industries. I'm sure several of us have been on  
3 the wine trail. Don't let them kill that.  
4 Negative effects on the ecosystem lead to worse  
5 health in the population which has an impact on  
6 health care costs compounding the economic  
7 impact. One quick question and I'm going to give  
8 it to the lawyer. What does EPA stand for?

9 MS. DIERS: Environmental Protection  
10 Agency.

11 BETH ANN ROBERTS-JACQUOT: Can you  
12 say it a little louder?

13 MS. DIERS: Environmental protection  
14 agency.

15 BETH ANN ROBERTS-JACQUOT: Did  
16 everybody get that? Environmental Protection  
17 Agency. Thank you.

18 HEARING OFFICER: Jerry will be up to  
19 the microphone next. And then following Jerry,  
20 Amanda Pankau, P-A-N-K-A-U. You will follow Mr.  
21 -- is it Worther or Worthen?

22 JERRY WORTHEN: Worthen.

23 HEARING OFFICER: Worthen?

24 JERRY WORTHEN: Jerry Worthen,

1 W-O-R-T-H-E-N. And my wife, Carolyn, is with me,  
2 and we own a farm on the Big Muddy, and it's been  
3 in our family since our forefathers or my  
4 forefathers, I should say, since 1836. And it's  
5 a Centennial Farm. My dad never thought to take  
6 care of that, and we had it listed after my  
7 mother and my father died. But right now, we  
8 raise -- my son took over the farming, and he  
9 raises grain in a field that overflows just about  
10 every year anymore. And it -- because of  
11 flooding last year, he had an awful time getting  
12 the crops in and getting the crops out. But we  
13 feel that dumping their wastewater in the Muddy  
14 River is going to deteriorate the ground that we  
15 have. It's valuable ground as long as you can  
16 keep the water off of it.

17 Now, I've got a year's network that I  
18 read the river gauge at Sand Ridge every day.  
19 And from 1993, the river was six inches over the  
20 Muddy River -- the new Muddy River gauge or  
21 bridge. It was six inches over the deck on it.  
22 And now this one here, you would be surprised as  
23 to how far it was over it several times this  
24 year. It got up at one time to 360.62 feet.

1 That is sea level. And it went on that way for  
2 about four months. We drove out of our house to  
3 get out and go after our groceries with a  
4 tractor, because this water just kept coming up  
5 and coming up. And it was up for right at four  
6 months. And we couldn't stand any more water to  
7 be poured in the Muddy River. Right now this  
8 morning, I had read the gauge, and it was 340.09  
9 is what it was this morning, and it's not going  
10 down very fast. Because if the Mississippi backs  
11 it up, it will back up on the Muddy, and it will  
12 run as fast backwards as it does forward.

13 I hope that you people see the light  
14 and you do not okay this permit to go through for  
15 this mine. I understand they need coal, but most  
16 of the time, the coal that we're seeing come out,  
17 and I've got friends that haul coal, and it's  
18 going overseas. It's going overseas to China and  
19 Japan. Now, if we want to check on that, you can  
20 check, because it's in writing.

21 And that's the last I've got. I  
22 appreciate your time, and I hope you reconsider  
23 and take this into -- well, take it into  
24 consideration that our farm has been in the

1 family for that long, and I don't want to lose it  
2 because of somebody that just wants to put water  
3 in the Muddy River. We used to didn't have any  
4 problems with the Muddy River, but they put 50  
5 mile of wing dams in the Mississippi River in  
6 1993, and that hurt us bad. And I thank you.

7 HEARING OFFICER: Thank you,  
8 Mr. Worthen. If you'd like to provide your  
9 comments to the court reporter, we'll be able to  
10 have a copy of the data set that you referenced  
11 in your comments today and that will certainly be  
12 reviewed and considered in our responsiveness  
13 summary.

14 Following Amanda, who is at the  
15 microphone now, we'll have Steve Maynor. Amanda,  
16 you can begin when you're ready.

17 AMANDA PANKAU: Okay, great. My name  
18 is Amanda Pankau, and I work with Prairie Rivers  
19 Network.

20 HEARING OFFICER: Can you spell your  
21 last name, please?

22 AMANDA PANKAU: P-A-N-K-A-U. Prairie  
23 Rivers Network is a state-wide nonprofit with a  
24 mission to protect water, heal land, and inspire

1 change. We have members in the Big Muddy  
2 watershed. And while I'm here tonight, if  
3 there's any representative of Prairie Rivers  
4 Network, I did want to note that I lived in  
5 southern Illinois for over 13 years. I still own  
6 property just over the hill from LaRue-Pine Hills  
7 that some folks have mentioned tonight. I wanted  
8 to thank you guys for holding this hearing and  
9 giving the public a chance to learn more and  
10 share their concerns.

11 Prairie Rivers has concerns about the  
12 additional harm that the facility may cause if  
13 the permit is issued as written tonight. I would  
14 like to share some of those concerns, but mostly  
15 I'm going to be asking clarifying questions that  
16 will help us prepare our post-hearing comments  
17 letter.

18 So to begin this, the antidegradation  
19 assessment prepared by the mine notes that the  
20 90th percentile background level of chloride is  
21 30 milligrams per liter, and the report states  
22 this number comes from the Illinois EPA. So we  
23 FOIA'd the last five years of water quality data  
24 from the Big Muddy at Plumfield just north of the

1 proposed discharge point. There the Illinois EPA  
2 monitors for chloride and other water quality  
3 parameters every six weeks as part of their  
4 ambient water quality network. We analyzed that  
5 data and found that the 90th percentile chloride  
6 concentration is actually 108 milligrams per  
7 liter, so I wanted to ask tonight how did the  
8 mine come to use 30 milligrams per liter as the  
9 90th percentile?

10 MR. TWAIT: I don't know specifically  
11 what time period they used, but that could  
12 definitely make a difference. Their anti-deg was  
13 done, I believe, three years ago, so they might  
14 have looked at a larger data set.

15 AMANDA PANKAU: Okay. Would it not  
16 make sense to use the last five years of data as  
17 a better benchmark?

18 MR. TWAIT: Yes, it would.

19 AMANDA PANKAU: So my next question  
20 -- sorry I'm going to jump back and forth. I  
21 have three prioritized items given the limited  
22 amount of time. The anti-deg proposes to monitor  
23 downstream chloride concentrations in two ways:  
24 The calculated, you have a mixing equation as

1 well as physically with the downstream  
2 conductivity probe. So our question is, is the  
3 permit being violated if either of these values  
4 are found to be above 500 milligrams per liter of  
5 chloride?

6 MR. TWAIT: Yes, I believe here it  
7 would be a violation either way.

8 AMANDA PANKAU: Okay. And the way we  
9 read the permit, it does not seem to require the  
10 mine to report enough information to evaluate  
11 that mixing equation. So, for example, it  
12 doesn't appear that the direct measurement of  
13 effluent is required. So is the mine required to  
14 monitor and report the effluent discharge rates  
15 and chloride concentrations coming out of the  
16 pipe?

17 MR. TWAIT: On the DMRs they are  
18 reporting their maximum concentration, and I  
19 believe they have to keep records at the mine  
20 site for flows and concentration of the effluent.

21 AMANDA PANKAU: Okay. I think we  
22 would suggest that if they're required to meet  
23 that mixing zone, that they're recording the  
24 effluent concentration, the effluent discharge,

1 as well as the upstream concentration and  
2 upstream discharge.

3 So the permit proposes continuous  
4 monitoring of chloride via the conductivity  
5 upstream and downstream of the discharge given  
6 that multiple constituents impact conductivity.  
7 And I don't know that I want you to answer this  
8 question now, but we are curious of how will the  
9 mine develop that accurate calibration? Does the  
10 Agency have to approve that calibration curve  
11 derived by the mine? And are the calibrated  
12 values also reported on the DMR? So do we have  
13 all of that information that they're using to do  
14 that calibration?

15 MR. TWAIT: We have written into the  
16 NPDES permit that they've got to get the citing  
17 of those conductivity meters approved by us.  
18 That's something that we can consider as to  
19 approving their calibration curves.

20 AMANDA PANKAU: All right. Thank  
21 you. So as I demonstrated with these questions,  
22 the permit is written in a way that compliance  
23 will ultimately rely on the feasibility of the  
24 monitoring scheme per discharge Outfall 11. So

1 the availability and accuracy of upstream and  
2 downstream chloride concentrations as well as the  
3 effluent concentrations will be critical for any  
4 measure for public accountability. So an  
5 independent third party research institution  
6 would be much better suited to monitor this  
7 rather than the mine. The USGS routinely  
8 monitors these type of stations and have the best  
9 system for making that information available to  
10 the public. The mine should fund USGS, install  
11 gauging stations and make public the realtime  
12 data that the mines use to determine their  
13 allowable discharge.

14 We have further concerns about the  
15 impact on aquatic life. We're curious to know if  
16 there has been any in-stream monitoring for fish  
17 data, aquatic invertebrates, as well as mussels  
18 in Pond Creek or the Big Muddy River. The  
19 diffuser design document states that its effluent  
20 is expected to be negatively buoyant or try to  
21 sink to the bottom of the stream until adequate  
22 mixing has occurred. Given that the highest  
23 concentrations will be located on the river bed,  
24 we think that the river should be assessed for

1 mussels. Has a mussel survey been done on the  
2 Big Muddy River?

3 MR. TWAIT: When I looked through my  
4 documents, I didn't see that, so I don't think it  
5 has.

6 AMBER PANKAU: So again, we think  
7 that a fish survey, a mussel survey and a survey  
8 of invertebrates pre-construction as well as  
9 long-term monitoring post-construction would be  
10 or should be required.

11 HEARING OFFICER: Amanda, I'm going  
12 to have to ask you to wrap up.

13 AMANDA PANKAU: Okay. I think I  
14 might have more, but I guess a couple of last  
15 questions. I know I'm not supposed to speak to  
16 the audience, but I'm speaking to you guys as  
17 well. The Sugar Camp Mine has had a permit  
18 approved to build a similar pipeline to the Big  
19 Muddy River. Do you know if that pipeline will  
20 be constructed?

21 MR. TWAIT: They have a permit to  
22 discharge from the Agency. The permit to build  
23 the pipeline is handled by IDNR.

24 AMANDA PANKAU: So we've ran some

1 numbers that show if you have chloride coming out  
2 of that upstream proposed Sugar Camp discharge as  
3 well as this one, and we just want to make sure  
4 you guys are taking into account that potential,  
5 because you've already granted the permit.

6 MR. TWAIT: Yes. We've taken that  
7 into account. One of the things that we did was  
8 required the conductivity monitoring upstream, so  
9 their calculations had to take into account  
10 what's upstream already in the stream.

11 AMANDA PANKAU: Thank you.

12 HEARING OFFICER: Steve Maynor.  
13 Excuse me? No. Only those at the microphone can  
14 speak. It looks like right now we are going to  
15 be running out of time, and as it is, not  
16 everybody here that signed up to speak is going  
17 to have an opportunity. So I again ask that when  
18 I ask you to wrap up or keep your comments  
19 limited that we do so out of respect for your  
20 fellow residents who would like an opportunity to  
21 speak. Is Steve Maynor here to come to the  
22 microphone? If not, Barbara McKasson. Barbara,  
23 you're up next. And then following Barbara, Jane  
24 Cogie.

1 JANE COGIE: I think my point's been  
2 made, so I'll just submit them.

3 HEARING OFFICER: Okay. That would  
4 be great. Jane will submit her comments, her  
5 written comments to the Agency, and we will  
6 address those through the responsiveness summary.  
7 So following Barbara, Sienna. Your last name is  
8 not legible, so --

9 UNIDENTIFIED SPEAKER: Sorry. Yeah,  
10 I'll submit mine, too.

11 HEARING OFFICER: Okay. Sienna is  
12 going to submit her comments through the written  
13 comment period. Pat Wagner? Pat will submit her  
14 comments through the comment period. Thank you.  
15 Chuck Paprocki?

16 CHUCK PAPROCKI: Yes.

17 HEARING OFFICER: Are you here?  
18 Okay. You will follow Barbara when she's  
19 completed her comments.

20 BARBARA McKASSON: My name is Barbara  
21 McKasson, last name M-C, capital K-A-S-S, as in  
22 Sam, O-N as in Nancy. I am a native of the Big  
23 Muddy River and often visit natural areas that  
24 are impacted by the Big Muddy River when flooding

1 such as LaRue-Pine Hills National Natural  
2 Landmark and Little Grand Canyon. LaRue-Pine  
3 Hills is currently one of the most biologically  
4 diverse areas in the United States in competition  
5 with Smokey Mountain National Park. Little Grand  
6 Canyon is designated as a high-quality natural  
7 area with many Illinois threatened and endangered  
8 species. Both of these places are highly  
9 impacted whenever the Big Muddy River floods, and  
10 both of these areas have very important  
11 recreation areas. I think you should be taking  
12 this into consideration.

13 From reading all of the literature on  
14 this, it seems that the measurements for the  
15 effluent is very complicated. I'm wondering how  
16 will IEPA verify all of these calibrations, how  
17 they will work so that the effluent will stay  
18 within the limits of the regulations? And I'm  
19 wondering if that is why IEPA is allowing huge  
20 fluctuations of the sulfates and chlorides,  
21 sometimes far above the standards set by the  
22 regulations. Even with a diffuser, what gives  
23 Illinois EPA any confidence that there will not  
24 be acutely high concentrations that can gravely

1    harm the fish, macroinvertebrates, mussels,  
2    plants and other wildlife that depend on the Big  
3    Muddy River, especially near the O11 Outflow  
4    location?

5                    Science has shown that organisms have  
6    trouble regulating osmosis through their tissues  
7    with such high concentrations of chlorides. How  
8    current are surveys of fish and  
9    macroinvertebrates in Pond Creek and the Big  
10   Muddy River? Shouldn't IEPA conduct these  
11   surveys before granting these permits so that you  
12   will be better prepared to know how much the  
13   aquatic life is being affected by this effluent?

14                   The fact that the bond required for  
15   the discharge pipe into the Big Muddy River does  
16   not cover harm caused by the effluent is very  
17   concerning, so it looks like the people and the  
18   environment will pay the costs. Why isn't  
19   Williamson Energy not required to put up a bond  
20   for repairing damage that may be caused by their  
21   operations, that is damage to the Big Muddy River  
22   wildlife and the people who depend on the Big  
23   Muddy for recreation? What if there's a big fish  
24   kill? Can IEPA hold Williamson Energy

1 responsible and charge them reparations for the  
2 damage? Can Williamson Energy be held  
3 responsible for restoring fish populations? And  
4 as has been pointed out, the parent company,  
5 Murray, is in bankruptcy, and it looks like  
6 Foresight Energy is also close to bankruptcy. So  
7 we have to ask what is the financial status of  
8 Williamson Energy? Would they be able to  
9 ameliorate or mitigate any harmful events? Does  
10 the corporation and the Illinois EPA expect  
11 public funds and the environment to absorb the  
12 costs?

13 I'm concerned that the proposed  
14 location of the downstream monitoring probe is  
15 too far downstream to measure and evaluate the  
16 level of pollutants at the outfall. The permit  
17 specifies that, quote, This downstream monitoring  
18 shall be performed a sufficient distance  
19 downstream of the associated outfall to ensure  
20 that complete mixing has occurred, unquote. If  
21 the mine places the probe further downstream,  
22 they gain additional mixing. More dilution to  
23 the pollution. Why are they not required to  
24 monitor as close as possible to the edge of the

1 designated mixing zone, which is the point of  
2 compliance?

3 I am also concerned about the Outfall  
4 009 which goes into Pond Creek, which has been  
5 designated in the past as impaired by chloride in  
6 the TMDL evaluations. Pond Creek is listed in  
7 the public notice and appears to be impaired  
8 already by chlorides. Why are you proposing to  
9 grant the mine a mixing zone for chlorides at the  
10 Pond Creek Outfall if the Big Muddy River is  
11 already impaired? Why was the level of chlorides  
12 in Pond Creek found by IEPA to no longer be of  
13 concern by the recent TMDL assessment when it  
14 already has been measured at or near the maximum  
15 of 500 milligrams per liter? According to the  
16 Pond Creek Watershed Inventory 2019 created by  
17 the Greater Egypt Regional Planning and  
18 Development Commission, page 74, quote, Pond  
19 Creek has been listed for chloride and  
20 sedimentation/siltation impairments since 2010  
21 and dissolved oxygen since 2012. In 2008, the  
22 stream was listed for iron, manganese, pH, total  
23 suspended solids, and fecal coliform, unquote.

24 Methyl mercury is known to cause

1 serious nerve and organ problems in humans. Will  
2 the increased chloride and total dissolved solids  
3 levels in the Big Muddy River cause higher methyl  
4 mercury levels? Will the acid mine drainage  
5 allowed in this permit also increase the  
6 conversion of mercury to methyl mercury? Can  
7 IEPA assure us that it will not? We know there  
8 is commercial fishing and recreational fishing in  
9 the Big Muddy River. Because of bioaccumulation  
10 of heavy metals up the food chain, we are  
11 concerned that anyone eating catfish, bass or  
12 other predatory fish will be harmed. Has IEPA  
13 evaluated the possible harm to humans from  
14 increased methyl mercury that could be caused by  
15 granting this permit? According to  
16 sciencedirect.com, quote, Mercury speciation,  
17 which is affected by chloride, will impact  
18 mercury bioavailability to methylating bacteria,  
19 affecting subsequent methyl mercury production  
20 and bioaccumulation in these systems, unquote.  
21 Also, the Illinois Department of Public Health  
22 has issued a methyl mercury advisory for predator  
23 fish in all of the waters of the state, and this  
24 can be found on their website.

1           In summary, considering these  
2 concerns, I am opposed to IEPA granting this  
3 Permit Number Illinois 0077666 to Williamson  
4 Energy. Thank you.

5           HEARING OFFICER: Chuck, you'll be up  
6 to the microphone next to provide your comments.  
7 And following, we'll have Jacob Bolton. Jacob,  
8 if you're still here, you can make yourself  
9 prepared to follow Chuck.

10           CHUCK PAPROCKI: Hello. My name is  
11 Chuck Paprocki, P-A-P-R-O-C-K-I. I'm a member of  
12 SAFE and a member of Carbondale Spring. As you  
13 can see -- I hope you can see that the people of  
14 Carbondale are no fools. We understand and love  
15 our natural environments, and we know that we are  
16 asked to abide being poisoned because a private  
17 mining company is unwilling to clean up its own  
18 mess and protect its workers. Now, this is just  
19 me asking the question personally. According to  
20 what I understand about the EPA regulations  
21 regarding when you notify the public that a  
22 public waterway is being poisoned, you calculate  
23 that if chlorides and sulfates poisoning is above  
24 250 milligrams per liter, that there's no reason

1 to tell the public that they're being poisoned  
2 because the taste is so bad and the water stinks  
3 so bad that there's no need to tell the people  
4 what is obvious. That's my understanding of your  
5 rules and regulations about not warning the  
6 public about these poisons.

7 Now, according to the parameters that  
8 I see in your documents for poisoning, you're  
9 allowing 1,250 milligrams per liter for sulfates,  
10 five times the poisoning level that people  
11 notice, and 500 milligrams per liter of  
12 chlorides, which is double the amount. And this  
13 is being added to our water supply every second,  
14 every hour, every week, every month, every year  
15 for as long as the mine is open. And I wanted to  
16 know if you really believe, this panel of EPA  
17 agents, that this is really safe for the people  
18 of southern Illinois?

19 I just want to make a statement. We,  
20 the people of southern Illinois, want the state  
21 of Illinois and the EPA to know that we hold you  
22 accountable as well as the mining companies for  
23 any destruction to any life form in our  
24 environment or to any adversity to human health

1 in southern Illinois as a consequence of granting  
2 these companies the right to pollute our  
3 environment knowing full well the potential risks  
4 of these actions. Thank you.

5 MR. TWAIT: Yeah, just for a  
6 clarification, you mentioned a sulfate standard  
7 of 250. That is for a public water supply  
8 intake, just to let everybody know. The water  
9 quality standard for sulfate is higher than that.

10 HEARING OFFICER: Jacob Bolton,  
11 you'll be up to provide your comment next. And  
12 following Jacob, Grant Depoy.

13 JACOB BOLTON: Hey, everybody. My  
14 name is Jacob Bolton, also known as "Treesus." I  
15 am the diplomat of trees.

16 HEARING OFFICER: Could you spell  
17 your name for the court reporter?

18 JACOB BOLTON: Bolton, like  
19 B-O-L-T-O-N. Michael Bolton is not my relative.  
20 I hold no positions on this issue and stand here  
21 as an honest broker. I am a forestry student at  
22 Southern Illinois University, and I've taken a  
23 watershed management class very recently, and I  
24 am in Intro to Water Resources right now to learn

1 about how to save the world. I am empathetic to  
2 all that is and every human, and I respect all of  
3 you. I value empirical evidence that is  
4 comprehensive to encompass complex  
5 socio-ecological issues, and I am a problem  
6 solver. So my first question, is Pond Creek  
7 considered under the CWA waters of the USA?

8 MR. TWAIT: Yes.

9 JACOB BOLTON: Thank you. What order  
10 stream is this creek?

11 MR. TWAIT: I don't know the answer  
12 to that.

13 JACOB BOLTON: But it's part of a  
14 watershed, and watersheds all drain to one area,  
15 and I am curious if this permit considers  
16 watersheds downstream.

17 MR. TWAIT: In what way?

18 JACOB BOLTON: In terms of the  
19 Mississippi River, you know, all of the larger  
20 watersheds on a larger scale.

21 MR. TWAIT: We looked at ensuring  
22 that the water quality standards will be met.  
23 And once they're met, they're expected to be met  
24 downstream where additional water comes in.

1                   JACOB BOLTON: Got you. Since these  
2 are our common-pool resources and waters of the  
3 USA, I am curious if this has taken into  
4 consideration the compounding pollutants that  
5 were discharged downstream and also considerate  
6 of all the other industries that input into  
7 streams, because the Gulf of Mexico is currently  
8 under hypoxia during the summers, and there's  
9 fish die off, and this is a tributary to the  
10 Mississippi which discharges into the Gulf of  
11 Mexico. So I'm just curious if they will take --  
12 if you guys and others will consider thinking  
13 comprehensively working together to consider  
14 these compounding pollutants and the life of all  
15 that is.

16                   MR. TWAIT: We can consider that. If  
17 you have information as to how they are  
18 compounding, that would be helpful.

19                   JACOB BOLTON: I suppose I'm curious  
20 -- I'm learning still. I'm a student, so I'm not  
21 smart -- I'm not like whatever it is. I'm very  
22 smart. I'm an intelligent human. You all are,  
23 too. And the metals, heavy metals, I don't see  
24 how they possibly dissolve in water. How does

1 that affect plant life and trees, as well as the  
2 animals that use those for habitation?

3 MR. TWAIT: The metals are -- some of  
4 them are particulate, and they will settle out in  
5 the stream continuum, and some of it is dissolved  
6 and it will continue going downstream.

7 JACOB BOLTON: Cool. Well, I think  
8 that the boundary delineations that we currently  
9 use ought to be reconsidered to include  
10 watersheds to help people focus on area-specific  
11 introductions of pollutants and their compounding  
12 issues downstream. I highly -- I know that there  
13 are, without even looking, that there are a lot  
14 of people introducing pollutants into the streams  
15 and the river. I feel that drugs (ph) is a  
16 large-scale issue that we can all work on  
17 together as 7.7 billion people trying to save the  
18 world. And we need site-specific community  
19 studies that involve more action with each other.  
20 I think that we have too much bureaucracy that  
21 could be reduced and maybe start focusing on  
22 problem solving quicker, because there is  
23 empirical evidence that climate change and other  
24 forms of not goodness in all of our lives, worse

1 case scenario, could end us in 80 years. I would  
2 like to live, and I would like everyone else to  
3 live, too. So thank you.

4 HEARING OFFICER: Grant, you'll be up  
5 next to the microphone. Carla Womack, you will  
6 follow Grant. And, Grant, if you could give me  
7 just one moment before you start.

8 Grant, you can begin, and if you  
9 wouldn't mind stating your name and spelling your  
10 last name for the court reporter. And then once  
11 Grant has finished, Carla Womack, if you are  
12 still here and present tonight, you will follow  
13 Grant.

14 GRANT DEPOY: Thank you. Grant  
15 Depoy, D-E-P-O-Y. I'm a concerned citizen, I'm  
16 concerned about the Big Muddy River, and I'm  
17 concerned about our future dealing with the  
18 consequences of our actions right now. I'm a  
19 lead facilitator in the Student Sustainability  
20 Coalition at SIU-C, and I'm also a forestry  
21 student. We have one of the top forestry schools  
22 in the nation where I study collaborative  
23 management, policy sciences, forest policies, and  
24 watershed governance under some of the best

1 professors in the nation. So, first, I want to  
2 say that I'm training right now to do the job you  
3 guys are doing. And like Jacob shared before, we  
4 have class discussions about the current  
5 contemporary issues we are dealing with in the  
6 field, one of those being the shortfalls of the  
7 EPA's framework for decision-making being that it  
8 relies on only one kind of way of understanding,  
9 one kind of knowledge, and we need to expand our  
10 field to take into consideration other ways of  
11 knowing being local experiential knowledge -- and  
12 I think we've heard from a number of people here  
13 today -- that they have knowledge regarding the  
14 locality of these issues that our framework is  
15 not prepared to address on this hyper-localized  
16 scale. The other perspective being traditional  
17 ecological values. So just one quick question I  
18 had was if in this decision-making there have  
19 been platforms made for the consideration of the  
20 indigenous people's values of this area.

21 MR. TWAIT: I don't think we've seen  
22 that information, so if you'd provide it for the  
23 record, we can take that into consideration.

24 GRANT DEPOY: So thank you. I think

1 it also would be well to consider a platform for  
2 the local people who live on that land and the  
3 land affected by the Big Muddy right now. I  
4 think it's clear in our field we need to move  
5 towards more of democratic ways of  
6 decision-making. I think if we were to collect  
7 wisdom from the people here, you can see very  
8 clearly that this decision has not been  
9 democratic. I don't think a lot of people here  
10 feel that their voices are being heard. And  
11 we're scared, because we don't know who is making  
12 the decisions. We don't know who is the one with  
13 the pen in their hand putting down the final  
14 "yes." So I need people in my field to look up  
15 to. This is going to be -- these issues I'm  
16 going to be working against my whole life to turn  
17 around these decisions made and have a real  
18 understanding of the consequences I'm going to  
19 have to deal with. So I'm scared for myself for  
20 the future. Like Jacob said, worse case  
21 scenario, who knows what we'll have in the  
22 future. I don't think we have room to be  
23 making -- to be taking these risks right now. I  
24 don't know who's benefitting from this other than

1 those 500 families that have been mentioned  
2 earlier, but we need to make a world that works  
3 for a hundred percent of humanity here and not  
4 just a handful of people. And if it's another  
5 50 years, if this is ensured to be in production  
6 for another 50 years, that's also not a future I  
7 want to live in.

8 So I'm also a visual learner. I just  
9 wanted to leave this with if you're in this room  
10 and you don't support this, please stand up right  
11 now. Stand up if you don't support this. And if  
12 this passes, raise your hand up if you're going  
13 to keep fighting against this to turn this  
14 around. All right. Thank you.

15 HEARING OFFICER: Carla Womack, are  
16 you present with us tonight? I don't see you.  
17 Karen Frailey? Karen Frailey, if you're here,  
18 please approach the microphone.

19 UNIDENTIFIED SPEAKER: She'll submit  
20 a written comment.

21 HEARING OFFICER: Okay. Thank you  
22 very much. John Wallace? Mr. Wallace, it looks  
23 like he's still here and will be coming to the  
24 microphone. Following Mr. Wallace, there's no

1 first name. N. Tenney -- okay. N. Tenney  
2 Naumer. Okay. A hand raise back there. So,  
3 Mr. Wallace, whenever you're ready, you can  
4 proceed with your comments. Oh, who do we have  
5 at the microphone?

6 KARL FRALEY: Karl Fraley.

7 HEARING OFFICER: Okay. I have Carla  
8 with an A at the end, Carla Womack, Karen  
9 Frailey.

10 KARL FRALEY: Oh, I'm sorry.

11 HEARING OFFICER: That's okay. I  
12 think I called them twice. I called them back to  
13 back, and it may have been combined. So is Carla  
14 Womack here? She's gone, okay. Karen Frailey  
15 said she would submit her comments written. Then  
16 John Wallace. And following John -- okay.  
17 Great. Thank you.

18 JOHN WALLACE: John Wallace,  
19 W-A-L-L-A-C-E. John, J-O-H-N. I want to talk a  
20 little bit about this region a little more than I  
21 think other folks have, because the natural  
22 wonders, the incredible landscape that we have  
23 here, and the Big Muddy River downstream of the  
24 outflow pipe will actually enter -- this water

1 will pass through some of this unique area.  
2 Before I do that, something that caught my eye  
3 which -- and raised my dander, I might say, was a  
4 Southern Illinoisan article about this hearing  
5 coming up in which several people were quoted  
6 from the Illinois EPA. One in particular was a  
7 Kim Briggs, the media representative for your  
8 organization, and she made a comment that this  
9 meeting was not a popularity vote. I find that  
10 offensive. We live in a democracy. You all know  
11 that. You are -- I'm a retired public servant,  
12 and you all are public servants now. And when  
13 the public stands up and says "no," you need to  
14 listen.

15                   Mr. LeCrone, you were quoted as well,  
16 and you made some comments about, you know, it's  
17 not a hearing that we're going to -- the chances  
18 are this isn't going to be a yes or no  
19 determination from your agency. I get that there  
20 are lots of steps in this process. I understand.  
21 But what's real important is for you all to  
22 understand the local folks down here, you know,  
23 barring a few that are associated and affiliated  
24 with the mining company, are bothered by this.

1 We've watched degradation take place too much.  
2 The Big Muddy is an impaired stream. But the Big  
3 Muddy is also a fascinating area. It passes  
4 through five natural -- or excuse me -- four  
5 different natural divisions in this region  
6 downstream of the outflow pipe.

7           You know, I really thought the  
8 diffusers were going to be something hard to  
9 comprehend. We have five different versions of  
10 PVC pipe, and that's going to appropriately  
11 diffuse this water, this degraded water? And  
12 then the -- let me get back to my natural  
13 divisions. It passes through the Southern Till  
14 Plain, then into the Shawnee Hills and into the  
15 Illinois Ozarks, the Ozark Plateau and the  
16 Mississippi River Bottomlands. So the Big Muddy  
17 passes through some really unique areas, areas  
18 that you don't have in Springfield or aren't  
19 found anywhere else in the state.

20           And as it passes through these areas,  
21 it also passes through a real important chunk of  
22 public land: The Shawnee National Forest. It is  
23 the largest single ownership of land in this  
24 state: 287,000 acres. And it's public land.

1 It's land that I use and many people around here  
2 use. And the Big Muddy is a stream that I have  
3 used and many of us around have used for  
4 recreational use, for just appreciating the  
5 scenic beauty of this area. And as it passes  
6 through this area, there are -- in Jackson  
7 County -- I've lived in Jackson County for about  
8 25 years, and I still recreate in Jackson County.  
9 I own some land in Jackson County as well. But  
10 as it passes through the Shawnee National Forest,  
11 Little Grand Canyon was mentioned as again one of  
12 those national natural landmarks. LaRue-Pine  
13 Hills, it passes nearby. There are a number of  
14 different flood plains and different types of  
15 wetlands that the stream passes through. And I  
16 just want to make sure you understand this  
17 polluted water, this increase in flow is going to  
18 pass through a number of unique bends in the  
19 river, including Rawlins Bend, Cripps Bend,  
20 Dillon Bend, Mill Bend, Horseshoe Bend wherein  
21 you find Horseshoe Lake, and Horseshoe Bluff  
22 butts up against it. Turkey Bayou, Oakwood  
23 Bottoms Greentree Reservoir, Rattlesnake Ferry,  
24 all of these places are used by us. The Big

1 Bayou. I've canoed the Big Muddy with groups of  
2 people. I one time took a class of high school  
3 students and camped out in this flood plain in  
4 one of these bends on the national forest, so it  
5 was a very memorable time several years ago. I  
6 hope to do it again. But more importantly, what  
7 I hope is that those places are here after I'm  
8 gone so that other high school students, those  
9 high school students that I took will take some.  
10 When they have high school students, they'll  
11 bring them down to do the same thing.

12 HEARING OFFICER: Mr. Wallace, I'm  
13 going to have to ask you to wrap up.

14 JOHN WALLACE: This 2.7 million  
15 gallons of water average daily comes out to  
16 360,455 cubic feet. That's like 144.2 feet by  
17 50 feet by five stories tall of water a day  
18 that's going to be added to the river, and that  
19 water's compromised. It's polluted water. And  
20 no one mentioned yet the impacts from that flow  
21 on erosion. The Big Muddy River is already  
22 deepening in size. What's going to happen there?  
23 Can you guarantee that these places are going to  
24 be protected that are so important to us? These

1 National Natural Landmarks, the US Park  
2 Service --

3 HEARING OFFICER: Mr. Wallace, you  
4 are out of time. I apologize.

5 JOHN WALLACE: Please take careful  
6 consideration of what you're about to do here.  
7 Thank you.

8 HEARING OFFICER: Thank you for  
9 providing comments.

10 JOHN WALLACE: There's also some  
11 petitions for Governor Pritzker to protect the  
12 Big Muddy River that I would like to submit.

13 HEARING OFFICER: You can provide  
14 them to me and not to the court reporter. I  
15 cannot deliver these to Governor Pritzker. If  
16 you want to deliver them yourself, you should  
17 take them with you; otherwise they will be  
18 entered into the record for the public hearing.  
19 Just so you know, by providing them to me does  
20 not mean they will make it to Governor Pritzker.  
21 Instead, they will be entered into the hearing  
22 record. Okay. Well, thank you very much. I  
23 will ensure that they get entered into the  
24 hearing record.

1 UNIDENTIFIED SPEAKER: Thank you.

2 HEARING OFFICER: Absolutely. The  
3 next speaker will be Joyce Blumenshine.

4 UNIDENTIFIED SPEAKER: Joyce will  
5 submit written comments.

6 HEARING OFFICER: Okay. Albert  
7 Ettinger, you will be up to the microphone  
8 following the current speaker.

9 TENNEY NAUMER: For the record, my  
10 name is spelled T, as in Tom, E-N-N-E-Y. My last  
11 name is spelled N-A-U-M-E-R. Can you hear me  
12 now? Okay. So I live in Marion, and I was born  
13 and raised here in southern Illinois. My  
14 family's been here for over 150 years. I'm a CPA  
15 and a Certified Fraud Examiner, and I also  
16 studied finance at SIU a couple years at the  
17 doctoral level, so I know a little bit about  
18 analyzing financial statements. Question: What  
19 has the EPA, Illinois EPA done to analyze the  
20 financial condition of this company?

21 MR. TWAIT: That is not something  
22 that we look at for issuing NPDES permits.

23 TENNEY NAUMER: Oh, really?

24 MR. TWAIT: IDNR may do that when

1 they issue bonds, but that's not something that  
2 we consider.

3 TENNEY NAUMER: So they have a bond  
4 for five hundred thousand for reclamation of the  
5 pipeline area, but as I understand it, no bond  
6 for anything that might occur in the river; is  
7 that right?

8 MR. TWAIT: I don't know what their  
9 bond is.

10 TENNEY NAUMER: You guys don't know?  
11 You're analyzing this to see if you're going to  
12 permit this thing to go forward, and you don't  
13 know? Really?

14 MS. WARD: Yes, you are correct,  
15 ma'am. That's the bond for the pipeline.

16 TENNEY NAUMER: But not for the  
17 effluent?

18 MS. WARD: No, not for the effluent.  
19 That bond, that is only for reclamation by the  
20 company for construction of the pipeline.

21 TENNEY NAUMER: Okay. Is that  
22 enough?

23 MS. WARD: To reclaim the pipeline?  
24 I believe so.

1                   TENNEY NAUMER: Twelve miles, is that  
2    enough?

3                   MS. WARD: I am not actually an  
4    expert in calculating bonds. This is something  
5    with IDNR.

6                   TENNEY NAUMER: IDNR, huh? We should  
7    be talking to them, huh?

8                   MS. WARD: About bonds, yes.

9                   TENNEY NAUMER: So it won't enter  
10   into your decision-making?

11                  MS. WARD: No, ma'am.

12                  TENNEY NAUMER: Really? So we've got  
13   a company that's going bankrupt here. They can't  
14   make their interest payments. Their stock price  
15   went down to seven cents. They've been de-listed  
16   from the stock exchange. What are they going  
17   to -- you know, what they're going to do here is  
18   try to extract here and leave all the external  
19   costs to the Illinois taxpayer. Isn't that a  
20   concern? Isn't that a concern? I've heard at  
21   least 20 people up here give reasons, any one of  
22   which should negate this project, any one of  
23   which. Yeah, nobody's looking at me. Okay.  
24                   So, furthermore, you know, Foresight

1 Energy hasn't paid any taxes to the federal  
2 government in five years or a dividend. Their  
3 accounts payable is just increasing rapidly.  
4 They're not going to have the money to do  
5 anything to help this place down here if  
6 something goes wrong. It's not going to happen.  
7 The parent company just declared bankruptcy.  
8 It's not going to happen, and you guys are just  
9 going to surely not rubber stamp this project.  
10 Surely not. You don't communicate with the IDNR  
11 on the finances of this thing?

12 MR. TWAIT: We do not communicate  
13 with IDNR on finances. Although we do  
14 communicate with IDNR, just not on finances.

15 TENNEY NAUMER: Huh, okay. Another  
16 interesting thing is that you've already approved  
17 a pipe outflow upstream, and somehow this one  
18 downstream is supposed to continuously monitor  
19 even though we know that people have complained  
20 about things that happen on the weekend that they  
21 get bullied out of -- we know that -- so they're  
22 going to continuously monitor down here the  
23 stream, and if something goes wrong up there,  
24 they're just going to shut everything down.

1 Really? You know what? It's like water rights  
2 in the west, you know, when you buy a piece of  
3 property, you get assigned a water right, and if  
4 you're further downstream, you get less and less  
5 and less, and you pay for those water rights  
6 upstream. You pay a lot of money to have first  
7 right on the water out west. You guys are just  
8 giving away the right to pollute. You're just  
9 freaking giving it away.

10 HEARING OFFICER: We're going to have  
11 to keep the comments to the speaker, one, to be  
12 respectful of their time; two, to be respectful  
13 of the court reporter.

14 TENNEY NAUMER: Right. And I noted  
15 that you said it's 5,000 gallons a minute maximum  
16 flow rate; is that right?

17 MS. WARD: That's right. That's  
18 correct.

19 TENNEY NAUMER: That's like 7.2  
20 million a day. I think I used my calculator  
21 correctly. You never catch a CPA without a  
22 calculator. But I thought in the permit it said  
23 it was going to be 2.7 to 2.9 daily. How is that  
24 working out mathematically? Anyway, we've got

1 this Ohio millionaire, Bob Murray, who just paid  
2 himself \$14 million out of the company before he  
3 declared it bankrupt, and Foresight is directly  
4 underneath that, and it's going bankrupt. If you  
5 look at the financials, which I have here, which  
6 I can enter into the record, they're going belly  
7 up. What are they going to do here when it's  
8 cleanup time? How are they going to pay for  
9 that? But you guys aren't looking at the  
10 finances. Wow. Seriously. You guys should be  
11 ashamed. Ashamed.

12 MR. TWAIT: IDNR is the entity that  
13 collects bonds for mining facilities to ensure  
14 cleanup.

15 TENNEY NAUMER: Ensure. Ensure like  
16 they do reclamation?

17 MR. TWAIT: That is not the Agency's  
18 -- that is not Illinois EPA's responsibility.

19 TENNEY NAUMER: Well, you know it  
20 now. It's going to go in the record.

21 HEARING OFFICER: I'm going to have  
22 to ask you to wrap up your comments.

23 TENNEY NAUMER: Okay. I'm done.

24 HEARING OFFICER: If there are any

1 documents you want us to put into the record, you  
2 can do that now. Mr. Ettinger, if you can give  
3 us just one moment.

4 MR. LeCRONE: Okay. I'd like to  
5 explain a little bit more about what our  
6 authorities are in response to her concerns about  
7 financial stability. The NPDES program is a  
8 federally-delegated program. The Illinois EPA is  
9 a delegated state to administer the USEPA's  
10 program. The NPDES permitting program does not  
11 contain any financial assurance requirements, and  
12 our agency does not have any authority either  
13 under the delegated program agreement or via the  
14 Illinois Pollution Control Board to require any  
15 financial assurance or for there to be a  
16 financial assurance analysis of the company. So  
17 we just have to follow the Pollution Control  
18 Board regulations for what we can and can't  
19 consider in the issuance of a permit.

20 ALBERT ETTINGER: Mr. LeCrone, can I  
21 -- excuse me. Mr. LeCrone, I beg to differ with  
22 you to some extent. I'm Albert Ettinger. I'm a  
23 lawyer. I represent the Sierra Club here. Under  
24 the Illinois Environmental Protection regulations

1 for antidegradation, you're only allowed to grant  
2 a new loading into a water body if it is  
3 reasonably necessary to accommodate important  
4 social or economic development. If this mine is  
5 going to go bankrupt shortly, this discharge is  
6 not necessary to accommodate important  
7 socioeconomic development. In fact, what it  
8 would do is create negative economic development.  
9 And what you are basing your decision on is an  
10 antidegradation analysis which has only  
11 considered what is good for the company and the  
12 economic development that it claims that it will  
13 create. You have not considered at all -- and I  
14 have read the antidegradation statement -- at all  
15 the damage that might be done particularly if  
16 they open this discharge and go bust six months  
17 later.

18 Now I have a question, though. And  
19 that is -- that's not -- that is within your  
20 authority. By the way, I'm a lawyer. I  
21 recognize when people have authority to do  
22 things. And, by the way, I believe the hearing  
23 officer has done a very good job today, and I  
24 have watched a lot of hearings. But I have a

1 question for Mr. Twait. I understand that the  
2 company produced some documents yesterday that  
3 are relevant to the comments that were made in  
4 August; is that true?

5 MR. TWAIT: Yes.

6 ALBERT ETTINGER: Are we going to get  
7 those comments? Are we going to get those  
8 documents before we have to comment on this  
9 permit?

10 MR. TWAIT: They're available by a  
11 FOIA now.

12 ALBERT ETTINGER: Yeah, and I don't  
13 get 30 days. We need those documents now,  
14 because we've got 30 days to comment. So we wish  
15 to see those documents ASAP. I have a question  
16 for Ms. -- I'm sorry, ma'am -- Ward?

17 MS. WARD: Yes.

18 ALBERT ETTINGER: You explained that  
19 there were corrections that needed to be made in  
20 certain discharge monitoring reports because of  
21 mistakes in decimal points?

22 MS. WARD: There was not a mistake in  
23 decimal points. There was a unit mistake. A  
24 different unit was recorded.

1                   ALBERT ETTINGER: Who made those  
2 mistakes?

3                   MS. WARD: I believe that our agency  
4 was recording the data in the ECHO with different  
5 units than it's supposed to be.

6                   ALBERT ETTINGER: Okay. Well, are  
7 you aware of a pH reading of 3.3 in October of  
8 2018? Was that recorded properly?

9                   MS. WARD: I cannot recall off the  
10 top of my head. I am not saying that all of the  
11 numbers were recorded incorrectly. The majority  
12 of the numbers were.

13                  ALBERT ETTINGER: The majority of the  
14 numbers were recorded incorrectly by the Agency  
15 or by the company?

16                  MS. WARD: They were taking into  
17 consideration the wrong units.

18                  ALBERT ETTINGER: Who was?

19                  MS. WARD: The Agency was.

20                  ALBERT ETTINGER: Okay. I have a  
21 couple of other little questions here. One is on  
22 mercury. I'm looking, first of all, this Table  
23 2.1, is that -- what the company did, is that, in  
24 effect, the reasonable potential analysis that

1 was done for this permit, or did the Agency do  
2 another reasonable potential analysis?

3 MR. TWAIT: I'm not sure what you've  
4 got there. Where did that come from?

5 ALBERT ETTINGER: I've got Table 2.1  
6 to the antidegradation analysis that was done in  
7 2016 and was based on data between September 2016  
8 and the first of November in 2016. It's that  
9 document that they have used to include that we  
10 don't need to worry about mercury or iron or  
11 several other constituents because, in their  
12 view, these numbers did not exceed the water  
13 quality standards.

14 MR. TWAIT: Offhand, I'm not sure  
15 that we used those numbers. I'm not positive  
16 that we were aware that they were in the  
17 document.

18 ALBERT ETTINGER: I'm sorry? You  
19 weren't aware of the antidegradation analysis?  
20 You didn't mean to say that, right?

21 MR. TWAIT: No, I'm saying I didn't  
22 know that those mercury data were in there. Let  
23 me pull it out and see.

24 HEARING OFFICER: I am going to have

1 to ask to reduce the amount of comments outside  
2 of the speaker at the microphone. We are going  
3 beyond the scheduled time. We are doing that as  
4 an opportunity to provide all of you as much time  
5 as possible to provide comments. But if it  
6 continues to --

7 ALBERT ETTINGER: I actually -- I  
8 have real questions here that I would kind of  
9 like to get answers to.

10 HEARING OFFICER: Absolutely. I  
11 would love for you to have that opportunity.

12 MR. TWAIT: I don't see that I looked  
13 at that data for the anti-deg purposes. And you  
14 said it was in Table 2.1?

15 ALBERT ETTINGER: Table 2.1 of the  
16 antidegradation analysis that was written by the  
17 company.

18 MR. TWAIT: Okay. We'll take a look  
19 at that.

20 ALBERT ETTINGER: Okay. Well, they  
21 used -- in order for them to conclude that  
22 there's no problem from mercury, they rely on  
23 this data which interestingly comes down to two  
24 point per trillion, which sounds really great,

1 but -- and they find there's no detects on two  
2 points per trillion. But as they note  
3 themselves, the water quality standard is half of  
4 what they measured down to. Has the agency done  
5 any work to assure that the reasonable potential  
6 for mercury has been measured down to where it  
7 would measure a violation of the mercury  
8 standards?

9 MR. TWAIT: It's my understanding  
10 that the company is continuing to take metals  
11 data for a determination of a reasonable  
12 potential, but we have not seen that data.

13 ALBERT ETTINGER: Wait a minute.  
14 Wait a minute. You're going to ask the public to  
15 comment on a permit when you haven't collected  
16 all of the data yet relative to the permit?

17 MR. TWAIT: They are collecting data  
18 due to comments received in the comment period.

19 ALBERT ETTINGER: One of my comments  
20 would be, then, that they should use clean  
21 mercury techniques in order so that they are not  
22 looking at a detection method which is well over  
23 the water quality standard. And as we are all  
24 aware, the Big Muddy River is impaired for

1 mercury, and it's black-letter law that you can't  
2 allow a mixing zone for a parameter in which  
3 there is already a violation; therefore this  
4 permit cannot be granted on the current record.  
5 Furthermore, did the Agency consider the IEPA --  
6 sorry. Excuse me. Did the Agency use the or  
7 consider the USEPA technical support document in  
8 1991 which is used in order to calculate a  
9 reasonable potential according to guidance from  
10 USEPA?

11 MR. TWAIT: We are aware of that  
12 document, and the mine is collecting additional  
13 data so we can use it correctly.

14 ALBERT ETTINGER: Okay. So we have  
15 six data points here. As you're aware under the  
16 technical support document that asks for a  
17 minimum of ten, so you're collecting more data at  
18 this point. Is that what we're hearing?

19 MR. TWAIT: That is my understanding.

20 ALBERT ETTINGER: Okay. I think  
21 those are all the -- oh, I have one more  
22 question, and this is really fascinating and  
23 could be interesting across the state. They're  
24 going to use conductivity probes in order to

1 determine the chloride level. Doesn't chloride  
2 as a percentage of conductivity vary under  
3 various conditions?

4 MR. TWAIT: It is something to --  
5 that they can develop a concentration curve on,  
6 but, yes, it will have some variation.

7 ALBERT ETTINGER: But it hasn't been  
8 developed yet?

9 MR. TWAIT: The curve has not.

10 ALBERT ETTINGER: So we don't know  
11 what chloride is going to come out based on your  
12 conductivity readings currently, but you're going  
13 to develop that in the future?

14 MR. TWAIT: Yes.

15 ALBERT ETTINGER: Or rather the  
16 company is going to develop that in the future?

17 MR. TWAIT: Yes, and then we're going  
18 to look at it.

19 HEARING OFFICER: Next up to the  
20 microphone, Ann Wheeler. Ann Wheeler, are you  
21 still with us tonight? Amelia Robinson?

22 UNIDENTIFIED SPEAKER: She's gone.

23 HEARING OFFICER: Kay Rippelmeyer?

24 UNIDENTIFIED SPEAKER: Gone.

1 HEARING OFFICER: Karl Fraley? Karl  
2 Fraley up to the microphone. Before you start,  
3 Karl, let me call out a few other names and see  
4 who we still have with us tonight. Mark  
5 Malkovich?

6 MARK MALKOVICH: Here.

7 HEARING OFFICER: Excellent. You  
8 will follow Mr. Fraley.

9 KARL FRALEY: My name is Karl with a  
10 K, K-A-R-L, Fraley, F-R-A-L-E-Y. I'm 72 years  
11 old, and I've lived on the river all my life in  
12 Murphysboro. I've been a commercial fisherman  
13 since I was 15 years old. I am currently the  
14 president of the Southern Illinois Waterfowl  
15 Association which represents hundreds of water  
16 fowlers in the southern nine counties of  
17 Illinois. This river is the lifeblood of the  
18 region from Rend Lake to the Mississippi. The  
19 entire ecological system is being threatened by  
20 this proposal. All of the fish, waterfowl,  
21 wildlife, trees and adjoining lands will be  
22 decimated by this wastewater. The good Lord made  
23 this river for us, and I'm sure is he didn't  
24 intend for it to be turned into a sewer from many

1 coal mines. This poison water will kill fish.  
2 Many bald eagles nest along the  
3 river. They'll fly down, feed on these fish,  
4 take these fish back to their young in their  
5 nests and wipe out generations of eagles. All  
6 species of waterfowl use this river year-round.  
7 Especially in the spring they feed on the  
8 invertebrates in the water to get the protein to  
9 sustain their northward migration. Extended  
10 periods of high water will kill trees and ruin  
11 farmland. The coal mines need to build their own  
12 wastewater plants and not be allowed to ruin our  
13 beautiful river. I pray that government agencies  
14 will not allow this to happen. In God we trust.

15 HEARING OFFICER: Mark, you'll be up  
16 to the microphone next, and then Dennis Conley,  
17 are you still with us? Okay. Mr. Conley will  
18 submit his comments in writing. Thank you for  
19 being with us tonight. Reth Dagraty (ph)? Looks  
20 like R-E-T-H --

21 UNIDENTIFIED SPEAKER: Retha  
22 Daugherty.

23 HEARING OFFICER: Retha. Is she  
24 still with us? She's gone? Katie Purcell?

1 UNIDENTIFIED SPEAKER: She's gone.

2 HEARING OFFICER: Sarah Depuy,

3 D-E-P-U-Y.

4 SARAH DEPUY: Yes.

5 HEARING OFFICER: You're still with  
6 us? All right. You will follow Mr. Malkovich  
7 when he's completed.

8 MARK MALKOVICH: Hello. My name is  
9 Mark Malkovich, M-A-L-K-O-V-I-C-H, and I  
10 currently own property that runs a half mile on  
11 both sides of the Big Muddy, and we use this for  
12 recreation, fishing, we swim in it, and it's a  
13 big part of our life. And today I'm going to  
14 talk about mine acid drainage, and the reason  
15 that I have a different perspective on this is I  
16 worked in the coal mines for thirteen years. And  
17 the products that are pumped out of the mine have  
18 a lot more to do than just salt, chlorine,  
19 saline. Many, many other problems, and the main  
20 one is they call it fool's gold, you know, and  
21 it's called iron pyrite. And this iron pyrite is  
22 a significant part of the acid that can break  
23 down these heavy metals, and that when I worked  
24 in the mine, I could see that they had also a lot

1 of things -- they would pump this water into big  
2 pits. These pits would be covered with oil and  
3 grease and no telling what else. Also now, the  
4 implement of diesel mining, that diesel fuel  
5 would again come on top of those pits, and then  
6 when they pumped that water out, it would all go  
7 to the same place. So I have an article here,  
8 and it's from the United States Environmental  
9 Protection Agency, and it talks about acid mine  
10 drainage.

11 Acid mine drainage is currently the  
12 main pollution of surface water in the  
13 mid-Atlantic region. Acid mine drainage is  
14 caused when water flows over or through  
15 sulfur-bearing materials forming solutions of net  
16 acidity. Acid mine drainage comes mainly from  
17 abandoned coal mines and currently active mining.  
18 Acid mine drainage degrades more than 4,500  
19 stream miles in the mid-Atlantic region with a  
20 loss of aquatic life, restricts stream use for  
21 recreation, public water drinking, and industrial  
22 water uses.

23 And they say, Well, what is mine  
24 drainage? Mine drainage is the metal-rich water

1 formed from chemical reaction between water and  
2 rocks containing sulfur-bearing materials. The  
3 runoff formed is usually acidic and frequently  
4 comes from areas where coal mining activities  
5 have exposed rocks containing pyrite, which is  
6 the fool's gold. And anybody that's ever worked  
7 in mining, it's in the coal seam itself. You see  
8 a lot of times they come up with these like  
9 little -- they call them gold dollars, and it's  
10 pure iron pyrite, and that is one of the main  
11 ingredients.

12                   And so it says, How does the mine  
13 drainage occur? Mine drainage is formed when  
14 pyrite, an iron sulfide, is exposed and reacts  
15 with air and water to form sulfuric acid and  
16 dissolved iron. Some or all of this iron can  
17 precipitate to form red, orange or yellow  
18 sediments in the bottom of streams containing  
19 mine drainage. The acid runoff further dissolves  
20 heavy metals such as copper, lead, mercury into  
21 ground and surface waters. As this here gets  
22 pumped into this, these minerals get absorbed  
23 into the water, and mercury is one of the main  
24 ones that has the ability to really, really

1     poison our water system. And the rate or degree  
2     by which the acid mine drainage proceeds can be  
3     increased by the action of certain bacteria.  
4     Certain bacteria can also increase that action  
5     from the acid.

6                     Now, some of the problems associated  
7     with mine drainage are contaminate our water --  
8     our drinking water, and they disrupt the flow of  
9     reproduction of aquatic plants and animals, and  
10    especially like the ones that live on the bottom.  
11    Since I did there with the Big Muddy River that  
12    comes across me, we used to see mussels,  
13    different washboard and other flat mussels,  
14    almost none around anymore, but there used to be  
15    a lot of them. So that affects it quite a lot.  
16    Also its corroding effects of acid on parts of  
17    infrastructure such as bridges and other metal  
18    structures.

19                    The results of acid drainage, acid  
20    mine drainage is one of the region's most serious  
21    water pollution problems. It is only an economic  
22    and ecological concern to the states -- it's not  
23    only a ecologic concern to the states, but it's  
24    also an economic concern as well.

1                   A region impacted by mine acid  
2 drainage often has a decline in valued  
3 recreational fish species such as trout and other  
4 -- we don't have trout here, but also the  
5 catfish. The predatory fish can eat the smaller  
6 fish and get this concentration of mercury. And  
7 then as we catch the fish and we eat them, we're  
8 eating that mercury in a concentrated form.  
9 Because over the years they eat all of those  
10 little fish, that mercury stays with that  
11 predatory fish. And so as they eat those fish,  
12 we in turn get that.

13                   A regional impact by acid  
14 mining [sic] often has a decline in the value of  
15 recreational fish species as well as a general  
16 decline in outdoor recreation and tourism along  
17 with contamination of groundwater drinking  
18 supplies.

19                   And I see, you know, people need a  
20 job. But every mine that I've worked at is gone.  
21 It's gone, and they left a huge, huge mess, and  
22 the EPA had to come in -- it took many, many  
23 years -- to do reclamation, cover up the old gob  
24 piles, and this is something that's going to

1 happen to this mine over here one day. It's  
2 going to happen. It happens to all of them. And  
3 so that in order to -- you know, this problem  
4 with pollution is a long, long-term problem  
5 whereas problem with employment is a short-term  
6 problem. We have to think about the future, so I  
7 thank you very much.

8 HEARING OFFICER: Sarah, your turn to  
9 the microphone. So we have under 15 minutes left  
10 before we're going to have to close the record,  
11 so I ask all remaining speakers to just keep that  
12 in mind of your fellow residents who would still  
13 like an opportunity to speak. However, you will  
14 still -- anybody up to the microphone in the  
15 remaining time will have the allotted time as  
16 anybody else, and then we'll just have just maybe  
17 about a 30-second wrap up at the end before we  
18 adjourn for the evening.

19 So, Sarah, you'll be up to the  
20 microphone. And then following Sarah, Roberta.  
21 Would you still like to provide comments tonight?  
22 Okay. You'll be after Sarah. Sarah?

23 SARAH DePUY: Okay. My name is Sarah  
24 DePuy, D-E, capital P-U-Y, and I just have a few

1 quick questions, actual questions. Just a point  
2 of clarity, a lot of the information from the  
3 IEPA about the data that they looked at when  
4 making this decision, it seems like what I heard  
5 is that a lot of data is being compiled by the  
6 mining corporation itself, and I'm just wondering  
7 is there additional data that the IEPA has found  
8 on its own or with other third parties in regard  
9 to the watershed analysis or water, things like  
10 that, or is most of the data around this decision  
11 coming from the mine and what they've collected  
12 so far and continue to collect?

13 MR. TWAIT: The Agency collects  
14 stream data and goes out and does biological  
15 surveys. IDNR does some mussel surface -- or not  
16 IDNR.

17 UNIDENTIFIED SPEAKER: INHS.

18 MR. TWAIT: Thank you. INHS does the  
19 mussel surveys. And but most of the data, if not  
20 all of the data, of the effluent is coming from  
21 the facility.

22 SARAH DePUY: Okay. And does the  
23 IEPA have any plans to conduct its own analysis  
24 like as -- like as the effluent comes out and

1 then the IEPA just does regular analyses and  
2 tests further on is its regular practice. Is  
3 that going to be something that the IEPA will  
4 include as a point in future documents?

5 MS. WARD: We are collecting the  
6 samples during our field inspections. And also  
7 IDNR collects the samples during the inspections.

8 SARAH DePUY: Okay. And, I mean, is  
9 there any plans for after to do like monitor it  
10 through IEPA, or is it simply through the  
11 monitoring from the coal mine? Like the  
12 monitoring that the coal mine will be doing, will  
13 that be the only monitoring that the IEPA has  
14 access to is that?

15 MS. WARD: The coal mine will  
16 continuously monitor the discharges, but we can  
17 go any day and take our own samples.

18 SARAH DePUY: Okay. And then my  
19 final question is on the data that the  
20 instruments will be collecting, will this data  
21 which I assume that the coal mine will have first  
22 access to, obviously, will this data be available  
23 to the public in some form? And if something  
24 happens to the instruments, will the public be

1 alerted? Just, basically, who has access to the  
2 data?

3 MS. WARD: I understand your  
4 concerns. Well, if anything is going to go  
5 wrong, the pipeline's not going to be able to  
6 discharge. And the downstream measurement at the  
7 very edge of the mixing zone is going to be  
8 reported daily on the DMRs to the agency.

9 SARAH DePUY: So just will the public  
10 have access through the IEPA? Like will there  
11 be --

12 MS. WARD: The public has the access  
13 to see the DMRs on the ECHO.

14 SARAH DePUY: Okay. Thank you.

15 HEARING OFFICER: Roberta, and then  
16 is Thomas Grant still here with us? Would you  
17 still like to provide comment, Mr. Grant? Okay.  
18 You'll follow Roberta.

19 ROBERTA DePUY: Roberta Deason DePuy,  
20 D-E-P-U-Y, and the Deasons have been in southern  
21 Illinois since 1835 and so on. I speak to you as  
22 a person who consumes water. I live in Marion.  
23 I'm married to a retired federal hydrologist soil  
24 scientist, 37 years experience. I concur with

1 the concerns that the monitoring data is  
2 submitted by the for-profit agency that wants to  
3 do -- that benefits of the permit -- I'm sorry --  
4 because I never saw that happen before, at least  
5 at the federal level for EPA. I'm greatly  
6 concerned.

7 I also, as I speak about water, you  
8 know, the watershed is extensive. We've talked  
9 about the tributaries that creates the wetlands.  
10 They are a sponge. And our drinking water in  
11 southern Illinois was created in the 1940's and  
12 '50s by our lake construction from the rivers.  
13 Crab Orchard Lake is -- it has the Wildlife  
14 Refuge. All of these things were created to  
15 provide our drinking water, and the wetlands is  
16 soaking everything up. So my one question is  
17 what is the date of the last watershed analysis,  
18 and how extensive is it that you have used and  
19 its impact on the water source for drinking water  
20 for southern Illinois?

21 MR. TWAIT: The Big Muddy River is  
22 not used as a water source for any --

23 ROBERTA DePUY: But it's part of the  
24 watershed. It is the watershed. All of the

1     creeks -- Google a map.  It's the watershed.  
2     This is how all of this was created.  The lakes  
3     came from the creeks from the rivers.  The Big  
4     Muddy is a tributary of the Mississippi, but it  
5     also goes into all of the creeks.  You follow it  
6     on a map.  You look at the wetlands on I-57 as  
7     you drive by even.  It's a watershed.  So what's  
8     the date of the latest watershed analysis that  
9     you're considering for this?  They were started  
10    in the 1980's in government, you know, the United  
11    States.

12                   MR. TWAIT:  We do a basin survey.  I  
13    believe it's on a five-year cycle.  I'm  
14    definitely not an expert on when was the last  
15    time that we did that basin assessment.

16                   ROBERTA DePUY:  And they're not used  
17    for any --

18                   MR. TWAIT:  We can address that in  
19    the responses somewhere.

20                   ROBERTA DePUY:  -- other agency's  
21    information?

22                   MR. TWAIT:  Yes, but I can't tell you  
23    the last time they were out there.

24                   ROBERTA DePUY:  Because usually as

1 EPA statements come up, they dovetail with all  
2 kinds of, you know, agencies like US Geological's  
3 been mentioned, the Clean Water Act has been  
4 mentioned. But there's information out there,  
5 and I'm just wondering how much consideration and  
6 scientific input are you, not the mine company,  
7 and how current is it, because this is our  
8 drinking water. So I'm just speaking as a  
9 citizen in opposition to this permit, because the  
10 people here drink the water, and it is in our  
11 watershed. Any other response to how you're  
12 considering the impact into the water shed? Look  
13 at the history of how our lakes were created.  
14 They're from the rivers and the creeks, so --

15 MR. TWAIT: Yeah, we use the 2016  
16 integrated report for our assessments.

17 ROBERTA DePUY: From --

18 MR. TWAIT: From Illinois EPA.

19 ROBERTA DePUY: And --

20 MR. TWAIT: And IDNR and --

21 ROBERTA DePUY: And how extensive is  
22 it? How far off does it go?

23 MS. DIERS: We don't have anyone on  
24 the panel right now that works in that. We will

1 definitely answer in the responsiveness summary.  
2 He's just not the right person. I apologize, but  
3 we will definitely respond to that.

4 ROBERTA DePUY: Okay. I mean, it's a  
5 real question. I mean, and my husband did  
6 watershed analysis. He had to quantify rocks,  
7 you know, how many trees were hanging over for  
8 temperature for the fish before any kind of like  
9 road construction began for a private company or  
10 any private company wanted to use something that  
11 impacted the public. So it's a valid question.

12 MS. DIERS: Absolutely.

13 ROBERTA DePUY: I appreciate -- and,  
14 again, as a citizen, I am in opposition to this,  
15 because it's our water. Thank you.

16 HEARING OFFICER: Mr. Grant, if you  
17 could come to the microphone, you may be our last  
18 speaker this evening. We'll see where we are on  
19 time when you finish.

20 THOMAS GRANT: First of all, thank  
21 you for coming out and listening to us and our  
22 concerns. I appreciate your time. I'm a citizen  
23 of Carbondale, Illinois. I've been watching this  
24 for a while, and I'm glad we're having this

1 hearing. I just want to be on the record as  
2 being adamantly opposed to this permit. A couple  
3 of things. The -- and I used to work for the  
4 City of Carbondale, and I used to have the  
5 ability to issue a NPDES permit. I didn't have  
6 to deal with waterways, so I feel for you people.  
7 But the very name of it, National Pollution  
8 Discharge Elimination System, is problematic.  
9 We're not eliminating. We're taking it down to  
10 what we believe is a safe level, but we're not  
11 eliminating. I think you have the ability and  
12 authority -- and I might be wrong, but we can ask  
13 the lawyer from the Sierra Club or this lawyer --  
14 to actually require that the mine company treat  
15 the water on site, extract the problem chemicals  
16 and the heavy metals before it is even discharged  
17 into the stream and can go into the stream at a  
18 cleaner level than the stream itself, which is  
19 how wastewater treatment plants are treated in  
20 this state, including every small town and city  
21 that has one in this state. So I believe you  
22 have that authority, and I thank you for your  
23 time.

24 HEARING OFFICER: Thank you,

1 Mr. Grant. Christina Krost, are you still here?  
2 Christina, you'll come to the microphone and,  
3 unfortunately, I apologize to the remainder of  
4 those in the audience who put in your names to  
5 provide comment tonight. Unfortunately, we are  
6 out of time. If you please stick around for  
7 following Ms. Krost's comments, I'll give  
8 additional information as to how you can ensure  
9 that your comments are entered into the record.

10 CHRISTINA KROST: Thank you for  
11 staying. We appreciate it. My name is Christina  
12 Krost, K-R-O-S-T, spelled with a C-H, C-H  
13 Christina. I'm the Southern Illinois Outreach  
14 Coordinator for Faith in Place, an interfaith  
15 creation care and environmental justice  
16 organization. I live here in Harrisburg, and I  
17 do outreach and organizing all over southern  
18 Illinois. I am a person of faith, I am a mother,  
19 and I am a concerned citizen.

20 Thank you for holding this hearing  
21 tonight, and I appreciate the chance to explain  
22 why I'm opposed to the approval of the Pond Creek  
23 Mine permit, because I feel the activities at the  
24 mine threaten human health and the environment

1 for all Illinoisans and the plants and animals  
2 living in the Big Muddy River watershed.

3 Water is life. Without it, we cannot  
4 survive. This truth echoes through the  
5 generations and across all faiths and cultural  
6 backgrounds. People have also long known that  
7 everyone is downstream or downwind of someone, so  
8 it is important to steward the land, air and  
9 water where you live so you do not adversely  
10 affect your neighbors.

11 This permit includes a 12.5-mile  
12 pipeline for discharge of millions of gallons of  
13 high chloride and sulfate water to dump directly  
14 into the Big Muddy River. As a parent and  
15 concerned citizen, I did research about the  
16 public health impacts of chloride and sulfates in  
17 water. It turns out these pollutants can cause  
18 gastrointestinal tract problems such as diarrhea,  
19 nausea, inflammatory bowel disease and consequent  
20 dehydration from these conditions, and it's a  
21 threat to public health.

22 I also learned that chloride can  
23 increase the corrosivity of water and reacts with  
24 metal ions increasing levels of metals in

1 drinking water. I am acutely aware of the  
2 dangers of heavy metal poisoning as I grew up not  
3 far from Flint, Michigan. But we don't have to  
4 go very far to see the effects of this in  
5 Illinois. In 2016, one in five Chicago homes  
6 tested had high levels of lead even after running  
7 the water for 3 to 5 minutes before using the  
8 water. What we've learned from Flint is that  
9 when the public is kept in the dark about these  
10 issues like this mine permit, terrible things can  
11 happen and then be covered up.

12 My research also led to a better  
13 understanding of how water travels from the Big  
14 Muddy River. The Big Muddy basin includes  
15 Kinkaid Lake, Rend Lake, Crab Orchard Lake,  
16 Devil's Kitchen Lake, Little Grassy Lake, and  
17 Cedar Lake. Of particular concern to me is  
18 Little Grassy Lake.

19 My husband is a United Methodist  
20 pastor, and my family has been attending camp at  
21 Little Grassy United Methodist Camp for many  
22 years. To learn that this mine discharge could  
23 affect my family's beloved camp was deeply  
24 concerning. I've watched countless families and

1 young adults deepen their spiritual relationship  
2 with their creator through their time at Little  
3 Grassy. That place changes lives. I cannot  
4 stand by and let this place be harmed because of  
5 a company's pursuit of profit at the expense of a  
6 beautiful natural resource.

7 As a mother and a person of faith, I  
8 must speak out about potential harm to my  
9 children and my neighbor's children. As a  
10 southern Illinois resident, I must ask you to  
11 consider the impact of this mine discharge on our  
12 shared land, air and water and the people and the  
13 wildlife that are sustained by it. As an  
14 environmental justice advocate, I urge you to  
15 assure that communities are not abandoned by  
16 polluters who refuse responsibility for their  
17 pollution should a disaster occur or a bankruptcy  
18 occur. Please consider cumulative impacts of  
19 pollution on vulnerable communities and on the  
20 plants and animals that call the Big Muddy River  
21 their home.

22 You have a chance to assure safe  
23 drinking water for my children and your children  
24 and the next generation to come. Please do not

1 approve this permit. Thank you for hosting this  
2 hearing.

3 HEARING OFFICER: We are out of time  
4 for this evening. If you did not get a chance to  
5 speak, please submit your comments to the Agency  
6 in writing as directed in the public notice.  
7 There are copies of the public notice at the  
8 registration desk if you don't have one;  
9 otherwise, you can find it on our web page. Any  
10 written comments submitted will be included in  
11 the record and reviewed by the Agency as the  
12 responsive summary is prepared. As we bring this  
13 hearing to a close, I need to remind everyone  
14 that the record in this matter closes on  
15 January 17, 2020. You can send any comments to  
16 the attention of Barb Lieberoff as noticed in the  
17 public notice or the website as provided in the  
18 public notice. The repository of documents for  
19 the permitting action is available at Illinois  
20 EPA's office. There are other additional  
21 documents that have been referenced here tonight  
22 as being recently received by the company. You  
23 can obtain those through a FOIA request to the  
24 Illinois EPA. That can be done through our

1 website. You can also contact the Agency if you  
2 need help in crafting your request. I know  
3 someone referenced tonight that one request was  
4 denied, and a second request was worded  
5 differently and you received responsive  
6 documents. If you're concerned about receiving  
7 the documents that you're seeking, please feel  
8 free to contact the Agency, and we will do what  
9 we can to help you craft a query so you can be  
10 provided those documents as quickly as possible  
11 in order to help you develop any additional  
12 comments or questions that you may have regarding  
13 the draft permit.

14 Thank you for your participation and  
15 your cooperation tonight. The time is 9:34 p.m.,  
16 and this public hearing is adjourned.

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1 STATE OF ILLINOIS )  
 ) SS  
2 COUNTY OF FRANKLIN )

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4 REPORTER'S CERTIFICATE

5 I, Lori A. Rogers, do hereby certify:

6

7 That the said proceeding was taken  
before me at the said time and place and was  
taken down in shorthand writing by me;

8

9 That I am a Certified Shorthand Reporter  
of the State of Illinois, that the said  
10 proceeding was thereafter under my direction  
transcribed into computer-assisted transcription,  
and that the foregoing transcript constitutes a  
11 full, true, and correct report to the best of my  
ability of the proceedings which then and there  
12 took place.

13 IN WITNESS WHEREOF, I have hereunto  
subscribed my hand this 6th day of January, 2020.

14

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17 \_\_\_\_\_  
Lori A. Rogers, CSR/Notary Public  
IL CSR #084-002872

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# **Williamson Energy, LLC Pond Creek Mine No. 1**

## **National Pollutant Discharge Elimination System (NPDES) Permit Responsiveness Summary**

Regarding

December 18, 2019 Public Hearing

Illinois Environmental Protection Agency  
Office of Community Relations  
April 15, 2022



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**Final April 15, 2022**

Illinois Environmental Protection Agency

Williamson Energy, LLC  
Pond Creek Mine No. 1  
NPDES Permit  
Permit Number IL0077666

### **Illinois EPA Permit Decision**

On April 15, 2022, the Illinois Environmental Protection Agency (Illinois EPA, IEPA, or Agency) approved a NPDES permit for Williamson Energy, LLC Pond Creek Mine No. 1.

The draft NPDES permit was public noticed on July 12, 2019 and placed on the Illinois EPA public notice webpage. On October 30, 2019, the hearing notice was posted and on January 13, 2020, the hearing transcript was posted. These documents are available at (enter IL0077666 into the search above the "Posting Date"):

<https://www2.illinois.gov/epa/public-notices/Pages/npdes-individual-notices.aspx>

The following changes have been made to the draft permit that was placed on public notice on July 12, 2019:

- 1. Special Condition No. 14 was added to require the permittee to install and operate a 1.0 million gallons per day (MGD) reverse osmosis (RO) unit by December 31, 2023:**
  - a. The RO permeate (treated water) will discharge through Outfalls 001-008.**
  - b. The RO reject will discharge to the Big Muddy River through Outfall 011.**
- 2. Proposed Outfalls 009 and 009ES have been removed due to the impaired status of Pond Creek.**
- 3. Special Condition No. 15 has been added to require the following conditions relative to Outfall 011:**
  - a. Posting of signs on the bank of Big the Muddy River to notify the public of the existence and location of Outfall 011.**
  - b. Chloride and conductivity monitoring of Outfall 011 effluent and in the Big Muddy River (upstream and downstream) to confirm and ensure validity of calibration curves. Calibration curves are also required to be approved periodically by the Agency as outlined in the NPDES permit condition No. 15.**
  - c. A requirement that sulfate, iron (dissolved) and chloride monitoring of Outfall 011 effluent be performed three (3) times per week when the outfall is discharging.**
  - d. Requires a mussel survey and a macroinvertebrate survey approximately one year following initial discharge from Outfall 011.**
  - e. Verifies the mixing zone and zone of initial dilution (ZID) for the multi-port diffuser.**
  - f. Specifies precipitation event and Big Muddy River flow condition restrictions for discharges from Outfall 011.**



- iii. **When the iron (dissolved) samples are 40 percent above the iron (dissolved) water quality standard in more than 3 of the samples taken within the month.**
  - iv. **When the copper samples are 20 percent above the copper water quality standard in more than 3 of the samples taken within the month.**
  - v. **When the nickel samples are 20 percent above the nickel water quality standard in more than 3 of the samples taken within the month.**
8. **The NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.**

### **Pre-Hearing Public Outreach**

The hearing notice was mailed or e-mailed to:

- Williamson & Franklin County officials;
- Municipal officials in Johnston City;
- Local, state and federal elected officials;
- Those on the NPDES public notice list; and
- Those who have requested to be notified of Bureau of Water hearings.

### **December 18, 2019 Public Hearing**

Hearing Officer Christine Zeivel opened the hearing on December 18, 2019, 6:00 p.m. at Rent One Park Diamond Club, 1000 Miners Drive, Marion, Illinois. Comments and questions were received from the public. Hearing Officer Christine Zeivel closed the hearing at 9:34 pm on December 18, 2019.

Illinois EPA personnel were available before and during the hearing to meet with elected officials, news media, and concerned citizens. Approximately 185 people representing the permittee and environmental groups participated in or attended the public hearing. A court reporter prepared a transcript of the public hearing, which was posted January 13, 2020 on the Illinois EPA website. The hearing record remained open through January 17, 2020. The Illinois EPA hearing panel included the following Agency staff:

Christine Zeivel, Hearing Officer, Office of Community Relations  
Iwona Ward, Permit Section, Bureau of Water  
Darin LeCrone Permit Section, Bureau of Water  
Scott Twait, Standards Section, Bureau of Water  
Stefanie Diers, Division of Legal Counsel

### **Background of Williamson Energy, LLC Pond Creek Mine**

The Illinois EPA Bureau of Water prepared a draft NPDES permit for Williamson Energy, LLC, whose corporate address is P.O. Box 300 Johnston City, Illinois 62951. The Pond Creek Mine is located four miles east of Johnston City, Illinois in Williamson and Franklin Counties.

Illinois EPA held this hearing for the purpose of receiving comments on the draft permit prior to taking final action on the permit application. Issues relevant to this proceeding included the antidegradation analysis and the applicant's compliance with the permitting requirements of the federal Clean Water Act and Subtitle C of Title 35 of the Illinois Administrative Code.

The applicant proposes additional surface facilities area to an existing underground coal mine (SIC 1222). Mine operations result in the discharge of alkaline and acid mine drainage. The following proposed modifications were incorporated into the public noticed Permit renewal: 1) one (1) new outfall designated as Outfall No. 011; 2) various mining operation and drainage control plan revisions; 3) 229.78 acres incorporated for new Refuse Disposal Area (RDA) No. 3; 4) 70.7 acres incorporated for the pipeline to the Big Muddy River; 5) 145.32 acres for various incidental boundary revisions (IBRs) for additional permit area; 6) bi-annual metals monitoring of discharges from Outfall Nos. 006, 007, 008, and 011; and 7) previously issued State Construction and Operating Permits (Subtitle D Permits).

## Responses to Comments, Questions and Concerns

Comments, questions, and concerns are in regular text, and Illinois EPA responses are in bold text.

### NPDES Permit

1. Why are they not required to monitor as close as possible to the edge of the designated mixing zone, which is the point of compliance?

**The NPDES permit requires the discharger to calculate the concentration at the edge of the mixing zone. Additionally, in order to verify the calculations at the edge of the mixing zone, the permit requires the discharger to install a conductivity meter downstream of the mixing zone. To address this concern, the permit has been modified to require the downstream continuous monitor to be located within 10 feet of the edge of the mixing zone.**

**Special condition 15 (b)(ii) of the NPDES permit requires quarterly monitoring for discharge rate, sulfate, chloride and hardness at a location downstream where complete mixing of the receiving stream has occurred. However, this monitoring is not for compliance purposes, but to get sufficient data to calculate the sulfate WQS for the next permit cycle.**

2. Why is Pond Creek Mine not included in the draft permit? It's a polluted tributary.

**See response to question #47.**

3. What recourse do citizens have when they see a violation occurring and assume that risk of making a complaint, yet the polluters are allowed to bully us, the citizens, in silence? Are off-hour discharges a reoccurring problem with this mine? Why would there be no discharge monitoring report (DMR) since March of 2019?

**If a citizen has any information about a violation occurring, they may call the Illinois EPA office at 618-993-7200 and report a complaint anonymously.**

**Based on the information that the Agency has, it is not believed that off-hour discharging is an issue. The Illinois EPA consistently receives notifications from the mine of discharge events where effluent may exceed permitted limits as required by the facility's NPDES permit. The Agency is currently proceeding through the enforcement process for effluent excursions.**

**The NPDES permit does not restrict discharges to certain times of day since many discharges are in response to rainfall events which may occur at any time. Mine pumpage is generally from small water collection pits located within the underground operation that fill with groundwater and/or operational water and**

**must be pumped to the surface. For safety of workers and mine operations, this pumpage may be necessary at any time of day as groundwater enters the underground operation on a continual basis, 24-hours a day.**

**DMR data may be obtained under the Freedom of Information Act (FOIA) by visiting the Agency website at**

**<https://www2.illinois.gov/epa/foia/Pages/default.aspx> to file an electronic request for information. Additionally, the DMR data can be found by going to the Enforcement and Compliance History Online (ECHO) system website, please see the response to question #11. For the response as to no discharge being reported since March of 2019, please see the response to question #22.**

4. Does the Illinois EPA evaluate the company monitoring numbers they are sending or is the Agency seeing it live as it is being imputed? How is it being reported to you?

**Monitoring results are reported on DMRs which are submitted quarterly to the Agency. The Agency runs monthly compliance reports using the Integrated Compliance Information System (ICIS)/ECHO to detect Significant Non-Compliance (SNC) of NPDES permits. ICIS/ECHO automatically detects violations such as DMR non-receipt, effluent limit violations, or delinquent schedules or reports. If a violation is identified as SNC, the Illinois EPA initiates the appropriate enforcement action, pursuant to Section 31 of the Illinois Environmental Protection Act (Act), to resolve the SNC violations.**

5. The Sugar Camp Mine has had a permit approved to build a similar pipeline to the Big Muddy River. Do you know if that pipeline will be constructed?

**Although outside the scope of this responsiveness summary, the following is provided for informational purposes only. The initial Sugar Camp application for the pipeline to the Big Muddy River received in December 2019 was deemed incomplete by IDNR Office of Mines and Minerals (OMM). The Applicant was notified of this determination and provided with a summary of additional information required for the permit to be deemed complete and the IDNR/OMM review to proceed. It is the Agency's understanding that at this time the OMM application has been deemed complete and the review is underway. Thus, a permit for the construction of the pipeline at Sugar Camp Mine has not yet been issued.**

6. Why isn't Williamson Energy required to put up a bond for repairing damage that may be caused by their operations, that is damage to the Big Muddy River wildlife and the people who depend on the Big Muddy for recreation?

**All bonding requirements are regulated by IDNR OMM in accordance with 62 Ill. Adm. Code Part 1800.**

7. In 2004, the Big Muddy River Total Maximum Daily Load Report (TMDL) states that the Big Muddy River is compromised and impaired in part for mining operations. The 2019 report again stated the same thing. Abandoned coal mines should be identified in addition to other mining activities which contribute to manganese and sulfate concentrations, which is exactly what the violations are for this company. Is the Illinois EPA going against its own implementation plans by considering granting a permit for a pipeline which will infuse the river with more elevated levels of chlorides, sulfates, manganese and other pollutants? Does this not go against the Clean Water Act?

**The Big Muddy River TMDL Report (October 2004) evaluated sulfate and manganese impairments in the Big Muddy River (waterbody segment IL\_N-12) and developed TMDLs based on the water quality standards (WQS) of 500 mg/L for sulfates and 1.0 mg/L for manganese. These WQS have been modified by the Illinois Pollution Control Board (IPCB or Board) since then.**

**The IPCB promulgated the manganese WQS, based on hardness, in R2011-18 on November 15, 2012, and corrected for “dissolved” manganese in R2011-18(B) on May 16, 2013. The United States Environmental Protection Agency (USEPA) approved the manganese WQS on May 28, 2013.**

**The IPCB also promulgated the sulfate WQS, based on hardness and chloride, in R2007-009 on September 4, 2008. USEPA approved the sulfate WQS and removal of the total dissolved solids (TDS) WQS on March 19, 2009.**

**The Illinois Environmental Protection Act (Act) and the Board regulations require that the Agency consider the current promulgated WQS in issuing NPDES permits.**

**Consistent with R2011-18(B), based on the critical hardness of 145 mg/L at Ambient Water Quality Monitoring Network (AWQMN) station N-12, the Agency calculated an acute and chronic WQS for manganese at 5.62 mg/L and 2.39 mg/L, respectively.**

**In drafting the permit, the Agency reviewed the water quality data for waterbody Segment N-11 and found that, from January 2000 to January 2020, there have been no exceedances of the updated WQS for manganese. The highest manganese result of 2.56 mg/L was taken on September 13, 2010. The second highest manganese result of 1.5 mg/L was taken on July 26, 2007. The NPDES permit has a manganese limit at the effluent standard of 2.0 mg/L as a 30-day average and 4.0 mg/L as a daily maximum, therefore, the effluent will meet the current manganese WQS.**

**Similarly, consistent with R2007-009, based on the critical hardness of 145 mg/L and an average chloride of 38.33 at AWQMN station N-12, the Agency calculated a WQS at 1,312 mg/L for sulfate.**

In drafting the permit, the Agency reviewed the water quality data for waterbody Segment N-11 and found that, from January 2000 to January 2020, there have been no exceedances of the updated WQS for sulfate. The highest sulfate result of 809 mg/L was taken on September 30, 2003. The second highest sulfate result of 591 mg/L was taken on October 21, 2008.

The Upper Big Muddy TMDL Report (May 2019) evaluated fecal coliform, sedimentation/siltation, and sulfates for Waterbody Segment IL\_N-11. The TMDL set a waste load allocation on those facilities that discharge effluents with fecal coliform. The discharge from Outfall 011 is below the water quality sampling station Waterbody Segment IL\_N-11. Further, as the discharge from Outfall 011 is not a source of fecal coliform, no limit for fecal coliform was added in the permit.

The May 2019 TMDL prepared a load reduction strategy to address the sedimentation/siltation impairment, as there are no numeric WQS for these constituents. The Load Reduction Strategy (LRS) identified a target of 32.2 mg/L for TSS as an average concentration. The NPDES permit has been modified to incorporate a limit of 32.2 mg/L for Outfall 011, applied as a yearly average.

Further, data analysis as part of the Stage 3 TMDL/LRS preparation has indicated that sulfate impairment may not currently exist. Sulfate is not listed as an impairment in the 2018 Integrated Report.

Based on the discussion above, the sulfate, chloride and TSS limits in the permit does not conflict with the 2004 and 2019 TMDLs.

As part of the Upper Big Muddy TMDL Report (May 2019), an Implementation Plan titled - Watershed Implementation Plan To Achieve the TMDLs and Load Reduction Strategy in the Upper Big Muddy River Watershed has been developed and may be found in the last pages of the report. The information is available at: <https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/reports.aspx>

8. In this decision-making has there been platforms made for the consideration of the indigenous people's values of this area?

The Illinois EPA is committed to protecting the health of the citizens of Illinois and its environment as well as promoting environmental equity. To this affect, the Illinois EPA had NPDES permit ILR10BK23 related to the 12-mile waterline project for Williamson Energy, reviewed by the State Historic Preservation Office (SHPO). SHPO reviewed the permit with the premise in protecting cultural issues, historic, architectural, and archaeological sites. The Illinois EPA supports the objectives of achieving environmental equity for all of the citizens of Illinois.

9. A lot of the information the Illinois EPA has looked at when making this decision is being compiled by the mining corporation itself. My question is, does the Illinois EPA find this data on its own or with other third parties in regard to the watershed analysis or water monitoring or is most of the data around this decision coming from the mine and what they've collected so far and continue to collect?

**The NPDES permitting program is a federal program delegated to the State. The program is based on the review of a permit application which includes sampling data and other information, provided by the applicant, to fully characterize the wastewater and the proposed discharges. The NPDES program also includes collection of samples by the permittee, and the self-reporting of results by the submission of DMRs to the Illinois EPA. However, in addition to data provided by the applicant/permittee, the Illinois EPA also utilizes data from its AWQMN stations on the Big Muddy River, both upstream and downstream of Outfall 011. The ambient stations are sampled for water quality approximately every six weeks. The ambient data was also utilized in the evaluation, analysis, and determination of applicable NPDES permit limits.**

10. Does the Illinois EPA have any plans to conduct its own analysis? Things like the effluent that comes out and then does the Illinois EPA just do regular analyses and tests further on is its own. Will that be something that the Illinois EPA include as a point in future documents?

**The Agency typically collects samples at NPDES permitted facilities during routine mine inspections. These samples are analyzed by either the Agency laboratory or an outside third-party laboratory. IDNR also inspects the sites and periodically collects samples.**

11. Does the Illinois EPA do any monitoring at all, or does the coal mine do all of the monitoring? The data that is collected by the coal mine, does the public have access to this information as well, specifically if something were to go wrong with the equipment?

**Please refer to the response to Item No. 10 above regarding Illinois EPA and IDNR monitoring of mine discharges.**

**The public has access to all DMR data under the FOIA. Additionally, the data can be found by going to the ECHO website:**

**<https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download> and clicking on the date range to change and then entering "IL0077666" into the NPDES ID box. After pressing "Submit", the website will open an Excel worksheet with the data.**

12. Does the Illinois EPA consider the history of the permit compliance before approving new NDPEs permits? If not, why?

**As a general rule, the Illinois EPA does not consider the enforcement-related history of an applicant as part of the permit review process. This is because the structure of the Act, as revealed in its provisions, divides permitting and enforcement functions into separate programs, although there are limited exceptions that will be discussed later. The Act provides for a state-wide program that is aided by private remedies, namely, the enforcement provisions found at Titles VIII and XII, to hold polluters responsible for the harm that they cause.**

**Civil enforcement can be brought through a filing of a complaint in a circuit court or with the Board against any person that violates the Act, Board regulations or a permit. Legal actions can be initiated by state prosecutorial officials or by any person through a citizen's suit. Such cases can involve extensive discovery proceedings, pre-trial procedures, and eventually either a settlement or a trial (or evidentiary hearing) to determine liability and requested relief (civil penalties, injunction, cease and desist, etc.) sought in the complaint. A complainant bears the burden of proof in a civil enforcement action.**

**On the other hand, permitting programs are codified at Title X of the Act and in the Board's implementing regulations, including 35 Ill. Adm. Code Part 309 governing (states NPDES) permits. These requirements assure that the permit review is conducted as a record proceeding, which is part of an intricate administrative continuum between the Illinois EPA and the Board. Under Section 39(a) and Part 309, the Illinois EPA reviews an application for an NPDES permit according to a formal standard of issuance and permit content requirements, as discussed above, and other rules of procedures.**

**If an applicant appeals an agency decision to deny or issue the permit, the Board acts as an overseer to determine whether the permit decision, based exclusively on the record prepared by the Illinois EPA, is supported by the relevant standard of administrative review. The burden of proof in a permit appeal is on the applicant and because the review is based only on the record assembled by the Illinois EPA, discovery proceedings are usually limited. Other procedures not addressed by the Act or implementing regulations may also be relevant to the Illinois EPA's permitting role. This includes procedural due process implications outlined by appellate court rulings beginning nearly forty years ago.**

**A seminal case is Martell v. Mauzy, which laid the groundwork for later recognition that the programs are separate. The federal district court decision held that the Illinois EPA's denial of an operating permit based on "putative" (or alleged) violations required a pre-denial hearing by the Illinois EPA, as opposed to the usual post-decision appeal procedures before the Board, because it**

deprived the applicant of recognized liberty interests protected by procedural due process. Other cases followed, establishing the basic principles that have frequently been cited by the Illinois EPA at informational permit hearings and in responsiveness documents for many years. The Illinois Third District Appellate Court affirmed the Pollution Control Board's decision that a special waste stream permit was improperly denied on the grounds of alleged violations cited from a parallel pre-enforcement action. In citing to the Board's opinion that the Act's procedures for permitting and enforcement are "separate and distinct," the appellate court affirmed the Board and upheld the latter's inference that the permit denial process was "improperly" used in lieu of enforcement.

Also, see response to question #16.

13. How will the unfiltered water discharged into the Big Muddy be filtered? By whom and how is the discharge monitored? Monitoring needs to occur at all times to assess chemical discharge.

The wastewater will not be filtered, however, the wastewater will be treated by a settling basin before being discharged to the Big Muddy River. The settling basis is an earthen structure using sedimentation to remove settleable matter and turbidity from wastewater.

The Water Holding Cell will receive decant water from the RDA, underground mine pumpage, and ultimately, reject from the RO system and will discharge to the Big Muddy River via Outfall 011.

The RDA as well as the Water Holding Cell will act as a settling basin to settle out suspended solids. Monitoring of the discharge will be performed by the Permittee in accordance with the NPDES permit. In addition, as indicated in response to question #10, the Agency as well as IDNR/OMM may monitor this discharge during site inspections.

The renewed and modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling of Outfall 011 for the parameters listed in Special Condition No. 18 of the NPDES permit. These parameters are: arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.

In addition, for Outfall 011, in order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and

**effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.**

**Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.**

**Special Condition No. 16 also requires increased monitoring for sulfate, nickel, copper, and iron (dissolved) to three times per week for Outfall 011 within 10 feet downstream of the edge of the mixing zone.**

14. Can the Illinois EPA be held accountable by law for allowing a pipeline to discharge as in mine drainage with elevated concentrations of numerous pollutants into a river that is currently listed as impaired and is also a candidate for Wild and Scenic River Designation?

**Under the Illinois Environmental Protection Act, the Illinois EPA is responsible for the implementation of the NPDES permit program to ensure compliance with applicable standards and requirements. As discussed below, the NPDES permit has terms and conditions to ensure that the discharge from this mine facility will be protective of the existing uses of the Big Muddy River and Pond Creek.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**The unnamed tributaries of Pond Creek and Pond Creek itself are not listed as biologically significant streams in the 2008 IDNR Publication Integrating Multiple Taxa in a Biological Stream Rating System, nor are the unnamed tributaries of Pond Creek given an integrity rating in that document. However, Pond Creek itself is rated a "C" stream approximately 7.0 miles downstream of the outfalls.**

**The Big Muddy River is not listed as a biologically significant stream in the 2008 IDNR Publication Integrating Multiple Taxa in a Biological Stream Rating System, nor is it given an integrity rating in that document.**

**Please see the response to question #7 as to the Big Muddy River being listed as impaired.**

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**The federal regulations at 40 CFR 131.13 authorize states to use mixing zones and zones of initial dilution to implement WQS. Illinois has adopted mixing zones and zones of initial dilution WQS located at 35 Ill. Adm. Code 302.102.**

**In the zone immediately surrounding an outfall, both the acute and the chronic criteria may be exceeded, but the acute criterion must be met at the edge of this zone, which is often referred to as the acute mixing zone or the ZID. The acute mixing zone is sized to prevent lethality to passing organisms in order to protect the designated use of the waterbody as a whole. In case of the mixing zone, which is often called the chronic mixing zone, the chronic criterion may be exceeded, but the acute criterion must be met. The chronic criterion must be met at the edge of the chronic mixing zone. The chronic mixing zone is sized to protect the designated use of the waterbody as a whole.**

**Based on the above, the Agency has made a determination that all existing uses will be protected.**

15. How many more violations have occurred since 2017? How many violations in total does Williamson energy have? Have the impacts of these violations on aquatic life been assessed?

**27 total effluent violations have occurred since 2017. Williamson Energy has a total of 78 effluent violations from July 1, 2005 through September 30, 2021.**

Any potential impacts or affects to the aquatic life in the receiving stream would be noted and/or determined during the Agency's routine stream sampling. The Big Muddy River basin is sampled by the Illinois EPA and the IDNR as part of the Intensive Basin Survey (IBS) program, a cooperative sampling effort that routinely collects a variety of samples including fish and macroinvertebrate assemblages. IBS sampling is conducted every five years and has also historically included mussel surveys as resources allow. While the next IBS sampling year for the Big Muddy River basin is 2023, this river system is sampled approximately every six weeks, via the AWQMN or ambient sampling, for water chemistry.

Also, additional biological sampling can be conducted as needed. Big Muddy River sampling locations included in these programs include stations upstream and downstream of the proposed Outfall 011, which is downstream of Route 149. Illinois EPA sampling (IBS and AWQMN) is conducted by the Illinois EPA's Surface Water Section. For the IBS sampling, river levels impact the ability to conduct biological sampling. For example, only fish sampling was possible in 2018 on the mainstem portion of the Big Muddy River, no macroinvertebrate sampling was possible on the mainstem that year (bug samples were taken at Pond Creek on Liberty School Road, Station NG-05). The closest upstream sampling point on the Big Muddy River is on Route 149 west of Plumfield (Station code is N-11). The nearest downstream sampling point on the Big Muddy River is on Route 127 in Murphysboro (Station code is N-12).

The results from this Agency sampling program are used to determine stream impairment. There are five segments downstream (IL\_N-11, IL\_N-17, IL\_N-16, IL\_N-12, and IL\_N-99) and each has been assessed as follows:

- The Big Muddy River, Waterbody Segment, IL\_N-11, is listed on the 2018 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as dissolved oxygen, iron, sedimentation/siltation, and total suspended solids, primary contact use with potential cause given as fecal coliform, and fish consumption use with potential cause given as mercury and polychlorinated biphenyls (PCBs). Aesthetic quality use is fully supported.
- The Big Muddy River, Waterbody Segment, IL\_N-17, is listed on the 2018 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as sedimentation/siltation and total suspended solids and fish consumption use with potential cause given as mercury.

- The Big Muddy River, Waterbody Segment, IL\_N-16, is listed on the 2018 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as dissolved oxygen and sedimentation/siltation and fish consumption use with potential cause given as mercury.
- The Big Muddy River, Waterbody Segment, IL\_N-12, is listed on the 2018 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as dissolved oxygen and total suspended solids and fish consumption use with potential cause given as mercury. Aquatic life and primary contact uses are fully supported.
- The Big Muddy River, Waterbody Segment, IL\_N-99, is listed on the 2018 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential causes given as dissolved oxygen, phosphorus, and total suspended solids and fish consumption use with potential cause given as mercury. Aquatic life use is fully supported.

To address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

16. Are there any Illinois EPA regular regulations or stipulations under the Clean Water Act regarding granting new permits or additions to existing permit when the company requesting them have an extensive history of violations?

Notably, two exceptions originate from statutory amendments by the Illinois General Assembly to the Act in 2003 in P.A. 93-575 (93rd General Assembly). The amendments introducing these exceptions to Section 39(a) of the Act did not eclipse the existing framework of the Act or its implementing regulations, as much of that construct was left untouched. The legislature also did not overrule existing caselaw and, as such, the changes simply memorialized existing caselaw and other provisions of the Act that existed at the time.

The first exception created by the amendments to Section 39(a) allows for Agency discretion in considering “prior adjudications of noncompliance” with the Act for environmental releases by an applicant. The Illinois EPA only uses this authority rarely, in large part, because judicial (or quasi-judicial) rulings based ‘on the merits’ of an environmental enforcement case are uncommon. The bar set by these criteria is high, as it is perhaps meant to protect against a potential deprivation of the same interests claimed by the applicant in *Martell v.*

**Mauzy. Based on institutional knowledge, the Illinois EPA has used analogous, but more specific authority found in Section 39(i) in a handful of prior occasions.**

**The other exception introduced in the 2003 amendments allows for agency discretion in imposing reasonable conditions relating to a “past compliance history” with the Act as is necessary to correct, detect, or prevent “noncompliance.” See, 415 ILCS 5/39(a). The Illinois EPA does not routinely employ this authority, as it is also prudently viewed to hold a high bar by requiring demonstrated, not merely alleged, noncompliance. However, the Illinois EPA will sometimes incorporate relevant requirements from a final adjudication into an NPDES permit, often doing so at the request of a respondent who has been directed to undertake a permitting change as a result of a settlement.**

**The Agency has included a Special Condition to address this comment. Special Condition No. 16 in the final permit requires that the discharge from Outfall 011 cease under certain conditions, such as: 1) when the continuous chloride data (as measured by conductivity) is 40 percent above the chloride WQS more than 20 percent of the time; 2) when the sulfate samples are 40 percent above the sulfate WQS in more than three of the samples taken within the month; 3) when the iron (dissolved) samples are 40 percent above the iron (dissolved) WQS in more than three of the samples taken within the month; 4) when the copper samples are 20 percent above the copper WQS in more than three of the samples taken within the month; or 5) when the nickel samples are 20 percent above the nickel WQS in more than three of the samples taken within the month.**

17. My concern is the contaminant discharges may not be adequately controlled based on the described sampling plans described in the special conditions section.

**The monitoring of the applicant’s effluent was placed in the NPDES permit to adequately characterize the effluent and to ensure that WQS will be met in the receiving stream. Since the NPDES permit was public noticed, the following changes have been made to the NPDES permit:**

**Special Condition No. 15 of the draft permit has been modified to reduce the maximum chloride concentration for Outfall 011 from 12,000 mg/L to 5,000 mg/L.**

**The NPDES permit defines the mixing zone and ZIDs for each of the ports. The ZID for Ports 1 and 2 has a length of 4.5 feet by a width of 1.12 feet each. The ZID for Port 3 has a length of 5.68 feet by a width of 1.38 feet. The ZID for Port 4 has a length of 7.64 feet by a width of 1.97 feet. The ZID for Port 5 has a length of 9.18 feet by a width of 2.23 feet. The mixing zone has a length of 46 feet by a width of 25 feet.**

**Special Condition No. 16 in the final permit requires that the discharge from Outfall 011 cease under certain conditions, such as: 1) when the continuous**

chloride data (as measured by conductivity) is 40 percent above the chloride WQS more than 20 percent of the time; 2) when the sulfate samples are 40 percent above the sulfate WQS in more than three of the samples taken within the month; 3) when the iron (dissolved) samples are 40 percent above the iron (dissolved) WQS in more than three of the samples taken within the month; 4) when the copper samples are 20 percent above the copper WQS in more than three of the samples taken within the month; or 5) when the nickel samples are 20 percent above the nickel WQS in more than three of the samples taken within the month.

Special Condition No. 16 also requires increased monitoring for sulfate, nickel, copper, and iron (dissolved) to three times per week for Outfall 011 within 10 feet downstream of the edge of the mixing zone.

To address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

The renewed/modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfalls 006, 007, 008, and 011 for the parameters listed in Special Condition No.18 of the NPDES permit. These parameters are: arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.

At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and cadmium, copper, nickel, and zinc at Outfall 008.

The permit includes additional effluent sampling, for Outfall 011, for sulfate, iron, and chloride will be sampled three times per week.

Additionally, the NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

The permit has a condition that the mussel and invertebrate survey on the Big Muddy River will be repeated one year after commencement of the discharge.

**Additionally, the NPDES permit has been modified to incorporate a limit of 32.2 mg/L for Outfall 011 applied as a yearly average.**

**The permit includes monitoring or limits for all parameters that could be present in the mine discharge.**

18. Several documents have said the pipeline is only for 10 years and then it will be removed. Is this the projected end of date of the coal seam and mine closure?

**Illinois EPA does not have any documents from the applicant indicating a 10-year service life of this pipeline.**

- a.) Who is going to pay for the removal of the pipeline?

**IDNR OMM Land Reclamation Division requires a bond for all approved reclamation plans. The surface disturbance operations for this corridor is approved as OMM Permit No. 456.**

- b.) How many inspections has the Illinois EPA completed since the mine became operational?

**The Agency has 17 inspection reports on file for the Pond Creek mine.**

- c.) How many field inspectors does the Marion Office currently have?

**The Agency has four field inspectors from the wastewater program.**

- d.) What measures of enforcement has been taken on this issue with the Company? (this question is getting at citizens being bullied; samples should be taken on the weekend; off hour discharge complaints. He also cites to a report that says despite daily influent of 2.7 million gallons of underground water seeping into the mine, there have been no discharge monitoring reports since March 2019 and the report goes on to say that the mass water balance of influent water and discharged water does not appear consistent.)

**Illinois EPA has referred Williamson Energy, LLC to the Illinois Attorney General's Office based on a February 6, 2020 violation notice for violations observed during a compliance inspection including the discharge of contaminants into receiving streams from outfalls at Pond Creek in violation of effluent and WQS. On May 25, 2021, Illinois EPA issued a violation notice to Williamson Energy, LLC following numerous bypass notices and subsequent inspections in which Illinois EPA inspectors observed the discharges of contaminants into receiving streams from outfalls at Pond Creek in violation of effluent and WQS. As there is an active enforcement case that is ongoing, the Agency cannot further elaborate on the details of the enforcement case.**

**Regarding the water balance, please see the response to question #18(e).**

- e.) The report cites under Monitoring Violations “Analysis not conducted of discharges, inadequate monitoring frequency of sampling, invalid/unrepresented samples as required by the permit. How is that a mine requesting a new permit to dump 2.9-3.5 million gallons per day of mining waste has no record of discharges for months at a time, no record of discharge release, and no water sampling data on public record? Where is the mine waste going every day?”

**Williamson Energy is pumping approximately 2.7 million gallons of mine water daily to the surface collection system. The estimated 2.7 million gallons of water pumped from the mine daily is only a general estimate. Water pumped from underground is conveyed via pipelines to Refuse Disposal Area No. 3 (IDNR Permit No. 417). Water from the mine is also used at the preparation plant and underground operations.**

**The facility has increased the crest elevation of the Refuse Disposal Area, creating additional water holding capacity. The water level on January 3, 2018 was at elevation 486.0 feet and on October 28, 2021, the water level was at elevation 543.2 feet. This is an increase of 57.2 feet of elevation, which equates to approximately 1,800,000,000 total gallons of additional storage. Due to the excessive water flowing into the underground operations, which could become a safety issue for the mine workers, the facility has been storing the water on-site. The facility has acknowledged having excess water at their operation and has been working on the proposed discharge to the Big Muddy River as a long-term solution.**

19. Why would Illinois EPA issue a permit to a company going into a bankruptcy? What is the financial status of Williamson Energy? Would they be able to ameliorate or mitigate any harmful events? Does the corporation and the Illinois EPA expect public funds and the environment to absorb the costs?

**IDNR’s mine permit considers the financial assurance of the mining company in granting its permit. The Act or Board regulations do not provide the Agency with such authority.**

**Under the Act, the Illinois EPA is required to issue a permit to an applicant upon proof that the proposed facility or equipment will not cause a violation of the Act or promulgated regulations. See, 415 ILCS 5/39(a). This standard is a mandatory one, expressed in the language of the provision as a “duty” that is imposed upon the Illinois EPA. While Agency deliberation of certain aspects of the permit may be grounded in the exercise of discretion, the broader legal**

**standard governing permit issuance or denial limits the discretion of the Illinois EPA.**

**In this case, the applicant provided data to show that its discharge will comply with all applicable WQS. The NPDES permit, as drafted, contains limits and conditions to ensure that the discharge meets the applicable WQS, which are protective of the existing uses of the Big Muddy River. The Illinois EPA finds that the legal standard noted above has been met. Nothing in the record, including the public comments on the draft permit, adduces otherwise.**

**The Agency doesn't expect public funds and environment to absorb the costs. All bonding requirements are regulated by the IDNR OMM in accordance with 62 Ill. Adm. Code Part 1800.**

20. During spring Big Muddy pushes water back into our fields and wastewater is mostly salt which creates dead spots. Who will be responsible for decline in crop yield?

**The Agency has evaluated the proposed discharge to the Big Muddy River, and has determined that the discharge will not cause an exceedance of WQS outside of the mixing zone, and will not be of sufficient volume to have an adverse effect on flooding which may already be occurring on a seasonal basis.**

**The NPDES permit defines the mixing zone. The mixing zone has a length of 46 feet by a width of 25 feet.**

**Additionally, the NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.**

21. Does IDNR OMM inspect or cover the same regulations the Illinois EPA does?

**Although some overlap can be found in the IDNR OMM and Illinois EPA, Mine Pollution Control Program (MPCP) regulations, the Agency regulates activities that could generate refuse, result in a discharge, or potentially cause water pollution, including the regulation of discharges to surface waters from mining operations. IDNR OMM regulates exploration, extraction, site reclamation and related mining activities. The Illinois EPA regulations may be found in 35 Ill. Adm. Code, Subtitle D: Mine Related Water Pollution, Parts 401 through 407. These regulations cite, incorporate, and utilize various other state and federal regulations for the permitting and management of coal mine related facilities.**

**The IDNR OMM regulations are contained in 62 Ill. Adm. Code 1700 through 1850.**

22. Why is data incomplete? How does one know if the polluter has exceeded the allowable limits if the EPA are not requiring complete reporting of data?

**The data is not “incomplete.” During the months with no data, the facility had no discharge during those months. When “No Discharge” is reported on the DMR, it means that no discharge occurred during that month.**

23. Can you explain the excessive limits and lack of regulation of minerals that are cumulative and in large amounts to toxic life?

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and cadmium, copper, nickel, and zinc at Outfall 008.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**Special Condition No. 15 of the draft permit has been modified to reduce the maximum chloride concentration for Outfall 011 from 12,000 mg/L to 5,000 mg/L.**

**Since the discharger is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected.**

24. Please explain how, in a matter of days the Company's status on the ECHO site changed from yellow to blue.

**Yellow on ECHO indicates either a Reportable Non-Compliance (RNC status) or a Non-Reportable Non-Compliance. (NON-RNC). These types of violations are considered minor/Category 2 violations and are either paperwork violations or a minor effluent exceedances of the permit limit. Category 2 violations are resolved automatically by ICIS logic, which is based on the resolution criteria contained in USEPA's NPDES Enforcement Management System EMS – (1989):**

<https://www.epa.gov/enforcement/enforcement-management-system-national-pollutant-discharge-elimination-system-clean>.

ECHO is refreshed weekly. The RNC report runs over the weekend and applies the violation and resolution logic and updates the RNC. This is an automated process. Below is the ECHO link describing the data sources and date extracted date/ and next scheduled extract: <https://echo.epa.gov/resources/echo-data/about-the-data#sources>.

The resolution is usually through submission of the report or when the effluent violations have been resolved.

25. If the Governor cares about the environment, then why has the Illinois EPA referred so few cases to the Attorney General's office, even with all the consistent violations of the mine?

The Agency has and does refer cases to the Illinois Attorney General's Office. Violation Notices, and correction of non-compliance issues related to Violation Notices, are administered by the Illinois EPA pursuant to Section 31 of the Illinois Environmental Protection Act. See 415 ILCS 5/31. With respect to Pond Creek Mine, VN W-2019-50223, was issued on February 6, 2020, for violations found at a site inspection that showed several WQS violations. The resulting violations were for deposited contaminants, discharge of contaminants, offensive conditions, offensive discharge, effluent standards violations, failure to comply with NPDES Permit, and failure to comply with good mining practices. The Illinois EPA has referred these violations to the Illinois Attorney General's Office.

In addition, Violation Notice W-2021-50080 was issued on 5/25/2021 due to numerous unauthorized discharges/bypasses from the Williamson Energy Pond Creek Mine #1's Outfall 006 into the receiving stream resulting in WQS violations. The Illinois EPA either received notification or observed these unauthorized discharges/bypasses from Williamson Energy. The resulting violations were for unpermitted/unauthorized point source discharge, NPDES bypass violations, deposited contaminants, discharge of contaminants, offensive conditions, offensive discharge, effluent standards violations, water quality violations, and failure to comply with good mining practices. Illinois EPA is in the process of referring these violations to the Illinois Attorney General's Office. The significant/chronic DMR effluent violations seen at mainly outfall 006, for Chloride and Sulfate, will be added via a supplemental referral to the Illinois Attorney General Office's existing enforcement action against Williamson Energy.

Also, there was a prior enforcement case before the Board, which is now closed. See People v. Williamson Energy, PCB 2019-85.

## **Groundwater Issues**

26. I have not seen anything at all anywhere that's a solution to this saline water seeping into the mine from an underground aquifer. Why hasn't it been suggested that this saline water could be placed in the depths of the earth with these injection wells?

**The mine infiltration water could be discharged directly to an Underground Injection Control (UIC) well (often referred to as a deep well) if conditions were appropriate for such activity. The injection wells must be installed at extreme depths to ensure they do not affect potential aquifers used for public consumption and into a geologic formation that is capable of receiving excess water.**

**The receiving underground formation at this mine site has a limited amount of volume it can receive instantaneously and long term. As the underground formation is filled with excess water, its acceptance can be diminished. Consequently, multiple wells cannot be installed in close proximity to one another or they will negatively influence one another and restrict flow. In order to completely utilize this technology at Pond Creek mine, it is estimated that nine deep injection wells spaced an adequate distance apart would be needed. Additionally, miles of pipeline conveying water to each individual well. An ultra-filtration system would also be needed to remove any suspended solids from the water prior to injection.**

**At a near-by affiliated mine that operates two deep injection wells, ongoing operation of water disposal has been hampered by excess pressures, scaling of injection tubing, and plugging off the receiving geologic formation. Due to these operational challenges, the wells have been inactive for several years. When injecting during optimal conditions, the wells only accepted a fraction of the amount of water Pond Creek mine would need to dispose of. Because of reasons stated above, Deep Well Injection is an unreliable and impractical alternative given these conditions to dispose of the amount of water infiltrating the Pond Creek mine.**

27. What are the long-term impacts of continual water usage and water withdrawal on nearby communities?

**The community water supply in the area of the mine is a surface water supply, thus not impacted by water usage. The community water supply itself will continue to be able to supply the nearby communities and the mine. The few private wells in the area are generally less than 200 feet in depth. The formation with the saline water is approximately 450 to 600 feet in depth. Any impact of water withdrawal from this depth on the more shallow private wells would be expected to be minimal.**

28. What is Foresight's daily Rend Lake water usage in initial stages of coal production? What does it pay Adena Resources and the State of Illinois for this use? Explain the water contracts and Foresight's use of Tennessee Valley Authority's coal.

**Currently, Sugar Camp, LLC uses Rend Lake water to supplement make-up water for coal processing when necessary. According to the permittee, they have authorization for Pond Creek mine to utilize this source of water as coal processing make-up water; however, Pond Creek mine does not currently use this approved availability of Rend Lake water. Williamson Energy does not mine, control, or have access to Tennessee Valley Authority coal. The State of Illinois does not get paid for water usage; however, it does get reimbursed for operation and maintenance costs of Rend Lake that the state pays to the Army Corps of Engineers. The IDNR Office of Water Resources allocates a set volume of Rend Lake storage that can be utilized for water withdraw (usage). This is done by an agreement between the state and the interested entity for a set maximum water use.**

29. What are the impacts of ongoing groundwater pumping at the mine and the effect of social and economic development in the area?

**The purpose of ongoing groundwater pumping at the mine is to control the amount of water in the mine so that the mine workers can safely operate the mine. Impacts to ground water use in the area are expected to be minimal. Refer to response to question #27 for further explanation on use of groundwater in the area.**

30. In response to the question of why deep injection wells for salty water was not being considered, has Foresight provided numbers to the Illinois EPA to justify assertion? If it comes from saline aquifers why not return it to them instead of dumping surface waters containing life?

**At Foresight's Sugar Camp operation, two underground injection wells were installed – Well 1 in September 2013 and Well 2 in October 2014. The wells operated until January 2017, at which point the wells ceased operating because of operational issues and were not able to utilize the wells. The history of these two wells showed they only accepted, on average 3,750,000 gallons per month, which represents less than 4% of Pond Creek water disposal needs. Also see response to question #26.**

#### **Antidegradation Assessment/Water Quality Standards**

31. Williamson Energy was found to have 45 effluent violations between the years 2015 and 2017. Eleven of those violations were sulfate and ten were chloride in Pond Creek. How can you say that we will not have problems with water quality when they have repeated problems with water quality? How can the water be safe if they're repeatedly violated?

**Please see the response to question #25, regarding the Agency's enforcement against Williamson Energy for effluent violations.**

**The NPDES permit contains limits and conditions to ensure that the discharge meets WQS, which are protective of the existing uses of Pond Creek.**

**To address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.**

**Additionally, the NPDES permit authorizes a discharge to the Big Muddy River and contains limits and conditions to ensure that the discharge meets WQS which are protective of the existing uses of the Big Muddy River.**

**Special Condition No. 16 in the final permit requires that the discharge from Outfall 011 cease under certain conditions, such as: 1) when the continuous chloride data (as measured by conductivity) is 40 percent above the chloride WQS more than 20 percent of the time; 2) when the sulfate samples are 40 percent above the sulfate WQS in more than three of the samples taken within the month; 3) when the iron (dissolved) samples are 40 percent above the iron (dissolved) WQS in more than three of the samples taken within the month; 4) when the copper samples are 20 percent above the copper WQS water quality standard in more than three of the samples taken within the month; or 5) when the nickel samples are 20 percent above the nickel WQS in more than three of the samples taken within the month.**

**Based on the above, the permit ensures that uses will be maintained in Pond Creek and the Big Muddy River.**

32. Has it been determined by the Illinois EPA or IDNR if there are endangered species or mussel beds, because there's no mention of endangered species anywhere except for they won't be affected or any species, because the water quality will be met, which is not true, because they violate all the time.

**Yes, a detailed summary for IDNR and IEPA actions are as follows:**

**On November 2, 2016, the IDNR EcoCAT web-based tool was used, which indicated that there were no records of aquatic threatened or endangered species present in the vicinity of the discharge. While the IDNR EcoCAT web-based tool did not terminate the consultation because of the nearby presence of Chuck-Will's-Willow (*Caprimulgus carolinensis*), IDNR evaluated the information and terminated the consultation on September 26, 2019, which was reevaluated and terminated again on October 22, 2021. In their termination letters, IDNR reiterated that there were no records of threatened or endangered species present. However, the termination letters indicated that there were 11**

species designated in the Illinois Wildlife Action Plan as “Species in Greatest Need of Conservation” (SGNC). The SGNC that occur in the Big Muddy River include the Alligator Gar (*Atractosteus spatula*), Blacktail Shiner (*Cyprinella venusta*), Brown Bullhead (*Ameiurus Nebulosus*), Flier (*Centrarchus macropterus*), Mooneye (*Hiodon tergisus*), Paddlefish (*Polyodon spathula*), Pugnose Minnow (*Opsopoeodus emiliae*), Ribbon Shiner (*Lythrurus fumeus*), River Darter (*Percina shumardi*), Spottail Darter (*Etheostoma squamiceps*), and Stripetail Darter (*Etheostoma kennicottii*). IDNR also noted that the Pistolgrip (*Tritogonia verrucosa*) has also been found in the Big Muddy River. In conclusion, IDNR indicated that “strict adherence to all effluent limits and all effluent monitoring requirements in accordance with NPDES Permit IL0077666 is requested.”

The mussel survey was conducted April 22-26 and June 5, 2020. The stream discharge rate at the Plumfield, Illinois gauge was between 742 and 855 cfs during this study. The permit has a condition that the mussel survey will be repeated one year after commencement of the discharge.

The survey area encompassed the width of the river from 50 m upstream to 150 m downstream of the proposed outfall location. The mixing zone has a length of 46 feet (13.3 m) by a width of 25 feet (7.62 m). The Survey Area was divided into 40 approximately 10x10 m cells. Four 5-minute qualitative samples were collected within each cell. Qualitative sampling entailed a diver searching the substrate, collecting all unionids encountered within the time period. Substrate composition (Wentworth scale) and water depth (meters) were recorded at the beginning of each sample. Unionids were classified as live, fresh dead, and weathered dead. Live individuals were identified to species, aged, and measured (length in millimeters). At least one individual of each live species was photographed, and (if available) a dead shell of each species was retained as a voucher specimen. All live individuals of non-listed species were relocated to a Recipient Area upstream of the project area with a similar substrate and depth profile as the Survey Area.

A total of 46 live individuals of 11 species were collected from the Survey Area. *Megalonaias nervosa* was the most commonly collected species (n=13), followed by *Leptodea fragilis* (n=11) and *Potamilus alatus* (n=5); remaining species were represented by 4 or fewer live individuals each, including the following; *Fusconaia flava* (n=1), *Tritogonia verrucosa* (n=2), *Quadrula quadrula* (n=1), *Lampsilis teres* (n=4), *Truncilla truncata* (n=1), *Lampsilis cardium* (n=1), *Pyganodon grandis* (n=3), and *Lasmigona complanata* (n=4). Abundance was low, with 16 of 37 searched cells yielding no live individuals.

Unionids were scattered throughout the Survey Area; however, abundance appeared to be greater towards the downstream end of the site, as 23 of the 46 live individuals were collected there. Therefore, the greatest concentration of mussels found were approximately 80 meters downstream of the mixing zone. No mussel beds were found in the mixing zone. In the area of the mixing zone,

**only one live mussel was found. No state listed species (live individuals or dead shell material) were observed in this area.**

33. Looking at the pollutant loading report for Pond Creek Mine, for the last seven years, there was at least one year that had incomplete data points, I want to reiterate that it is not just sulfates and chlorides that are important to have complete data on, because there are many other different elements. Whether they are aluminum or boron or various transition metals, it can be toxic in relatively low concentrations.

**The renewed and modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfalls 006, 007, 008, and 011 for the parameters listed in Special Condition No. 18 of the NPDES permit. These parameters are: arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.**

**The data collected will be used to determine if a permit limit for any of these parameters is necessary in the next permit cycle.**

34. Why was there no mention that this is an outstandingly remarkable value designated river?

**The unnamed tributaries of Pond Creek and Pond Creek itself are not listed as biologically significant streams in the 2008 IDNR Publication Integrating Multiple Taxa in a Biological Stream Rating System, nor are the unnamed tributaries of Pond Creek given an integrity rating in that document. However, Pond Creek itself is rated a "C" stream approximately 7.0 miles downstream of the outfalls.**

**Also, the Big Muddy River is not listed as a biologically significant stream in the 2008 IDNR Publication Integrating Multiple Taxa in a Biological Stream Rating System, nor is it given an integrity rating in that document.**

**For a detailed response on how the NPDES permit would be protective of the existing uses, see response to question #14.**

35. Has the Illinois EPA considered that the river itself should have its own rights?

**The Act and Board regulations require any NPDES permit issued be protective of the designated uses. A detailed discussion of the structure provided by the Board regulations to achieve this mandate is provided below.**

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big**

**Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**This permit has all applicable WQS to ensure that the designated uses are fully protected.**

36. I would like to know what the depth of the Big Muddy in that area is currently, because it surely isn't 30 feet deep for the diffusers to be pouring the effluent into the water?

**The Big Muddy River has a depth of approximately 8-12 feet at the proposed diffuser site, Outfall 011, during baseline flow conditions, which is sufficient for the diffuser at this location.**

**In this case, the applicant has proposed to install a diffuser in the Big Muddy River. Based on the Agency's review of the CORMIX model and 35 Ill. Adm. Code 302.102, the Agency determined the size of the mixing zone and ZID. Based on recommendations from the Agency, the outfall structure was reevaluated to provide better mixing. The Agency determined the size of the mixing zone and ZID that is consistent with 35 Ill. Adm. Code 302.102.**

**The diffuser consists of five individual staged single-port diffusers. This design maximizes the mixing zone for each flow condition in the River while allowing the facility to discharge based on the flow in the River. As the flow in the River decreases or the chloride concentration increases, the larger ports are taken off-line so that the WQS can be maintained at the edge of the mixing zone and ZID, as per 35 Ill. Adm. Code 302.102.**

**The diffuser will be protected by rip-rap on the bottom of the stream. The individual ports will be angled upwards from the bottom of the stream to provide mixing in the water column.**

37. How will the diffuser vents be protected from people continuing to use the location as a dumpsite for large objects? We recommend continuous monitoring like what is being done in Murphysboro.

**The NPDES permit has been modified to require that Outfall 011 include signage on the bank of the Big Muddy River to inform people on the Big Muddy River that the outfall is present at that location. The diffuser ports will be installed in a way to minimize damage due to strikes from natural objects such as logs. The site is not located on a public road, which will reduce the potential for the public from dumping large objects into the river at this location. The opposite bank of the river is also private property, which will minimize the public from dumping large objects into the river at this location.**

**The above mentioned practices are sufficient to protect the diffuser ports from damage.**

38. We analyzed data and found that the 90th percentile chloride concentration is actually 108 milligrams per liter, so I wanted to ask tonight how did the mine come to use 30 milligrams per liter as the 90th percentile?

**The 90th percentile of the chloride data (30.1 mg/L) was based on data from the dam at Rend Lake. As per the December 12, 2016 memo by Scott Twait to Iwona Ward titled "WQBELs for the Big Muddy River discharge (Outfall 011)", the Agency had originally intended to use the 90th percentile chloride value from the dam at Rend Lake to calculate the upstream chloride concentration.**

**However, the public noticed draft permit requires the use of continuous chloride concentration (correlated to the conductivity value). Therefore, the 90th percentile of the chloride data (30.1 mg/L) will not be used to calculate the amount of mixing available.**

39. The antidegradation assessment proposes to monitor downstream chloride concentrations in two ways: The calculated, you have a mixing equation as well as physically with the downstream conductivity probe. Is the permit being violated if either of these values are found to be above 500 milligrams per liter of chloride?

**Yes, both, the mixing zone calculations (correlated to conductivity) and the downstream chloride concentration (correlated to conductivity) must be reported on the DMRs as a daily maximum and must be at or below 500 mg/L.**

40. Is the mine required to monitor and report the effluent discharge rates and chloride concentrations coming out of the pipe?

**Yes, the effluent discharge rate is required to be reported and the chloride concentration will have a maximum concentration of 5,000 mg/L. Additionally, the permit will ensure that WQS are met at the edge of the mixing zone by the requirements below:**

**For Outfall 011, in order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.**

**Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.**

41. How will the mine develop that accurate calibration? Does the Agency have to approve that calibration curve derived by the mine? And are the calibrated values also reported on the DMR? Do we have all of that information that they're using to do that calibration?

**The applicant will develop a site-specific database that correlates the conductivity and chloride concentrations for the Big Muddy River and for the treated effluent. The Agency has included a requirement in the NPDES permit that requires monthly chloride samples and conductivity measurements, in the Big Muddy River (upstream and downstream) and in the effluent, to ensure that the calibration curves remain accurate. Additionally, the Agency has included a requirement in the NPDES permit that requires that the calibration curves are to be approved by the Agency, before discharge, after six months of operation, and yearly thereafter.**

**The chloride values (correlated to the conductivity values) will be reported on the DMRs as chloride in mg/L. The calibration curves will not be reported on the DMRs; however, these curves will be part of the permit record and are available to the public for review via a FOIA request.**

42. The Illinois EPA should include a fish survey, a mussel survey and a survey of invertebrates pre-construction as well as long-term monitoring post-construction would be or should be required.

**As it is detailed below, the Agency has required a mussel and invertebrates survey prior to the construction of the diffuser and has also required that these surveys be performed one year after commencement of the discharge. No additional fish surveys were required as these are part of the long-term monitoring that is completed by IDNR.**

**The company has provided the fish data from 1964 to 2018 that has occurred in the Big Muddy River and in the Big Muddy River watershed. The applicant has**

also provided a mussel survey performed in the Big Muddy River Basin titled "Freshwater Mussels of the Big Muddy River" and published March 7, 2012.

The mussel survey was conducted April 22-26 and June 5, 2020. The stream discharge rate at the Plumfield, Illinois gauge was between 742 and 855 cfs during this study. The permit has a condition that the mussel survey will be repeated one year after commencement of the discharge.

A total of 46 live individuals of 11 species were collected from the Survey Area. *Megalonaias nervosa* was the most commonly collected species (n=13), followed by *Leptodea fragilis* (n=11) and *Potamilus alatus* (n=5); remaining species were represented by 4 or fewer live individuals each, including the following; *Fusconaia flava* (n=1), *Tritogonia verrucosa* (n=2), *Quadrula quadrula* (n=1), *Lampsilis teres* (n=4), *Truncilla truncata* (n=1), *Lampsilis cardium* (n=1), *Pyganodon grandis* (n=3), and *Lasmigona complanata* (n=4). Abundance was low, with 16 of 37 searched cells yielding no live individuals.

Unionids were scattered throughout the Survey Area; however, abundance appeared to be greater towards the downstream end of the site, as 23 of the 46 live individuals were collected there. Therefore, the greatest concentration of mussels found were approximately 80 meters downstream of the mixing zone. No mussel beds were found in the mixing zone. In the area of the mixing zone, only one live mussel was found. No state listed species (live individuals or dead shell material) were observed in this area.

The company also had Alliance Consulting perform a Benthic Macroinvertebrates Community Survey of the Big Muddy River approximately 0.77 miles downstream of the proposed outfall location. The sampling was done on November 20th, 2019. This survey demonstrated that the diffuser will be located in a pool of the river with poor habitat availability for greater than three-quarters of a mile below the diffuser. Due to the depth of the Big Muddy River and accessibility issues, the wadeable collection method was not possible. The benthic macroinvertebrates were sampled using an Ekman Dredge dropped from an abandoned railroad bridge. The mIBI scored 23.8, which is a rating of fair and 80.7% of the sample was made up of tolerant taxa. The benthic macroinvertebrate community in the downstream sample was dominated by tolerant Chironomidae and Ceratopogonidae. A few mayflies and unionids were collected in this survey which may indicate substrate, not water quality, is the limiting factor in this reach. According to the report, the metrics reflect a stream with poor habitat quality, low biodiversity, and a struggling benthic macroinvertebrate community.

Also, the Big Muddy River basin is sampled by the Illinois EPA and the IDNR as part of the IBS program, a cooperative sampling effort that routinely collects a variety of samples including fish and macroinvertebrate assemblages. IBS sampling is conducted every five years. While the next IBS sampling year for the Big Muddy River basin is 2023, this river system is sampled approximately every six weeks for water chemistry, and additional biological sampling can be

**conducted as needed. Big Muddy River sampling locations included in these programs include stations upstream and downstream of the proposed discharge.**

**The NPDES permit includes a condition that requires a mussel survey and a macroinvertebrate survey one year after commencement of the discharge from Outfall 011.**

43. We were able to run some numbers that show if you have chloride coming out of that upstream proposed Sugar Camp discharge as well as this one, have you guys taken into account that potential?

**The chloride coming from the Sugar Camp discharge is accounted for in calculating chloride limits for the Pond Creek NPDES permit. Special Condition No. 15 of the NPDES permit requires that the upstream chloride concentration be measured just upstream of the Outfall 011. The upstream chloride concentration is measured by continuous conductivity measurements (correlated to the chloride concentration). This upstream chloride concentration will account for all sources of chloride upstream of the Outfall 011 location, including chloride from Sugar Camp discharges.**

44. I'm wondering how will Illinois EPA verify all of these calibrations, and how they will work so that the effluent will stay within the limits of the regulations?

**The applicant is required to develop a site-specific database that correlates the conductivity and chloride concentrations for the Big Muddy River and for the treated effluent. The Agency has included a requirement in the NPDES permit that requires monthly chloride samples and conductivity measurements to ensure that the calibration curves remain accurate. Additionally, the Agency has included a requirement in the NPDES permit that requires that the calibration curves are to be approved by the Agency, before discharge, after six months of operation, and yearly thereafter.**

45. Even with a diffuser, what gives Illinois EPA any confidence that there will not be acutely high concentrations that can gravely harm the fish, macroinvertebrates, mussels, plants and other wildlife that depend on the Big Muddy River, especially near the 011 Outflow location?

**As has been described previously, the WQS are designed to be protective of the designated uses. Since the NPDES permit was public noticed, the following changes have been made to the NPDES permit:**

**Special Condition No. 15 of the draft permit has been modified to reduce the maximum chloride concentration for Outfall 011 from 12,000 mg/L to 5,000 mg/L.**

**The NPDES permit defines the mixing zone and ZIDs for each of the ports. The ZID for Ports 1 and 2 has a length of 4.5 feet by a width of 1.12 feet each. The**

ZID for Port 3 has a length of 5.68 feet by a width of 1.38 feet. The ZID for Port 4 has a length of 7.64 feet by a width of 1.97 feet. The ZID for Port 5 has a length of 9.18 feet by a width of 2.23 feet. The mixing zone has a length of 46 feet by a width of 25 feet.

Special Condition No. 16 in the final permit requires that the discharge from Outfall 011 cease under certain conditions, such as: 1) when the continuous chloride data (as measured by conductivity) is 40 percent above the chloride WQS more than 20 percent of the time; 2) when the sulfate samples are 40 percent above the sulfate WQS in more than three of the samples taken within the month; 3) when the iron (dissolved) samples are 40 percent above the iron (dissolved) WQS in more than three of the samples taken within the month; 4) when the copper samples are 20 percent above the copper WQS in more than three of the samples taken within the month; or 5) when the nickel samples are 20 percent above the nickel WQS in more than three of the samples taken within the month.

Special Condition No. 16 also requires increased monitoring for sulfate, nickel, copper, and iron (dissolved) to three times per week for Outfall 011 within 10 feet downstream of the edge of the mixing zone.

To address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

The renewed/modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfalls 006, 007, 008, and 011 for the parameters listed in Special Condition No.18 of the NPDES permit. These parameters are: arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.

At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and cadmium, copper, nickel, and zinc at Outfall 008.

The permit includes additional effluent sampling, for Outfall 011, for sulfate, iron, and chloride will be sampled three times per week.

**Additionally, the NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cubic feet per second (cfs) and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.**

**The permit has a condition that the mussel and invertebrate survey on the Big Muddy River will be repeated one year after commencement of the discharge.**

**The permit includes monitoring or limits for all parameters that could be present in the mine discharge.**

**Additionally, the NPDES permit has been modified to incorporate a limit of 32.2 mg/L for Outfall 011 applied as a yearly average.**

**Based on the above, the Agency concluded that there will not be acutely high concentrations of contaminants that can gravely harm the fish, macroinvertebrates, mussels, plants, and other wildlife that depend on the Big Muddy River.**

46. Since these are our common-pool resources and waters of the USA, I am curious if this has taken into consideration the compounding pollutants that were discharged downstream and also considerate of all the other industries that input into streams, because the Gulf of Mexico is currently under hypoxia during the summers, and there's fish die off, and this is a tributary to the Mississippi which discharges into the Gulf of Mexico.

**The effluent does not have sufficient deoxygenating chemicals or sufficient phosphorus to contribute to the Dissolved Oxygen impairment or potential impairment of phosphorus and will not cause a violation of the WQS in the receiving streams or the Gulf of Mexico.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**The Agency considered all of the upstream chloride inputs. In order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the**

**effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.**

**The constituents discharged at the outfall location will be transported downstream by the Big Muddy River. Since all water quality criteria will be met at the edge of the mixing zone and ZID, the Agency does not anticipate downstream impacts.**

47. Why are you proposing to grant the mine a mixing zone for chlorides at the Pond Creek Outfall if the Pond Creek is already impaired? Why was the level of chlorides in Pond Creek found by Illinois EPA to no longer be of concern by the recent TMDL assessment when it already has been measured at or near the maximum of 500 milligrams per liter?

**The Agency has removed the proposed mixing zone in Pond Creek from the NPDES permit.**

**The Agency collected chloride data in Pond Creek (NG-02) between May 2019 and October 2019 to supplement the data for the TMDL Program. Six samples for chloride were taken, which ranged from 687 mg/L to 1,100 mg/L. Pond Creek (NG-02) is still listed on the 2018 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use with potential cause given as chloride.**

**Because of the impaired status, the permit has been modified to not authorize discharges from the proposed Outfalls 009 and 009ES into Pond Creek and the unnamed tributary of Pond Creek respectively. Additionally, to address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.**

48. Will the increased chloride and total dissolved solids levels in the Big Muddy River cause higher methyl mercury levels? Will the acid mine drainage allowed in this permit also increase the conversion of mercury to methyl mercury? Can Illinois EPA assure us that it will not?

**For the reasons stated below, the Agency concluded that the increased chloride and total dissolved solids levels in the Big Muddy River or the discharge from the mine will not increase the methylmercury levels.**

**Methylmercury does bond with chloride (Cl<sup>-</sup>); however, it also bonds with hydroxide (OH<sup>-</sup>) and nitrate (NO<sub>3</sub><sup>-</sup>).**

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. The minimum detection limit (MDL) in the additional sampling is 0.5 nanograms per liter. Based upon the additional data, at this MDL, the NPDES permit has been modified to include a limit for mercury at Outfall 001. The data indicate that there is no reasonable potential for Outfalls 002 through 008 to exceed the WQS for mercury.**

**Methylmercury is formed primarily under anaerobic conditions. These conditions are expected in the sediments and not expected in the water column. The deeper sediments that are not directly impacted by the overlying water column are expected to be anaerobic or anoxic. The water column is not expected to interact with the anaerobic or anoxic parts of the sediment where methylation is expected to occur.**

**Effluent present in the mixing zone, where the greatest concentrations of chlorides are expected is not anticipated to interact with the bottom sediments. Therefore, there is minimal risk of increased release of methylmercury within the mixing zone area. Further downstream, the concentration of chloride will continue to decrease, thus reducing any risk of mercury release.**

49. Has Illinois EPA evaluated the possible harm to humans from increased methyl mercury that could be caused by granting this permit?

**Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. The MDL in the additional sampling is 0.5 nanograms per liter. Based upon the additional data at this MDL, the NPDES permit has been modified to include a limit of 12 ng/L for mercury at Outfall 001. The data indicate that there is no reasonable potential for Outfalls 002 through 008 to exceed the WQS for mercury.**

**Additionally, Special Condition No. 18 of the NPDES permit requires that Outfalls 006, 007, 008, and 011 shall be monitored monthly for the first year following the effective date of the permit after which semi-annual sampling for mercury with such monitoring spaced at approximately six-month intervals during the entire five-year term of the NPDES Permit.**

**Since the NPDES permit has a mercury limit for Outfall 001, and the Agency has determined that there is no reasonable potential to exceed the mercury WQS for the other Outfalls, the discharge from this mine will be fully protective of the existing uses, including protective of human health.**

50. I don't see how heavy metals possibly dissolve in water. How does that affect plant life and trees, as well as the animals that use those for habitation?

**Heavy metals are regulated in the NPDES permit including cadmium and mercury at Outfall 001, cadmium, copper and nickel at Outfall 002, cadmium and iron (dissolved) at Outfall 003, cadmium and copper at Outfall 004, cadmium at Outfall 005, cadmium, manganese, and nickel at Outfall 006, cadmium, iron (dissolved), nickel, manganese, and zinc at Outfall 007, cadmium, copper, nickel, manganese, and zinc at Outfall 008 and manganese at Outfall 011.**

**Additionally, the renewed and modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfalls 006, 007, 008, and 011 for the parameters listed in Special Condition No. 18 of the NPDES permit. These parameters are: arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**As the NPDES permit has limits based on the WQS, the uses of the Big Muddy River and Pond Creek will be fully protected.**

51. I noted that you said it's 5,000 gallons a minute maximum flow rate. That's like 7.2 million a day. The permit mentions a rate of 2.7 to 2.9 daily. How is that working out mathematically?

**The estimated maximum daily volume of discharge does not appear to agree with the maximum estimated discharge rate because this is not anticipated to be a constant discharge at the maximum flow rate on a daily basis. The discharge rate will at times be significantly less than the maximum allowable, based on the flow in the Big Muddy River, in addition to the discharge possibly being episodic or sporadic rather than constant.**

**Please note that the NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.**

52. Has the Illinois EPA done any work to assure that the reasonable potential for mercury has been measured down to where it would measure a violation of the mercury standards?

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. The MDL in the additional sampling is 0.5 nanograms per liter. Based upon the additional data at this MDL, the NPDES permit has been modified to include a limit for mercury at Outfall 001. The data indicate that there is no reasonable potential for Outfalls 002 through 008 to exceed the WQS for mercury.**

53. Did the Illinois EPA use or consider the USEPA technical support document in 1991 which is used in order to calculate a reasonable potential according to guidance from US EPA?

**Yes, the Agency considered the 1991 USEPA technical support document.**

**For Outfall 011, based on the effluent characterization, the Agency did the reasonable potential analysis as required by 35 Ill. Adm. Code 309.141(h)(3) and determined that mercury does not have a reasonable potential to exceed the WQS in the effluent.**

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. The MDL in the additional sampling is 0.5 nanograms per liter. Based upon the additional data at this MDL, the NPDES permit has been modified to include a limit for mercury at Outfall 001. The data indicate that there is no reasonable potential for Outfalls 002 through 008 to exceed the WQS for mercury.**

**Additionally, Special Condition No. 18 of the NPDES permit requires that Outfalls 006, 007, 008, and 011 shall be monitored monthly for the first year following the effective date of the permit after which semi-annual sampling for mercury with such monitoring spaced at approximately six-month intervals during the entire five-year term of the NPDES Permit.**

54. There are six data points listed. As you're aware under the technical support document that asks for a minimum of ten, so you're collecting more data at this point?

**The technical support document (EPA/505/2-90-001) does not require 10 samples to perform a reasonable potential analysis. The guidance document recommends a higher multiplier should be used when fewer samples are taken.**

**As an example, with a coefficient of variation of 0.6, if ten samples are taken, the multiplier is 1.7 and if five samples are taken, the multiplier is 2.3.**

**However, at the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and cadmium, copper, nickel, and zinc at Outfall 008.**

55. The mine is going to use conductivity probes in order to determine the chloride level. Doesn't chloride as a percentage of conductivity vary under various conditions?

**Because chloride as a percent of conductivity varies under various conditions, the applicant is required to develop a site-specific database that correlates the conductivity and chloride concentrations for the Big Muddy River and for the treated effluent. The Agency has included a requirement in the NPDES permit that requires monthly chloride samples and conductivity measurements to ensure that the calibration curves remain accurate. Additionally, the Agency has included a requirement in the NPDES permit that requires that the calibration curves are to be approved by the Agency, before discharge, after six months of operation, and yearly thereafter.**

56. What is the date of the last watershed analysis, and how extensive is it that you have used and its impact on the water source for drinking water for southern Illinois?

**The Big Muddy River basin is sampled by the Illinois EPA and the IDNR as part of the IBS program, a cooperative sampling effort that routinely collects a variety of samples including fish and macroinvertebrate assemblages. IBS sampling is conducted every five years. The previous IBS sampling year for the Big Muddy River basin was 2018, however, invertebrate monitoring was not completed due to high river levels. The next IBS sampling year for the Big Muddy River is 2023. Big Muddy River sampling locations included in these programs include stations upstream and downstream of the proposed Outfall 011 discharge. There are no known withdrawal locations on the Big Muddy River for drinking water supply.**

**Additionally, the Agency has an AWQMN throughout the State. The AWQMN has stations on the Big Muddy River, both upstream and downstream of Outfall 011. The ambient stations are sampled for water quality approximately every six weeks.**

57. No assessment is provided for the biological or environmental impacts, cumulative water quality, nor ground water withdrawal impacts. Who is going to make sure the discharge meets WQS and does not exceed the allowable volume? The Big Muddy

River should not be a sewer for corporate greed. The biological diversity of the region must be preserved for the enjoyment of all its people.

**Monitoring results are reported on DMRs which are submitted quarterly to the Agency. The DMRs are assessed by the Compliance Assurance Section (CAS). The Agency runs monthly compliance reports using ICIS/ECHO to detect SNC at mine NPDES permits. ICIS/ECHO automatically detects violations such as DMR Non-Receipt, Effluent Limit, or Delinquent Schedules/Reports. If a violation is identified as SNC, CAS, on a weekly basis, determines the appropriate compliance or enforcement action to resolve the SNC violations.**

**The few private wells in the area are generally less than 200 feet in depth. The formation with the saline water is approximately 450 to 600 feet in depth. Any impact of water withdrawal from this depth on the more shallow private wells would be expected to be minimal. Generally, water recharges into the ground in upland areas and discharges to surface water in lowland areas. Water recharging to the depth of the mine would be coming from upland areas further away, not from local creeks.**

58. What chemical would be released and what effects does the discharge have on living organisms through an environmental impact study. What value is the Illinois EPA giving to all the proposed damage and loss in the lower Big Muddy River watershed ecosystem? If we must choose between assisting one coal mine and all that comes with an environmentally sound watershed for generations to come, we must choose the future.

**A comprehensive analysis of all chemicals that would be released in the Big Muddy River was performed for Outfall 011.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel. Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses of the Big Muddy River will be fully protected. Also, as the WQS will be met in the receiving stream, the Agency does not anticipate any damage or loss.**

59. My major concern is how will the public and your organization know if the dilution system is effective, especially if the proposed egress of the wastewater is downstream from the gauging station where water is measured and analyzed? Has the wastewater been tested before and after diluted measures taken place on a normal day, and week of operation? What exactly does diluted measures mean? How effective and how

much of the heavy metals are recovered in the process on a daily, weekly, and monthly period? How dangerous will this water be for the ecosystem? Is it safe for anyone or anything to consume, bath, and swim? What is the economic impact as it relates to tourism and the recreation industry? What is Williamson Energy's safety and health record for its miners? How have other mines dealt with this similar situation?

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**The federal regulations at 40 CFR 131.13 authorize states to use mixing zones and zones of initial dilution to implement WQS. Illinois has adopted mixing zones and zones of initial dilution WQS located at 35 Ill. Adm. Code 302.102.**

**In the zone immediately surrounding an outfall, both the acute and the chronic criteria may be exceeded, but the acute criterion must be met at the edge of this zone, which is often referred to as the acute mixing zone or the ZID. The acute mixing zone is sized to prevent lethality to passing organisms in order to protect the designated use of the waterbody as a whole. In case of the mixing zone, which is often called the chronic mixing zone, the chronic criterion may be exceeded, but the acute criterion must be met. The chronic criterion is met at the edge of the chronic mixing zone. The chronic mixing zone is sized to protect the designated use of the waterbody as a whole.**

**A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and where certain numeric water quality criteria may be exceeded.**

In this case, the applicant has proposed to install a diffuser in the Big Muddy River. Based on the Agency's review of the CORMIX model and 35 Ill. Adm. Code 302.102, the Agency determined the size of the mixing zone and ZID. Based on recommendations from the Agency, the outfall structure was reevaluated to provide better mixing. The Agency determined the size of the mixing zone and ZID that is consistent with 35 Ill. Adm. Code 302.102.

The diffuser consists of five individual staged single-port diffusers. This design maximizes the mixing zone for each flow condition in the River while allowing the facility to discharge based on the flow in the River. As the flow in the River decreases or the chloride concentration increases, the larger ports are taken off-line so that the WQS can be maintained at the edge of the mixing zone and ZID, as per 35 Ill. Adm. Code 302.102.

In order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No.15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.

Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.

As part of the water treatment on-site, the capture of solids within the retention basin systems does serve to reduce the potential concentration of metals that would be discharged. This is due to the fact that most metals preference to be attached to solids under the conditions found in the holding pond and settling ponds.

The safety and health of the workforce is beyond the scope of Illinois EPAs review of the NPDES permit. The Occupational Safety and Health Administration (OSHA) and the OMM's Mine Safety and Training Division is charged with the health and safety concerns of the state's coal mines and their employees.

Several mines in Illinois have employed mixing zones and allowed mixing in their NPDES permits. While this saltwater aquifer is not unique, it is also not common. Most Illinois mines discharge through stormwater discharges while still meeting the WQS. The option of discharging through the stormwater discharges is not possible because of the high volumes of saltwater into the mine.

60. What is a full assessment of the biological or other environmental impacts of the proposed mixing of this contaminated mine water on the river ecosystem and current uses of the Big Muddy River? The mine should be required to build water treatment plant onsite to ensure their water discharges meet regulations.

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**The federal regulations at 40 CFR 131.13 authorize states to use mixing zones and zones of initial dilution to implement WQS. Illinois has adopted mixing zones and zones of initial dilution WQS located at 35 Ill. Adm. Code 302.102.**

**A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and where certain numeric water quality criteria may be exceeded.**

**In this case, the applicant has proposed to install a diffuser in the Big Muddy River. Based on the Agency's review of the CORMIX model and 35 Ill. Adm. Code 302.102, the Agency determined the size of the mixing zone and ZID. Based on recommendations from the Agency, the outfall structure was reevaluated to provide better mixing. The Agency determined the size of the mixing zone and ZID that is consistent with 35 Ill. Adm. Code 302.102.**

**The diffuser consists of five individual staged single-port diffusers. This design maximizes the mixing zone for each flow condition in the River while allowing the facility to discharge based on the flow in the River. As the flow in the River decreases or the chloride concentration increases, the larger ports are taken**

off-line so that the WQS can be maintained at the edge of the mixing zone and ZID, as per 35 Ill. Adm. Code 302.102.

In order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.

Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.

Additionally, to address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

Also, see response to question #75.

61. Disposing of the wastewater is part of the mine's cost of doing business. The Shawnee National Forest's famed Snake Road which is in Big Muddy's floodplain could be adversely affected. Who is going to monitor the effluent? Will IDNR have someone there on a daily basis when water is being released?

The Shawnee National Forest's Snake Road is approximately 80 miles downstream of the proposed discharge. Perhaps this area is most famous for the biannual 'Snake Migration' across the LaRue Road at the base of the bluffs, adjacent to LaRue Swamp. The road is closed to vehicular traffic every spring and fall to help protect thousands of reptiles and amphibians during their migration between their summer and winter habitats. The primary source of the swamp's water is runoff from west - facing wooded slopes and bluffs of the adjacent Pine Hills and from springs along the base of the bluffs. Therefore, the source of water for the LaRue Swamp is not the Big Muddy River. The Big Muddy River is approximately 1.9 miles Northwest of the LaRue Swamp with a stream and a levee in-between the LaRue Swamp and the Big Muddy River.

The discharge is required to meet all applicable WQS. Therefore, no impact on the Big Muddy River is anticipated.

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**IDNR nor the Agency will be at the mine on a daily basis. The applicant will be required to calculate the maximum chloride concentration and the maximum chloride concentration (correlated to the conductivity value) from the downstream continuous monitor be reported on the DMRs. Monitoring results are reported on DMRs which are submitted quarterly to the Agency. The Agency runs monthly compliance reports using ICIS/ECHO to detect SNC at mine NPDES permits. ICIS/ECHO automatically detects violations such as DMR Non-Receipt, Effluent Limit, or Delinquent Schedules/Reports. If a violation is identified as SNC, CAS, on a weekly basis, determines the appropriate compliance or enforcement action to resolve the SNC violations.**

**The constituents discharged at the outfall location will be transported downstream by the Big Muddy River. Since all water quality criteria will be met at the edge of the mixing zone and ZID, the Agency does not anticipate downstream impacts. Thus, the Agency does not expect any impacts to the Shawnee National Forest's famed Snake Road.**

62. Where is the reference to the cumulative effects of adding chemicals to a river that is impaired and continually receives discharges from other sources? Why has there been no assessment of the cumulative impacts on water quality?

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill.**

**Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**According to Section 39(a) of the Act, it shall be the duty of the Agency to issue such a permit upon proof by the applicant that the facility will not cause a violation of this Act or of regulations hereunder 415 ILCS 5/39. The Illinois WQS are based on individual constituents; therefore, the individual constituents do not address cumulative impacts on designated uses.**

**Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected.**

63. Why would the permittee determine the effluent limitation for chloride and the maximum effluent flow? How would this be monitored? Given the violations related to this company concerning its outfall sites, why would you trust that regulations will be followed?

**In order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.**

**Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.**

**The applicant will develop a site-specific database that correlates the conductivity and chloride concentrations for the Big Muddy River and for the treated effluent. The Agency has included a requirement in the NPDES permit that requires monthly chloride samples and conductivity measurements, in the Big Muddy River (upstream and downstream) and in the effluent, to ensure that the calibration curves remain accurate. Additionally, the Agency has included a requirement in the NPDES permit that requires that the calibration curves are to be approved by the Agency, before discharge, after six months of operation, and yearly thereafter.**

**Monitoring results are reported on DMRs which are submitted quarterly to the Agency. The Agency runs monthly compliance reports using ICIS/ECHO to detect SNC at mine NPDES permits. ICIS/ECHO automatically detects violations such as DMR Non-Receipt, Effluent Limit, or Delinquent Schedules/Reports. If a violation is identified as SNC, CAS, on a weekly basis, determines the appropriate compliance or enforcement action to resolve the SNC violations.**

**The Agency typically collects samples at NPDES permitted facilities during routine mine inspections. These samples are analyzed by either the Agency laboratory or an outside third-party laboratory. IDNR also inspects the sites and periodically collects samples.**

64. Who is going to monitor the dilution process?

**The applicant will be required to calculate the maximum chloride concentration and the maximum chloride concentration (correlated to the conductivity value) from the downstream continuous monitor be reported on the DMRs.**

**Also, see response to question #63 for details on determination of chloride limit in the NPDES permit.**

65. Has there been a chemical assay performed in the effluent? If so, is there adequate data from samples from above and below the proposed discharge location to show there is no impact on water quality?

**The Agency used the applicant's effluent characterization of the proposed discharge, the AWQMN station data, as well as the Integrated Report to assess the impacts on water quality.**

**Also, the Big Muddy River basin is sampled by the Illinois EPA and the IDNR as part of the IBS program, a cooperative sampling effort that routinely collects a variety of samples including fish and macroinvertebrate assemblages. IBS sampling is conducted every five years. While the next IBS sampling year for the Big Muddy River basin is 2023, this river system is sampled approximately every six weeks for water chemistry, and additional biological sampling can be conducted as needed. Big Muddy River sampling locations included in these programs include stations upstream and downstream of the proposed discharge.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and**

chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel. Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected.

66. What is the daily water quality biological, and downstream impacts of this proposal on the Big Muddy?

**This discharge will be required to meet the WQS outside of the mixing zone and ZID, therefore, the Agency does not anticipate and biological impacts in the Big Muddy River outside of the mixing zone and ZID.**

As a background, WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.

67. What are the actual discharges and pollutant levels for the last five years?

Williamson Energy has had permit violations noted on the NPDES DMRs. The data can be found by going to the ECHO website: <https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download> and clicking on the date range to change and then entering "IL0077666" into the NPDES ID box. After pressing "Submit", the website will open an Excel worksheet with the data.

68. What will the proposed daily discharge of high levels of sulfates and chlorides do to the aquatic life?

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

The Board's WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.

Since the discharge is required to comply with WQS for sulfate and chloride prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected.

69. What volume of water will be discharged into the river?

The volume of water discharged to the Big Muddy River is dependent upon the flow rate and duration of discharge; however, under no circumstances shall the maximum discharge rate exceed 5,000 GPM (gallons per minute). The NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.

70. Will there be violations of water standards due to the excessive amount of mine waste?

**No, as the permit contains limits and conditions based on the Board's WQS.**

The Agency performed the reasonable potential analysis to determined that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.

Also, the NPDES permit has been modified to include additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and cadmium, copper, nickel, and zinc at Outfall 008.

71. Is the water monitoring of the applicants effluent adequate to determine potential effect?

**Yes, the monitoring of the applicant's effluent was placed in the NPDES permit to adequately characterize the effluent and ensure that WQS will be met in the receiving stream. The Agency placed terms and conditions in the NPDES permit to ensure that WQS are met.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**The renewed and modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfalls 006, 007, 008, and 011 for the parameters listed in Special Condition No. 18 of the NPDES permit. These parameters are arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.**

**For Outfall 011, in order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.**

**Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.**

**The Agency has included a Special Condition to address this comment. Special Condition No. 16 in the final permit requires that the discharge from Outfall 011 cease under certain conditions, such as: 1) when the continuous chloride data (as measured by conductivity) is 40 percent above the chloride WQS more than 20 percent of the time; 2) when the sulfate samples are 40 percent above the sulfate WQS in more than three of the samples taken within the month; 3) when the iron (dissolved) samples are 40 percent above the iron (dissolved) WQS in more than three of the samples taken within the month; 4) when the copper**

**samples are 20 percent above the copper WQS in more than three of the samples taken within the month; or 5) when the nickel samples are 20 percent above the nickel WQS in more than three of the samples taken within the month.**

**Special Condition No. 16 also requires increased monitoring for sulfate, nickel, copper, and iron (dissolved) to three times per week for Outfall 011 within 10 feet downstream of the edge of the mixing zone.**

**Based on the above, the monitoring of the applicants' effluent is adequate to determine the potential effect of the discharge.**

72. Are there any locations downstream that have mussel populations?

**Yes, mussels live in the Big Muddy River and the Big Muddy River basin. A basin-wide study was issued March 7, 2012 entitled "Freshwater Mussels of the Big Muddy River" prepared by the Illinois Natural History Survey: Prairie Research Institute, which detail the mussel population found in the Big Muddy River and its' basin. According to the study, no threatened or endangered mussels were found in the Big Muddy River or the Big Muddy River basin.**

**For a more detailed response on mussel survey and findings, see the response to question #42.**

73. What other water downstream may be adversely affected?

**Regarding downstream impacts of the Snake Road and LaRue Swamp, please see the responses to questions #61 and #100. Regarding downstream impact of dissolved oxygen, phosphorus, methyl mercury, and the narrative standard, please see response to question #104.**

**Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected. Thus, other water downstream will not be adversely affected.**

74. Should there be a total dissolved solids or conductivity limit?

**No, because there are no WQS for total dissolved solids or conductivity. The IPCB removed the total dissolved solids WQS and replaced it with a sulfate WQS. In this case, conductivity will be monitored in the effluent, upstream, and downstream for Outfall 011 to ensure that the chloride WQS is met.**

75. Are there alternatives to discharging wastewater into streams?

**The company provided supplemental information on the alternatives for the antidegradation analysis on December 17, 2019. A summary of the additional information is provided below:**

### **Reverse Osmosis**

Reverse Osmosis (RO) is a water purification process that uses partially permeable membranes to remove dissolved salt and other unwanted particles in suspension from the water stream. The RO process includes a pre-treatment pond, ultra-filtration system, high-pressure pumps, membrane assembly, clean water discharge, and wastewater discharge. The concentrated brackish water must then be treated through an additional process for long-term management such as Deep Well Injection or Crystallization or solid waste landfill.

A single plant could be designed to meet the required capacity to treat the initial proposed discharge. After the RO process is completed a highly concentrated waste stream of brackish water is created and requires the development of additional technology to dispose of the highly concentrated brackish water utilizing Deep Well Injection or Crystallization.

RO technology creates a waste stream more hazardous than the water prior to treatment that creates another set of disposal problems. Managing the waste stream from 3.5 MGD RO unit could be problematic as can be seen in the discussions below. Therefore, RO is not considered applicable or feasible as a long-term solution for a mine with a flow of 3.5 million gallons per day.

However, to address the impaired status of Pond Creek, a portion of the flow will be treated by an RO system. A 1.0 MGD RO unit will be required by December 31, 2023, that will discharge the permeate from the RO unit (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water will be discharged to the Big Muddy River via Outfall 011.

### **Deep Well Injection of the Mine Infiltration Water**

The mine infiltration water could be discharged directly to a UIC well (often referred to as a deep well). The injection wells must be installed at extreme depths to ensure they do not affect potential aquifers used for public consumption and into a geologic formation that is capable of receiving excess water.

The receiving underground formation at this mine site has a limited amount of volume it can receive instantaneously and long term. As the underground formation is filled with excess water, its acceptance can be diminished. Consequently, multiple wells cannot be installed in close proximity to one another or they will negatively influence one another and restrict flow. In order to completely utilize this technology at Pond Creek mine, it is estimated that nine deep injection wells spaced an adequate distance apart would be needed. Additionally, miles of pipeline conveying water to each individual well. An ultra-

filtration system would also be needed to remove any suspended solids from the water prior to injection.

Because of reasons stated above, Deep Well Injection is not practicable for large flows. Deep Well Injection is an unreliable and impractical alternative to dispose of the amount of water infiltrating the Pond Creek mine. Considering the operational difficulties that can be experienced when attempting to discharge to a deep well, Deep Well Injection of the mine infiltration water is not considered either applicable or feasible for the operation of the Mine.

### Evaporation

Evaporation works by constructing ponds with large surface area, filling the ponds with water and exposing water to the forces of nature. The groundwater would be evaporated, leaving a TDS residue in a constructed evaporation pond. In the conceptual design, it was assumed the evaporators would be placed on floating platforms along the outside of the water storage lake and operated 214 days per year.

Evaporation ponds require large land areas, and the area would not be expected to be productive once it is used for this purpose (salt accumulation). In order to evaporate 3.5 million gallons per calendar day during the estimated 214-day period, 1,621 evaporators would be required. During the non-evaporative season, a 1,600 acre-ft pond would have to be constructed to store the excess water during this time. This extremely large pond would have an enormous footprint (approximately 160 surface acres, 10-feet deep) because it would have to collect unevaporated water and salt that falls back to the surface.

The climate at the Pond Creek mine is not conducive to evaporation techniques because it is not considered moisture deficient. After the evaporators have finished concentrating the salt water then some additional technology is required to dispose of the salt concentrates (Ex: Deep well injection or Crystallization and Solid Waste Land Fill). Given the inefficient system, operational difficulties to maintain a system of this magnitude, and additional alternatives to dispose of the salt mechanical evaporation is not a viable alternative. This option is not considered applicable or feasible to dispose of water at the Pond Creek mine.

### Crystallization

Crystallization is the process that converts the concentrated brackish water generated in a mechanical evaporator or reverse osmosis process to create a disposable salt cake. This process offers an alternative to Deep Well Injection for the brackish reject stream from a reverse osmosis or mechanical evaporator system.

**It is possible that the salt cake could be sold, but unlikely, due to the various salt compositions that are captured in a mine related RO process. This process usually culminates in the utilization of a large lined landfill to dispose of the waste that consumes large tracts of land that would otherwise not be impacted. Using crystallization equipment to reduce the RO reject water has a high energy demand.**

**Considering the above, crystallization is not a standalone treatment option and it is not considered either applicable or feasible as a treatment system for the operation of the mine as a long-term solution.**

76. How did Williamson Energy LLC dispose of high chloride/ sulfate water in the past?

**See response to question #18(e).**

77. Can you require a new Antidegradation Statement that includes the current commercial, recreational, environmental and ecosystem social and economic benefits and has more of a total assessment instead of only what is of benefit to the mine?

**An antidegradation assessment was completed as per 35 Ill. Adm. Code 302.105. The company updated and enhanced the data provided for the alternative analysis that is required in the antidegradation assessment (see response to question #75).**

**The applicant indicates that the discharge will support a mining operation that employs over 235 direct jobs with a payroll of approximately \$20.2 million annually. In addition to the direct employees, approximately 100 additional persons such as truck drivers, engineers, and support personnel are employed full time through operation of the mine. Further, based on an economic formula widely accepted in the state of three persons employed in indirect or induced jobs per each direct coal industry job, an additional 705 persons are employed as a result of this mine. Williamson Energy contributes approximately \$1.5 million in federal taxes and approximately \$0.7 million in local and state taxes.**

**The company has summarized the fish data from 1964 to 2018 that has occurred in the Big Muddy River and in the Big Muddy River watershed. The company has provided a mussel survey performed in the Big Muddy River Basin titled "Freshwater Mussels of the Big Muddy River" and published March 7, 2012.**

**For a more detailed response on mussel and macroinvertebrates survey and findings, see the response to question #42.**

**Based on the above, the Agency concludes that the antidegradation assessment satisfied all of the requirements of 35 Ill. Adm. Code 302.105.**

78. Can Illinois EPA require an Environmental Impact Statement for this permit? I'm concerned about pollution loading to area surface and groundwater resources and the alarming impacts downstream affecting the Mississippi River.

**The environmental impact statement is mandated by the National Environmental Policy Act of 1969 and involves projects that constitute federal action, as defined by law, including those that use federal land, federal tax dollars under federal agency jurisdiction.**

**Illinois EPA evaluates permit applications based on the standards and requirements of the Illinois Environmental Protection Act, the Clean Water Act and appropriate state and federal regulations to issue a NPDES permit that addresses pollution loading as well as impacts to groundwater and downstream waters.**

79. What will be the impact from increased water volume and toxins contained in floodwaters on the rare floodplain fauna and flora?

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and**

**chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected. Thus, other water downstream will not be adversely affected.**

80. Has Illinois EPA considered the cumulative impacts from the discharge along with eight existing outfall discharge locations and will it create more suspended solids in the river?

**The discharge from each of the eight outfalls is required to comply with the WQS, therefore, there will not be any cumulative effects of discharges from these eight outfalls.**

**Because of the impaired status, the permit has been modified to not authorize discharges from the proposed Outfalls 009 and 009ES into Pond Creek and the unnamed tributary of Pond Creek respectively. Additionally, to address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.**

**Additionally, the NPDES permit has been modified to incorporate a limit of 32.2 mg/L for Outfall 011 applied as a yearly average.**

81. Why is the WQS for iron listed on the draft permit for the pond Creek pipeline as 3 mg/6mgL when the standard on the EPA WQS report 2019 states that the acceptable level is 1 mg/L?

**The 3 mg/L monthly average and 6 mg/L daily maximum effluent limitations for iron (total) are effluent standards which must be met at the end of the pipe whereas, the WQS is 1.0 mg/L for iron (dissolved). As there was no reasonable potential to exceed WQS for iron (dissolved), no permit limit is necessary except as noted below.**

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include additional NPDES permit limits for iron (dissolved) at Outfall 003 and Outfall 007.**

82. Why has the Mercury advisory suddenly been lifted?

**The mercury advisory has not been lifted. When the Agency checked the Illinois Department of Public Health website, Common Carp, Crappie, Largemouth**

Bass, and Channel Catfish were listed under the Big Muddy River and its tributaries. The fish consumption advisory due to mercury are still in place. The IDPH listings can be found at: <http://www.dph.illinois.gov/topics-services/environmental-health-protection/toxicology/fish-advisories/map/bigmuddy-river-multicounty>.

83. How can the Illinois EPA allow such a violation of its own and national regulations for chloride levels?

The NPDES permit requires the permittee to comply with the State's WQS for chloride. The NPDES permit, as drafted, contains limits and conditions to ensure that the discharge meets the WQS, which are protective of the existing uses of the Big Muddy River.

The permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L. Since the chloride WQS will be met at the edge of the mixing zone, the Agency will not be allowing violations of the chloride WQS.

Also, it should be noted, that in order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.

84. How's the Illinois EPA taking into consideration current studies regarding effects of salination on aquatic animals?

The Agency did not consider the chloride concentrations in these studies as the concentrations recommended by these studies have not been adopted by the Board.

Under the Act, the Illinois EPA is required to issue a permit to an applicant upon proof that the proposed facility or equipment will not cause a violation of the Act or promulgated regulations. See, 415 ILCS 5/39(a). This standard is a mandatory one, expressed in the language of the provision as a "duty" that is imposed upon the Illinois EPA. While agency deliberation of certain aspects of the permit may be grounded in the exercise of discretion, the broader legal standard governing permit issuance or denial limits the discretion of the Illinois

EPA. The Illinois EPA finds that the legal standard noted above has been met. Nothing in the record, including the public comments on the draft permit, adduces otherwise.

In this case, the applicant provided data and the antidegradation assessment to show that its discharge will comply with all applicable WQS. The NPDES permit, as drafted, contains limits and conditions to ensure that the discharge meets the WQS, which are protective of the existing uses of the Big Muddy River.

85. Mixing is not allowed in waters containing mussel beds an endangered species habitat has this been determined by the EPA and IDNR? How's the current state of the river as well as the Sugar Creek mine discharge pipeline been considered in determining this?

On November 2, 2016, the IDNR EcoCAT web-based tool was used, which indicated that there were no records of aquatic threatened or endangered species present in the vicinity of the discharge. While the IDNR EcoCAT web-based tool did not terminate the consultation because of the nearby presence of Chuck-Will's-Willow (*Caprimulgus carolinensis*), IDNR evaluated the information and terminated the consultation on September 26, 2019, which was reevaluated and terminated again on October 22, 2021. In their termination letters, IDNR reiterated that there were no records of threatened or endangered species present. However, the termination letters indicated that there were 11 species designated in the Illinois Wildlife Action Plan as "Species in Greatest Need of Conservation" (SGNC). The SGNC that occur in the Big Muddy River include the Alligator Gar (*Atractosteus spatula*), Blacktail Shiner (*Cyprinella venusta*), Brown Bullhead (*Ameiurus Nebulosus*), Flier (*Centrarchus macropterus*), Mooneye (*Hiodon tergisus*), Paddlefish (*Polyodon spathula*), Pugnose Minnow (*Opsopoeodus emiliae*), Ribbon Shiner (*Lythrurus fumeus*), River Darter (*Percina shumardi*), Spottail Darter (*Etheostoma squamiceps*), and Stripetail Darter (*Etheostoma kennicotti*). IDNR also noted that the Pistolgrip (*Tritogonia verrucosa*) has also been found in the Big Muddy River. In conclusion, IDNR indicated that "strict adherence to all effluent limits and all effluent monitoring requirements in accordance with NPDES Permit IL0077666 is requested."

A basin-wide study was issued March 7, 2012 entitled "Freshwater Mussels of the Big Muddy River" prepared by the Illinois Natural History Survey: Prairie Research Institute, which detail the mussel population found in the Big Muddy River and its' basin. According to the study, no threatened or endangered mussels were found in the Big Muddy River or the Big Muddy River basin.

The mussel survey was conducted April 22-26 and June 5, 2020. The stream discharge rate at the Plumfield, Illinois gauge was between 742 and 855 cfs during this study. The permit has a condition that the mussel survey will be repeated one year after commencement of the discharge.

The survey area encompassed the width of the river from 50 m upstream to 150 m downstream of the proposed outfall location. The mixing zone has a length of 46 feet (13.3 meters) by a width of 25 feet (7.62 meters). The Survey Area was divided into 40 approximately 10x10 m cells. Four 5-minute qualitative samples were collected within each cell. Qualitative sampling entailed a diver searching the substrate, collecting all unionids encountered within the time period. Substrate composition (Wentworth scale) and water depth (meters) were recorded at the beginning of each sample. Unionids were classified as live, fresh dead, and weathered dead. Live individuals were identified to species, aged, and measured (length in millimeters). At least one individual of each live species was photographed, and (if available) a dead shell of each species was retained as a voucher specimen. All live individuals of non-listed species were relocated to a Recipient Area upstream of the project area with a similar substrate and depth profile as the Survey Area.

A total of 46 live individuals of 11 species were collected from the Survey Area. *Megalonias nervosa* was the most commonly collected species (n=13), followed by *Leptodea fragilis* (n=11) and *Potamilus alatus* (n=5); remaining species were represented by 4 or fewer live individuals each, including the following; *Fusconaia flava* (n=1), *Tritogonia verrucosa* (n=2), *Quadrula quadrula* (n=1), *Lampsilis teres* (n=4), *Truncilla truncata* (n=1), *Lampsilis cardium* (n=1), *Pyganodon grandis* (n=3), and *Lasmigona complanata* (n=4). Abundance was low, with 16 of 37 searched cells yielding no live individuals.

Unionids were scattered throughout the Survey Area; however, abundance appeared to be greater towards the downstream end of the site, as 23 of the 46 live individuals were collected there. Therefore, the greatest concentration of mussels found were approximately 80 meters downstream of the mixing zone. No mussel beds were found in the mixing zone. In the area of the mixing zone, only one live mussel was found. No state listed species (live individuals or dead shell material) were observed in this area.

Since no mussel beds were found within the mixing zone, the Agency has determined that the mixing zone satisfies 35 Ill. Adm. Code 302.102(b)(4) which states, "Mixing is not allowed in waters containing mussel beds, endangered species habitat, fish spawning areas, areas of important aquatic life habitat, or any other natural features vital to the well-being of aquatic life in such a manner that the maintenance of aquatic life in the body of water as a whole would be adversely affected."

Also, as the discharge is required to meet all WQS and permit conditions, which addresses the request from IDNR that "strict adherence to all effluent limits and all effluent monitoring requirements in accordance with NPDES Permit IL0077666 is requested."

86. Given the Big Muddy River already has elevated levels of sulfates, and manganese, mixing would be violating this regulation how can a permit be granted for a mixing zone?

**Please see response to question #7.**

87. What is the current state of the fish population in the Big Muddy? Has the Illinois EPA taken into consideration the numerous sections of the Big Muddy River downstream from the pipeline are listed not only on the National Rivers Inventory but also in the sub several state and federally listed special environmental zones and therefore has special protections?

**The Big Muddy River and tributaries are routinely sampled every five years as part of the IBS program, with the most recent sampling conducted in 2018. While there is always variability between samples due to a variety of factors including fluctuating river levels, fish populations in the mainstem Big Muddy River as well as Pond Creek are considered to be relatively stable at this time. The next IBS sampling is scheduled for 2023.**

**In IDNR's EcoCAT termination letters, IDNR indicated that there were no records of state-listed species or protected natural areas in the vicinity of the discharge of the Big Muddy River. However, IDNR did note that there were 96 species of fish in the Big Muddy River, as well as eleven fish species and one mussel designated in the Illinois Wildlife Action Plan as "Species in Greatest Need of Conservation". Please see the response to question #32 for details of Species in Greatest Need of Conservation.**

**35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**The Big Muddy River has no special designation or protection. As the Agency determined that there is no reasonable potential to exceed the WQS in the effluent for arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected. Thus, downstream uses will also be protected.**

**As all of the WQS will be met in the receiving stream, there will not be any impacts to the fish population in the Big Muddy River.**

88. Has Illinois EPA fully considered whether granting this permit for dumping more pollutants into the already impaired big muddy River will violate the law as stated in Article XI of our state constitution?

**Article XI of the state constitution establishes “a healthful environment” as a public policy of Illinois and mandates the General Assembly to pass legislation to implement and enforce that policy.**

**The Act provides the criteria that the Agency must consider in allowing discharge into Illinois waters.**

**Under the Act, the Illinois EPA is required to issue a permit to an applicant upon proof that the proposed facility or equipment will not cause a violation of the Act or promulgated regulations. See, 415 ILCS 5/39(a). This standard is a mandatory one, expressed in the language of the provision as a “duty” that is imposed upon the Illinois EPA. While Agency deliberation of certain aspects of the permit may be grounded in the exercise of discretion, the broader legal standard governing permit issuance or denial limits the discretion of the Illinois EPA. The Illinois EPA finds that the legal standard noted above has been met. Nothing in the record, including the public comments on the draft permit, adduces otherwise.**

**In this case, the applicant provided data to show that its discharge will comply with all applicable WQS. The NPDES permit, as drafted, contains limits and conditions to ensure that the discharge meets the applicable WQS, which are protective of the existing uses of the Big Muddy River.**

89. How will the Illinois EPA verify all these calibrations will work so that the effluent stays within the limits of the regulations?

In order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.

Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.

The applicant will develop a site-specific database that correlates the conductivity and chloride concentrations for the Big Muddy River and for the treated effluent. The Agency has included a requirement in the NPDES permit that requires monthly chloride samples and conductivity measurements, in the Big Muddy River (upstream and downstream) and in the effluent, to ensure that the calibration curves remain accurate. Additionally, the Agency has included a requirement in the NPDES permit that requires that the calibration curves are to be approved by the Agency, before discharge, after six months of operation, and yearly thereafter.

Monitoring results are reported on DMRs which are submitted quarterly to the Agency. The Agency runs monthly compliance reports using ICIS/ECHO to detect SNC at mine NPDES permits. ICIS/ECHO automatically detects violations such as DMR Non-Receipt, Effluent Limit, or Delinquent Schedules/Reports. If a violation is identified as SNC, CAS, on a weekly basis, determines the appropriate compliance or enforcement action to resolve the SNC violations.

The Agency will verify that the effluent stays within the limits of the regulations, by reviewing the DMRs for the mixing calculation and downstream monitor to ensure that the chloride WQS is met in the receiving stream.

90. What gives Illinois EPA confidence that there will not be acutely high concentrations that could hurt fish, mussels, plants, macroinvertebrates, and other wildlife?

**Please see the response to question #45.**

91. How current are the surveys of fish and macroinvertebrates in Pond Creek and Big Muddy River?

The fish surveys are part of a long-term monitoring program and was sampled in 2018. The company performed a macroinvertebrate survey in 2019 and are required by the NPDES permit to resample one year from the commencement of discharge from Outfall 011.

The previous IBS sampling year for the Big Muddy River basin was 2018, however, invertebrate monitoring was not completed on the Big Muddy River due to high river levels. Pond Creek was sampled in 2018 for fish and macroinvertebrates. The next IBS sampling year for the Big Muddy River basin is 2023.

The company also had Alliance Consulting perform a Benthic Macroinvertebrates Community Survey of the Big Muddy River approximately 0.77 miles downstream of the proposed outfall location. The sampling was done on November 20th, 2019. Due to the depth of the Big Muddy River and accessibility issues, the wadeable collection method was not possible. The benthic macroinvertebrates were sampled using an Ekman Dredge dropped from an abandoned railroad bridge. The mIBI scored 23.8, which is a rating of fair and 80.7% of the sample was made up of tolerant taxa. According to the report, the metrics reflect a stream with poor habitat quality, low biodiversity, and a struggling benthic macroinvertebrate community.

92. Why is Williamson Energy not required to put up a bond for repairing damage that may be caused by their operations?

IDNR/OMM does in fact require a bond to be posted for the Pond Creek facility. That Department should be contacted regarding the specifics of the bonding requirements and what material damages are covered. As noted in the response to question #6, bonding requirements are covered by 62 Ill. Adm. Code Part 1800.

93. Can Williamson Energy be responsible for restoring the fish population?

Williamson Energy is prohibited from causing water pollution that harms or kills fish or other aquatic life. If such harm occurs the Agency and the IDNR can pursue an enforcement action which may include remedies authorized under the Act and other environmental laws.

94. How do we know what contaminants could be deposited without at least a full analysis prior to permit being issued?

The contaminants of the mine's discharge are known because the facility has been discharging to the surface for over five years and has characterized the effluent in the application and antidegradation assessment.

**Because of the impaired status of Pond Creek, the permit does not authorize discharges from the proposed Outfall 009 to Pond Creek or the proposed Outfall 009ES to an unnamed tributary of Pond Creek. The proposed Outfalls 009 and 009ES have been removed from the NPDES permit.**

**For Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.**

**Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected.**

95. What happens to the wildlife that lives in these backflow areas? Why do corporations get away with dumping the true costs of their for-profit operations? Who's going to pay to clean up our waterways or deal with the cancer that will surely develop from this pollution?

**The NPDES permit requires Williamson to comply with the WQS in the waters in the Big Muddy River as well as Pond Creek and their tributaries. As these WQS are protective of the wildlife, the Agency does not expect wildlife to be impacted.**

**The Act and Board regulations require the Agency to ensure that the discharge complies with all applicable standards irrespective of cost. In this permit, the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, thus the designated uses will be fully protected.**

**For a detailed response for permit requirements, please see the response to question # 17.**

**As described in the response to question #59, if the discharge complies with the WQS, then the designated uses such as human health will be protected. In this case, the WQS will be met outside the mixing zone and zone and initial**

96. Foresight Energy is near bankrupt, who will pay for the cleanup when the company goes down? Who determines what is economically acceptable?

**See response to question #19.**

97. How will this stagnation of river water during floods impact assumptions and projections on dilution process and the distribution of polluted mine water across the landscape?

**The NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.**

**Flooding will further reduce the concentration of the parameters.**

98. Will the applicant be allowed to pump contaminants into the Big Muddy during periods when it is flowing backwards? How will the applicant monitor dilution of mine wastes in the water column during periods of backwards flow and stagnation?

**There are two scenarios where the Agency is aware of a stream or river flowing “backward”. The first is when the parent stream is low and a tributary is flowing hard, the parent will back up and flow backward on a very localized level. This is usually less than 100 yards or so from where the tributary enters. The second is when the parent stream (e.g. the Mississippi River) is rising and the tributary (in this case, the Big Muddy River) is low, the rising waters can back up into the tributary which effectively makes it flow backwards. In the case of the Big Muddy, the Agency has witnessed this occur up to several miles from the mouth of the Big Muddy. However, this discharge is approximately 85 miles from the Mississippi River, so backflow from the Mississippi River is not possible.**

**It is important to note that neither of the two situations described above are typically representative of the Big Muddy River at Outfall 011.**

**Additionally, the NPDES permit authorizes a discharge only when the Big Muddy River is between 30 cfs and 2,350 cfs, except after a one-year, 24-hour precipitation event, Outfall 011 can discharge for six consecutive days. The one-year, 24-hour precipitation event for this area is considered to be 2.97 inches.**

**If the Big Muddy River is flowing backwards, the flow will be less than 30 cfs, therefore, any discharge while the Big Muddy River is flowing backward would be prohibited.**

99. If the mine waste contaminants don't go down stream, will they spread out over fields and forests and how will the applicant monitor the distribution of mine wastes? Will contaminants become more concentrated as flood water recede? What will be the impact of these mine contaminates on farm soils and wildlife?

**The constituents discharged at the outfall location will be transported downstream by the Big Muddy River. Flood waters are not expected to**

**concentrate the discharge. In fact, flooding will further reduce the concentration of the parameters.**

**The dissolved constituents in the water, as the flood waters recede, will move with the water.**

**For a detailed response to uses, how WQS are protective of those uses, and how the diffuser meets the WQS in the mixing zone and ZID, please see the response to question #59.**

**Since WQS are met outside of the mixing zone and ZID, farm soils and wildlife are not expected to be impacted by the constituents. The additional floodwaters that will be present during floods will further reduce the concentrations.**

100. What are the impacts to the LaRue Swamp if polluted mine water seeps under the Big Muddy Levy?

**LaRue Swamp is approximately 80 miles downstream of the proposed discharge. La Rue Swamp in combination with the adjacent Pine Hills is one of the richest, most biologically diverse areas in Illinois. The Pine Hills/La Rue Swamp area contains 43% of all the plant species known from Illinois. The primary source of the swamps' water is runoff from west - facing wooded slopes and bluffs of the adjacent Pine Hills and from springs along the base of the bluffs. Therefore, the source of water for the LaRue Swamp is not the Big Muddy River. The Big Muddy River is approximately 1.9 miles Northwest of the LaRue Swamp with a levee and a stream in-between the LaRue Swamp and the Big Muddy River.**

**The constituents discharged at the outfall location will be transported downstream by the Big Muddy River. Since all water quality criteria will be met at the edge of the mixing zone and ZID, the Agency does not anticipate any downstream impacts. Thus, the Agency does not expect any impacts to the LaRue Swamp.**

101. What is the total and exact chemical composition, as well as the safety and inspection proposed by this pipeline?

**The pipeline will be constructed of high-density polyethylene (HDPE) material. Special Condition #15 has additional requirements for the pipeline including construction with new material, pressure control sensors (or other type of equipment) to stop the pumps when there is a loss of pressure the in the pipeline and inspection reports available to the inspectors when requested.**

102. Why would the Illinois EPA issue a permit to a company when a company is going into bankruptcy and leave the burden of clean up on the backs of taxpayers?

**See response to question #19.**

103. The NPDES permit does not ensure compliance as written with Illinois WQS 35 Ill. Adm. Code 302.105(a) by allowing increased discharge of chloride, sulfate, total suspended solids and other pollutants that will adversely affect existing uses of the Big Muddy River and Pond Creek and other creeks in the area. The applicants plan to prevent violations of Illinois WQS outside the mixing zone for numerous pollutants is unlikely to be implemented. Among the ways in which existing uses will be impacted will be through chemical and biological processes resulting from allowed discharges that will cause increased methyl mercury, increased phosphorus, increased cyanobacteria and decreased dissolved oxygen (DO) in the water column. Damage to existing uses may also occur through damage to creeks not receiving discharges from the mine but that may be affected in quality from reduced stream flow caused by groundwater moving downward to fill areas vacated by groundwater filling the mine.

**The permit doesn't violate 35 Ill. Adm. Code 302.105(a) because 35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.**

**WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.**

**The federal regulations at 40 CFR 131.13 authorize states to use mixing zones and zones of initial dilution to implement WQS. Illinois has adopted mixing zones and zones of initial dilution WQS located at 35 Ill. Adm. Code 302.102.**

**In the zone immediately surrounding an outfall, both the acute and the chronic criteria may be exceeded, but the acute criterion must be met at the edge of this zone, which is often referred to as the acute mixing zone or the ZID. The acute mixing zone is sized to prevent lethality to passing organisms in order to protect the designated use of the waterbody as a whole. In case of the mixing zone, which is often called the chronic mixing zone, the chronic criterion may be**

exceeded, but the acute criterion must be met. The chronic criterion is met at the edge of the chronic mixing zone. The chronic mixing zone is sized to protect the designated use of the waterbody as a whole.

A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and where certain numeric water quality criteria may be exceeded.

In this case, the applicant has proposed to install a diffuser in the Big Muddy River. Based on the Agency's review of the CORMIX model and 35 Ill. Adm. Code 302.102, the Agency determined the size of the mixing zone and ZID. Based on recommendations from the Agency, the outfall structure was reevaluated to provide better mixing. The Agency determined the size of the mixing zone and ZID that is consistent with 35 Ill. Adm. Code 302.102.

The diffuser consists of five individual staged single-port diffusers. This design maximizes the mixing zone for each flow condition in the River while allowing the facility to discharge based on the flow in the River. As the flow in the River decreases or the chloride concentration increases, the larger ports are taken off-line so that the WQS can be maintained at the edge of the mixing zone and ZID, as per 35 Ill. Adm. Code 302.102.

In order to determine the chloride concentration at the edge of the mixing zone, the facility will use upstream flow and continuous chloride concentration data and the effluent flow and continuous chloride concentration data to determine the concentration of chloride at the edge of the mixing zone, as per Special Condition No. 15 of the NPDES permit. This value will be reported on the DMR and must not exceed 500 mg/L. The upstream and effluent chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration.

Additionally, the permit also requires the facility to install a continuous monitor within 10 feet downstream of the edge of the mixing zone. The downstream chloride concentration will be determined from the use of a continuous conductivity monitor that has been correlated to the chloride concentration. This value will be reported on the DMR and must not exceed 500 mg/L.

The Agency has included a Special Condition to address this comment. Special Condition No. 16 in the final permit requires that the discharge from Outfall 011 cease under certain conditions, such as: 1) when the continuous chloride data (as measured by conductivity) is 40 percent above the chloride WQS more than 20 percent of the time; 2) when the sulfate samples are 40 percent above the sulfate WQS in more than three of the samples taken within the month; 3) when the iron (dissolved) samples are 40 percent above the iron (dissolved) WQS in more than three of the samples taken within the month; 4) when the copper samples are 20 percent above the copper WQS in more than three of the

**samples taken within the month; or 5) when the nickel samples are 20 percent above the nickel WQS in more than three of the samples taken within the month.**

**Monitoring results are reported on DMRs which are submitted quarterly to the Agency. The Agency runs monthly compliance reports using ICIS/ECHO to detect significant non-compliance (SNC) at mine NPDES permits. ICIS/ECHO automatically detects violations such as DMR Non-Receipt, Effluent Limit, or Delinquent Schedules/Reports. If a violation is identified as SNC, CAS, on a weekly basis, determines the appropriate compliance or enforcement action to resolve the SNC violations.**

**Because of the impaired status of Pond Creek, the permit does not authorize discharges from the proposed Outfall 009 to Pond Creek or the proposed Outfall 009ES to an unnamed tributary of Pond Creek. The proposed Outfalls 009 and 009ES have been removed from the NPDES permit.**

**Generally, water recharges into the ground in upland areas and discharges to surface water in lowland areas. Water recharging to the depth of the mine would be coming from upland areas further away, not from local creeks.**

**Cyanobacteria have the ability to convert nitrogen gas into inorganic forms of nitrogen needed for growth. The claim that there will be an increase in cyanobacteria is based on the assumption that there will be an increase in phosphorus. There will be no increase in phosphorus because the mine discharge doesn't contain phosphorus. Thus, there will not be an increase of cyanobacteria.**

**The effluent does not have sufficient deoxygenating chemicals or sufficient phosphorus to contribute to the DO impairment or potential impairment of phosphorus and will not cause a violation of the WQS.**

**Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected. Thus, the NPDES permit ensures compliance with the applicable WQS and uses. Regarding methyl mercury, please see response #49.**

a.) Nickel has not been properly considered and the cumulative effect of the increased concentrations of all these pollutants together has been ignored. The limits of the testing and the sensitivity of the testing methods is such that increased loading of a number of other pollutants is probable.

**The Agency did consider the additional loading for nickel in the December 12, 2016 antidegradation assessment. The antidegradation memo indicated that nickel loading would increase from 1 to 8 lbs/day with a concentration ranging from 0.004 to 0.014 mg/L.**

As part of the permitting process, the mine sampled its expected effluent for total and dissolved nickel, each with a MDL of 0.005 mg/L. For Outfall 011, the Agency determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for nickel. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for nickel.

Nickel has a reasonable potential to exceed the WQS at Outfalls 002, 006, 007, and 008 and the NPDES permit has been modified to include a nickel permit limit at each of these outfalls.

The renewed and modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfalls 006, 007, 008, and 011 for the parameters listed in Special Condition No. 18 of the NPDES permit, which includes nickel.

Also, because of the impaired status, the permit has been modified to not authorize discharges from the proposed Outfalls 009 and 009ES into Pond Creek and the unnamed tributary of Pond Creek respectively. Additionally, to address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

104. The NPDES permit does not ensure compliance as written with Illinois WQS 35 Ill. Adm. Code 302.105, and 309.141(d) and 309.143. by increasing the levels of methyl mercury and phosphorus, decreasing DO levels, and causing violations of narrative standards in the Big Muddy. The Big Muddy is already listed as impaired by methyl mercury, low DO and TSS in the receiving segment and numerous downstream segments and as potentially impaired by phosphorus.

The permit doesn't violate 35 Ill. Adm. Code 302.105 because 35 Ill. Adm. Code 302.101 divides the uses of Illinois waters into four groups: General Use; Public and Food Processing Water Supply Use; Chicago Area Water System and the Lower Des Plaines River Uses; and Lake Michigan Basin Use. General Use is used throughout the State and is applicable to the Big Muddy River and Pond Creek. The Board's rules at 35 Ill. Adm. Code 302.202 indicate that the General Use must protect the State's water for the following uses: aquatic life, wildlife, agricultural use, secondary contact use, and most industrial uses.

WQS are a set of water quality criteria sufficient to support the designated uses of each waterbody. If a waterbody has multiple use designations, the criteria must support the most sensitive use. Numeric WQS are developed for specific parameters to protect aquatic life and human health and, in some cases, wildlife

from the deleterious effects of pollutants. Illinois' numeric WQS are at 35 Ill. Adm. Code Parts 302 and 303. Human health criteria for toxic pollutants are designed to protect people from exposure resulting from consumption of fish or other aquatic organisms (e.g., mussels, crayfish) or from consumption of both water and aquatic organisms. These criteria express the highest concentrations of a pollutant that are not expected to pose significant long-term risk to human health.

For further information on the antidegradation, please see response to question #77.

The permit doesn't violate 35 Ill. Adm. Code 309.141(d) because the Upper Big Muddy River TMDL prepared a load reduction strategy to address the sedimentation/siltation impairment. The Load Reduction Strategy (LRS) identified a target of 32.2 mg/L for TSS as an average concentration. The NPDES permit has been modified to incorporate a limit of 32.2 mg/L for Outfall 011 applied as a yearly average.

The permit doesn't violate 35 Ill. Adm. Code 309.143 because for Outfall 011, the Agency performed the reasonable potential analysis to determine that the following contaminants do not have a reasonable potential to exceed the WQS in the effluent: arsenic, chromium (total), cyanide (available), iron (dissolved), lead, manganese, mercury, phenols, silver, zinc, and selenium. The Agency also determined that there is no reasonable potential to exceed the WQS outside of the mixing zone for cadmium, copper, nickel, sulfate, and chloride. Further, the Agency determined that there is no reasonable potential to exceed the acute WQS outside of the ZID for cadmium, copper, and nickel.

The federal regulations at 40 CFR 131.13 authorize states to use mixing zones and zones of initial dilution to implement WQS. Illinois has adopted mixing zones and zones of initial dilution WQS located at 35 Ill. Adm. Code 302.102.

In the zone immediately surrounding an outfall, both the acute and the chronic criteria may be exceeded, but the acute criterion must be met at the edge of this zone, which is often referred to as the acute mixing zone or the ZID. The acute mixing zone is sized to prevent lethality to passing organisms in order to protect the designated use of the waterbody as a whole. In case of the mixing zone, which is often called the chronic mixing zone, the chronic criterion may be exceeded, but the acute criterion must be met. The chronic criterion is met at the edge of the chronic mixing zone. The chronic mixing zone is sized to protect the designated use of the waterbody as a whole.

Since the discharge is required to comply with all applicable WQS prior to discharge or after mixing in the mixing zone and ZID, the designated uses will be fully protected.

The narrative standard requires “Waters of the State shall be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin.” Nothing in this discharge that would cause a narrative standard violation.

The effluent does not have sufficient deoxygenating chemicals or sufficient phosphorus to contribute to the DO impairment or potential impairment of phosphorus and will not cause a violation of the WQS. Regarding methyl mercury, please see response to question #49. Regarding phosphorus and dissolved oxygen, please see response to question #103.

a.) The antidegradation assessment makes no attempt to address impacts to mussels or even assess if mussels are present in the area, despite clear direction that Illinois’ antidegradation policy calls for the maintenance and protection of existing uses, including the prevention of a shift from pollution-sensitive to more pollution-tolerant community and the loss of species diversity (Section 302.105(a)(1)).

**Because of the impaired status of Pond Creek, the permit does not authorize discharges from the proposed Outfall 009 to Pond Creek or the proposed Outfall 009ES to an unnamed tributary of Pond Creek. The proposed Outfalls 009 and 009ES have been removed from the NPDES permit.**

A mussel survey was conducted April 22-26 and June 5, 2020 to satisfy the antidegradation regulation. The stream discharge rate at the Plumfield, Illinois gauge was between 742 and 855 cfs during this study. The permit has a condition that the mussel survey will be repeated one year after commencement of the discharge.

The survey area encompassed the width of the river from 50 m upstream to 150 m downstream of the proposed outfall location. The mixing zone has a length of 46 feet (13.3 m) by a width of 25 feet (7.62 m). The Survey Area was divided into 40 approximately 10x10 m cells. Four 5-minute qualitative samples were collected within each cell. Qualitative sampling entailed a diver searching the substrate, collecting all unionids encountered within the time period. Substrate composition (Wentworth scale) and water depth (meters) were recorded at the beginning of each sample. Unionids were classified as live, fresh dead, and weathered dead. Live individuals were identified to species, aged, and measured (length in millimeter). At least one individual of each live species was photographed, and (if available) a dead shell of each species was retained as a voucher specimen. All live individuals of non-listed species were relocated to a Recipient Area upstream of the project area with a similar substrate and depth profile as the Survey Area.

Unionids were scattered throughout the Survey Area; however, abundance appeared to be greater towards the downstream end of the site, as 23 of the 46 live individuals were collected there. Therefore, the greatest

**concentration of mussels found were approximately 80 meters downstream of the mixing zone. No mussel beds were found in the mixing zone. In the area of the mixing zone, only one live mussel was found. No state listed species (live individuals or dead shell material) were observed in this area.**

105. The NPDES permit violates 35 Ill. Adm. Code 302.105(c) by allowing new discharges to the Big Muddy River and Pond Creek that are not necessary to accommodate important social or economic development but, on the contrary, will harm social and economic development by further wedding the local economy to an industry without a long term future and a company likely to leave the community with a large environmental hazard that will have to be cleaned up with public funds. Neighbors of the mine will continue to be harmed by the mining operations. Further, the mining of coal, to the extent it occurs, and the coal is burned in China or elsewhere, will harm the local economy (and the world economy) by increasing the emission of greenhouse gases.

**As detailed in the response to the response to question #77, the applicant has provided all necessary information to satisfy the requirements of Section 302.105(c) of the Board regulations.**

**The information provided by the applicant satisfies the requirements of 35 Ill. Adm. Code 302.105(c).**

106. The NPDES permit violates 35 Ill. Adm. Code 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d), 309.143, and 309.146 by allowing a mixing zone that (the misrepresentations made in the record by the applicant notwithstanding) will in fact result in violations of applicable WQS outside the mixing zone by allowing increased discharges subject to implementation of a complex dilution and monitoring formula by an applicant that has proven itself utterly incapable of complying with the limits and reporting requirements of its current relatively simple permit and by allowing a mixing zone in Pond Creek where no dilution is available.

**The question referencing mixing is related to the proposed discharge to Pond Creek. The permit doesn't violate 35 Ill. Adm. Code 302.105(a), 304.105, 309.141(d), 309.143, or 309.146 because the permit has been modified to not authorize discharges from the proposed Outfalls 009 and 009ES into Pond Creek and the unnamed tributary of Pond Creek respectively. Additionally, to address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.**

**Also, at the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include**

**additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and copper, nickel, and zinc at Outfall 008.**

107. The NPDES permit violates 35 Ill. Adm. Code 309.146 by failing to require monitoring adequate to determine compliance with the complex dilution scheme contemplated by the permit.

**The monitoring requirements in the NPDES permit satisfy the requirements of Section 309.146 as the permit requires the following monitoring: TSS, iron (total), and manganese are required to be reported on the DMRs as a daily maximum and monthly average values. Alkalinity must be greater than acidity while pH, hardness, and flow must also be measured and reported on the DMR. The chloride (correlated to the conductivity values) is measured on a continuous basis when discharging and calculated at the edge of the mixing zone. The calculated chloride value (correlated to the conductivity values) and the downstream chloride concentration (correlated to the conductivity values) and reported on the DMR as a daily maximum value.**

**For dilution scheme for Outfall 011, please see response to question #45. For outfalls 001 through 008, please see response to question #54. For the proposed Outfall 009 and the discharges to Pond Creek, please see response to question #47.**

108. The NPDES permit violates 35 Ill. Adm. Code 302.102, 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143 because the reasonable potential test on which the public document relies was not properly performed at least with regard to mercury, copper, iron, nickel, and selenium. It appears that cadmium and manganese have also not been tested properly.

**At the direction of Illinois EPA, the applicant has conducted additional sampling in response to comments previously received for Outfalls 001-008. Based upon the additional data, the NPDES permit has been modified to include additional NPDES permit limits for mercury at Outfall 001, copper and nickel at Outfall 002, iron (dissolved) at Outfall 003, copper at Outfall 004, nickel at Outfall 006, iron (dissolved), nickel, and zinc at Outfall 007, and cadmium, copper, nickel, and zinc at Outfall 008.**

**Because of the impaired status, the permit has been modified to not authorize discharges from the proposed Outfalls 009 and 009ES into Pond Creek and the unnamed tributary of Pond Creek respectively. Additionally, to address the impaired status of Pond Creek, the permittee will be required to install and operate a 1.0 MGD RO unit by December 31, 2023. The permittee is authorized to discharge the RO permeate (treated water) to one of the eight sedimentation**

basins that discharge to Pond Creek via Outfalls 001 – 008 and the RO reject water to the Big Muddy River via Outfall 011.

The renewed and modified NPDES permit requires monthly effluent monitoring for the first year following the effective date of the permit after which semi-annual sampling for Outfall 011 for the parameters listed in Special Condition No. 18 of the NPDES permit. These parameters are: arsenic, barium, cadmium, chromium (hexavalent), chromium, copper, lead, manganese, mercury, nickel, phenols, selenium, silver, and zinc.

Manganese is regulated in the permit at Outfalls 006, 007, 008 and 011.

Thus, the permit, as drafted, meets the requirements of 35 Ill. Adm. Code 302.102, 302.105(a), 304.105, 309.141(d) and 309.143. Also see response to questions #17, #60, #104, and #106.

109. The NPDES permit violates 35 Ill. Adm. Code 302.102, 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143 because the testing done for mercury was not done with sufficient sensitivity to determine whether there is a reasonable potential for the discharge to cause or contribute to violations of the applicable 12 n[g/L WQS (35 Ill. Adm. Code 302.208(f)

At the direction of Illinois EPA, the applicant has conducted additional sampling for mercury in response to comments previously received for Outfalls 001 through 008. The MDL in the additional sampling is 0.5 nanograms per liter. Based upon the additional data at this MDL, the NPDES permit has been modified to include a limit for mercury at Outfall 001. The data indicate that there is no reasonable potential for Outfalls 002 through 008 to exceed the WQS for mercury. Thus, the permit, as drafted, meets the requirements of 35 Ill. Adm. Code 302.102, 302.105(a), 304.105, and 309.141(d) and 309.143.

### **General Statements Regarding the NPDES Permit**

The Illinois EPA received hundreds of comments during the public comment period of the draft permit and during the comment period from the public hearing. Below is the categorized summary of those comments received.

#### Flooding

#### Short & long-term impacts of volume & contaminants on Wildlife

- Mussels
- Illinois Chorus Frog
- Bald Eagle
- Egrets & Herons
- Red Headed woodpecker

- River otter
- Migrating waterfowl

Impact to Aquatic Life

- Long-term exposure
- Micro/Macro-Invertebrate abundance & diversity
- Fish reproduction, abundance & edibility
- Microbial communities

Human health/social costs

Overall environmental impact

Require Treatment & Economic Feasibility of Alternatives

- Reverse Osmosis
- Crystallization

Impact to recreational uses/tourism/economic development

Cumulative water quality impacts

- Considering all outfalls
- Considering other sources
- Segment already impaired for TSS/sediment/iron/mercury/others
  - o Sedimentation
  - o TSS

**Acronyms and Initials**

CFR	Code of Federal Regulations
DMR	Discharge Monitoring Report
ECHO	Enforcement and Compliance History Online
IBS	Intensive Basin Survey
IDNR	Illinois Department of Natural Resources
Illinois EPA	Illinois Environmental Protection Agency
ILCS	Illinois Compiled Statutes
Ill. Adm. Code	Illinois Administrative Code
MDL	Minimum Detection Limit

NPDES	National Pollutant Discharge Elimination System
pH	A Measure of Acidity or Alkalinity of a Solution
RO	Reverse Osmosis
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Illinois EPA
ZID	Zone of Initial Dilution

### **Distribution of Responsiveness Summary**

An announcement that the NPDES permit decision and accompanying responsiveness summary is available on the Illinois EPA website, was mailed or e-mailed to all who registered at the hearing and to all who sent in written comments. Printed copies of this responsiveness summary are available from Barb Lieberoff, 217-524-3038, e-mail: [barb.lieberoff@illinois.gov](mailto:barb.lieberoff@illinois.gov).

### **Who Can Answer Your Questions**

#### **Illinois EPA NPDES Permit:**

NPDES Permit .....	Iwona Ward .....	217-782-3362
Legal questions .....	Stefanie Diers.....	217-782-5544
Water Quality Standards Unit .....	Scott Twait.....	217-782-0610
Public hearing of December 18, 2019 .....	Jeff Guy.....	217-785-8724

The public hearing notice, the Public Notice, the hearing transcript, the NPDES permit and the responsiveness summary are available on the Illinois EPA website (it may be necessary to paste the web address into the window of your internet browser and then enter "IL0077666" in the search box):

<https://www2.illinois.gov/epa/public-notices/Pages/npdes-individual-notices.aspx>



**SIERRA CLUB**

-ILLINOIS CHAPTER-

70 E. LAKE, SUITE 1500  
CHICAGO, IL 60601  
(312) 251-1680



prairieriversnetwork

August 12, 2019

*Sent via email to [darin.lecrone@illinois.gov](mailto:darin.lecrone@illinois.gov)*

Darin LeCrone

IEPA Bureau of Water, Water Pollution Control Permit Section  
1021 North Grand Ave East  
Springfield, IL 62794-9276

**Re: Comment Regarding NPDES Permit No. IL0077666, Notice No. 7516c  
Williamson Energy, LLC, Pond Creek Mine  
REQUEST FOR PUBLIC HEARING**

Dear Mr. LeCrone and other IEPA officials,

The Illinois Chapter of the Sierra Club and Prairie Rivers Network object to the provisions of the draft NPDES permit proposed to be reissued to Williamson Energy, LLC to allow mine waste from the Pond Creek mine to be discharged into Pond Creek, a Pond Creek tributary and the Big Muddy River. We request a hearing be held so our members and other members of the public can share our concerns and ask questions of Agency staff.

The Illinois Chapter of Sierra Club represents over 33,000 members and Prairie Rivers Network has 1,000 members in Illinois. Our members are affected by pollutant discharges into Pond Creek, the Pond Creek tributary, the Big Muddy River and downstream water bodies and would use these waters more frequently were they not affected by pollution from this facility and other sources. Our members and others rely on clean waters in the Big Muddy watershed for activities including hunting, recreational fishing, commercial fishing, trapping, paddling, boating, birdwatching and other wildlife viewing. We are concerned about the additional harm that this facility may cause if this permit is reissued without additional protections.

### **OBJECTIONS BASED ON THE CURRENT RECORD AVAILABLE TO COMMENTERS**

Sierra Club and Prairie Rivers Network object to the permit on the following grounds, each described in greater detail below:

- I. The facility has current and recent violations of their NPDES permit that have yet to be resolved.
  - II. In view of the frequent violations and the danger of discharges of chemicals that are toxic to aquatic life, the monitoring is inadequate.
  - III. The Chloride acute limit is too weak and the permit lacks a chronic chloride limit and thus fails to protect aquatic life and violates 35 Ill. Adm. Code 302.105(a), 302.210, 304.105. And 309.143.
  - IV. The Reasonable Potential Analysis is improper because the IEPA did not use the multipliers recommended by U.S. EPA to assure measure reasonable potential or require an adequate amount of testing. See *Des Plaines Watershed Alliance v. Illinois EPA*, 2007 Ill. Env. Lexis 149 \*138 (IPCB 2007).
  - V. The potential effect of the increased discharges has not been determined as to flooding, groundwater use and other factors.
  - VI. Increased chloride levels may increase toxicity of algal blooms in Big Muddy and other waters.
- I. The facility has current and recent violations of their NPDES permit that have yet to be resolved and better monitoring is necessary.**

According to EPA's Enforcement and Compliance History Online (ECHO) database, this facility is currently in noncompliance with its CWA permit, and has been in noncompliance for 5 of the past 12 quarters reported.<sup>1</sup> The Detailed Facility Report shows additional information of concern, including:

- The last inspection was conducted almost 10 years ago on 09/09/2009
- The current compliance status is listed as "Violation Identified"
- The most recent quarter reported (04/01-07/26/19) reports a violation of the chloride limit by 38% and a violation of the sulfate limit by 108%
- Violations of the chloride and sulfate limit by 220% are reported for 3rd Quarter 2018, 367% for chlorides in 2nd Quarter 2017, and 620% for chlorides in 2nd Quarter 2016.
- It appears that the pH limit was violated in Spring 2018 according to IEPA records.
- IEPA should not issue a new and expanded permit without determining whether permittee has been filing DMRs properly under its existing permit. It appears that the discharger may be only filing data regarding pH and settleable solids and is otherwise failing to comply with reporting requirements in its current permits. For example, Outfall

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<sup>1</sup> <https://echo.epa.gov/detailed-facility-report?fid=110023026884>

003 reports settleable solids and pH frequently between 2015 and 2019, but the measurements for chloride and other chemicals are reported as “no discharge.” Other outfalls have similar issues. The lack of information on the quantity and nature of past discharges makes it impossible to determine the effect of potential future discharges. The monitoring required by the draft permit is inadequate under 35 Ill. Adm. Code 309.146.

**II. In view of the frequent violations and the danger of discharges of chemicals that are toxic to aquatic life, the monitoring is inadequate.**

The DMRs for 2018 that are kept by IEPA seem to only report on pH and settleable solids. Discharge monitoring should include data on volume of discharge to allow determination of impact on downstream water quality.

**III. The Chloride acute limit is too weak and the permit lacks a chronic chloride limit and thus fails to protect aquatic life and therefore the permit violates 35 Ill. Adm. Code 302.105(a), 302.210, 304.105. And 309.143.**

Studies and evidence presented in PCB 18-32 shows that acute limit should be less than 500 mg/L given hardness of 141 and temperatures in excess of 25 C in Big Muddy most of May to September. Mixing that would allow levels that exceed protective levels under 35 Ill. Adm. Code 302.102(b)(4) should not be allowed. No increased discharge should be allowed to any area where it might harm existing uses under 302.105(a). The lack of a chronic limit is intolerable given that permit allows dry weather discharges. As there is no chronic limit provided by Illinois numeric standards, chronic limit should be calculated using studies and calculations presented by Dr. Soucek in PCB 18-32 to establish chronic limits.

Additional pollution loading of the river, particularly at times of low flow, are a concern to us in addition to the known problems high levels of chlorides cause for fish and other aquatic life. Chlorides are stated in some sources to be accumulative. There is nothing in the application that was found to assess what the daily and long-term biological and water quality impacts of the high levels of chlorides and sulfates will do.

Additionally, the permit has granted mixing zone in Pond Creek (Outfall 009), and the modeling shows that chloride concentrations could be in the range of 188 to 411 mg/L, well above a potential future chronic standard of 283 mg/L.

**IV. The Reasonable Potential Analysis is improper because the IEPA did not use the multipliers recommended by U.S. EPA to assure measure reasonable potential or require an adequate amount of testing. See *Des Plaines Watershed Alliance v. Illinois EPA*, 2007 Ill. Env. Lexis 149 \*138 (IPCB 2007).**

Despite the IPCB's New Lenox decision in *Des Plaines Watershed Alliance v. Illinois EPA*, 2007 Ill. Env. Lexis 149 \*138 (IPCB 2007), in the reasonable potential analysis in this case IEPA declines to use the multipliers that have been determined by U.S. EPA in its Technical Support Document to properly analyze the risk of toxic discharges. The grounds given for this is that IEPA believes that the multipliers are too large when there are few samples.

There is, however, a way to avoid the alleged problem cited by IEPA. This is to require more samples. This will bring down the U.S. EPA multiplier without risking the environment.

**V. The potential effect of the increased discharges has not been determined as to flooding, groundwater use and other factors.**

The potential effect of the increased discharges has not been determined as to flooding, groundwater use and other factors all of which are relevant to determining whether the permit would in fact benefit social or economic development in the area. Further, increased chloride levels may increase toxicity of algal blooms in Big Muddy and other waters.

The Big Muddy River is indicated as Public Waters by IDNR (<https://www.dnr.illinois.gov/WaterResources/Pages/PublicWaters.aspx>). The full impacts of this added discharge do not appear to have been adequately evaluated and essential information for this application appears to be lacking. There is no information on what the added 2,700,000 to 3,500,000 gallons per day will mean to erosion impacts, river water levels, public use of the river for recreation or other public uses. This river is already prone to flooding and has documented low flows which clearly could mean different impacts from the proposed discharges that have not been adequately assessed.

There is no information on what the stated rate of groundwater pumping and groundwater drawdown are doing to the hydrology of the area. There is no information on the impacts to other springs, streams or non-potable water uses in the county or if there are any long-term concerns for this withdrawal of groundwater.

**VI. Increased chloride levels may increase toxicity of algal blooms in Big Muddy and other waters.**

There are studies indicating that increased chloride levels may increase the levels of cyanobacteria in water bodies and the potential for toxic algal blooms. (Attachments 1-4) IEPA must thoroughly consider this issue before allowing the levels of chloride discharger contemplated by this draft permit.

Also, the permit proposes to use conductivity as a surrogate for chlorides. Other factors may cause conductivity to be high without chlorides also being high. This could result in a poor calibration curve unless done properly.

**QUESTIONS AND ISSUES FOR THE PUBLIC HEARING**

There is a large level of public interest in this permit (See for example, [https://thesouthern.com/news/local/environment/residents-still-concerned-as-idnr-decides-whether-to-grant-permit/article\\_a08dfa90-d882-5c01-90e2-83b24b4b3f34.html?fbclid=IwAR3wPxIKo v0ReSj9DKVG26vIHRO9BvNmfJ13H\\_Bciq-JzC5LCe7vjB\\_nPes](https://thesouthern.com/news/local/environment/residents-still-concerned-as-idnr-decides-whether-to-grant-permit/article_a08dfa90-d882-5c01-90e2-83b24b4b3f34.html?fbclid=IwAR3wPxIKo v0ReSj9DKVG26vIHRO9BvNmfJ13H_Bciq-JzC5LCe7vjB_nPes)) and the complex facts and technical issues plainly require that a public hearing be held. In addition to discussion of the issues raised by our objections to the draft permit stated above, issues that should be discussed at the hearing include:

1. What are the daily water quality, biological, and downstream impacts of this proposal on the Big Muddy River?
2. What the actual discharges and pollutant levels have been for the last five years?
3. What will the proposed daily discharge of high levels of chlorides and sulfates do to existing fish and aquatic life in the Big Muddy River and to other downstream uses?
4. What volume of water will be discharged to the Big Muddy River? Is 11 cubic feet per second a hard limit?
5. What are the impacts of the ongoing pumping of groundwater at the mine and its potential effect on social and economic development in the area?
6. Whether use of groundwater to dilute mining waste will cause or contribute to violations of water quality standards in water bodies hydrologically connected to that groundwater?
7. Whether the monitoring that has been done of the applicant's effluent is adequate to determine its potential effect?

8. What fish and aquatic species are currently utilizing the proposed discharge section of the Big Muddy River and are there any locations downstream that have mussel populations? What are the biological and environmental impacts of the high chloride levels?
9. The uses of the Big Muddy River and other downstream waters that might be adversely affected by the proposed permit?
10. Whether there should be a total dissolved solids or conductivity limit given the science presented in the U.S. EPA conductivity guidance ? See Draft Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity. EPA, December 23, 2016.
11. Wastewater treatments for the polluted water to be discharged under the permit that are alternatives to simple dilution and primitive lagoon treatment?
12. Whether there are alternatives to discharging the wastewater to rivers and streams?
13. Whether coal production can properly be considered as a benefit given the effects of coal combustion on the global climate?

A public hearing would allow an opportunity to have these and other questions answered, and would give our members and other local community members a chance to raise their questions and concerns.

Thank you for your attention to our comments. We look forward to your response.

Sincerely,

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cc: Williamson Energy, LLC (by mail)  
Kevin Pierard, Region 5, USEPA (by email)  
Al Keller and Sanjay Sofat (by email)

Attachment 1- Understanding the Effect of Salinity Tolerance on Cyanobacteria Associated with  
a Harmful Algal Bloom in Lake Okeechobee, Florida

Attachment 2- Salting our Freshwater Lakes

Attachment 3- Road Salts as Environmental Constraints in Urban Pond Food Webs

Attachment 4- Salty fertile lakes: how salinization and eutrophication alter the structure of  
freshwater communities

January 17, 2020

Barb Lieberoff, Mail Code #5  
Re: Pond Creek Mine NPDES  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P. O. Box 19276  
Springfield, IL 62794-9276

Sent via email to [epa.publichearingcom@illinois.gov](mailto:epa.publichearingcom@illinois.gov)

Re: NPDES Permit No. IL0077666, Notice 7516c- Williamson Energy, LLC

Dear Ms. Lieberoff and other Illinois EPA officials;

The proposed permit plainly cannot be legally granted by the Illinois Environmental Protection Agency (IEPA) based on the current record. Further, any attempt to remedy the grossly defective draft permit and permit record with new documents or a revised permit cannot be allowed to result in a new permit being issued without re-noticing the revised permit and allowing a further public hearing based on a properly supported public notice and antidegradation analysis.

As shown at the public hearing held December 18, 2019, and confirmed by the comments and science submitted with this written comment including the attached comments of Dr. Matthew Baker (Ex. A) and Dr. JoAnn Burkholder (Ex. B), the permit would allow substantial harm to the environment and its issuance would violate numerous provisions of law.

### **Commenting Organizations**

This letter includes the post-hearing comments of Prairie Rivers Network, Sierra Club and Southern Illinoisans Against Fracturing Our Environment (SAFE).

Prairie Rivers Network (PRN) works to protect water, heal land, and inspire change and their energy program works to reduce the impact of coal on rivers and groundwater across the state. PRN has 1200 members, including members who live near and use the Big Muddy River watershed and downstream areas for fishing, paddling, birdwatching, and other recreational activities. Amanda Pankau, staff member of Prairie Rivers Network, attended the hearing and gave testimony and asked clarifying questions.

Sierra Club has 100,000 members and supporters across Illinois who seek to restore and protect a clean and healthy environment for all residents of Illinois. Sierra Club members attended the hearing and gave testimony, including Lucia Amorelli, Jean Sellar, Jane Cogie, Connie Schmidt, Barbara McKasson, and Albert Ettinger. Our members are affected by pollutant discharges into Pond Creek, the Pond Creek tributary, the Big Muddy River and

downstream water bodies and would use these waters more frequently were they not affected by pollution from this facility and other sources. Our members are threatened by the proposed degradation of the Big Muddy, Pond Creek and other downstream and adjacent waters. Our members and others rely on clean waters in the Big Muddy watershed for activities including hunting, recreational fishing, commercial fishing, trapping, paddling, boating, birdwatching and other wildlife viewing.

Southern Illinoisans Against Fracturing Our Environment (SAFE) is an organization based in Southernmost Illinois and has members who live adjacent to the Big Muddy River, and who enjoy kayaking, canoeing, and birdwatching along the river. Members living next to the river experience issues with flooding of the Big Muddy with regularly occurring precipitation events as we did last weekend, January 11 when 4-5" pushed flood waters into the back yard of members' homes. Numerous SAFE members were present at the IEPA hearing on December 18, 2019, including Jan Thomas, Cameron Smith, Tabitha Tripp, and Tenney Naumer.

### Legal Overview

The hearing and documents obtained through the Illinois Freedom of Information Act (FOIA) disclosed that the permit cannot be legally granted under 35 Ill. Adm. Code 302.102, 302.105, 304.105, 309.141(a) and (d), 309.143(a) and 309.146 because the draft permit as written does not ensure compliance with Illinois water standards or permitting rules and would violate at least the following applicable regulations:

- **35 Ill. Adm. Code 302.105(a)** (Tier 1 antidegradation) by allowing increased discharges of chloride, sulfate, total suspended solids and other pollutants that will adversely affect existing uses of the Big Muddy River and Pond Creek and other creeks in the area. Among the ways in which existing uses will be impacted will be through chemical and biological processes resulting from allowed discharges that will cause increased methyl mercury, increased phosphorus, increased cyanobacteria and decreased dissolved oxygen (DO) in the water column. Damage to existing uses may also occur through damage to creeks not receiving discharges from the mine but that may be affected in quality from reduced stream flow caused by groundwater moving downward to fill areas vacated by groundwater filling the mine.
- **35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** by increasing the levels of methyl mercury and phosphorus, decreasing DO levels, and causing violations of narrative standards in the Big Muddy. The Big Muddy is already listed as impaired by methyl mercury, low DO and TSS in the receiving segment and numerous downstream segments and as potentially impaired by phosphorus.
- **35 Ill. Adm. Code 302.105(c)** (Tier 2 antidegradation) by allowing new discharges to the Big Muddy River and Pond Creek that are not necessary to accommodate important social or economic development but, on the contrary, will harm social and economic development by further wedding the local economy to an industry without a long term future and a company likely to leave the community with a large environmental hazard

that will have to be cleaned up with public funds. Neighbors of the mine will continue to be harmed by the mining operations. Further, the mining of coal, to the extent it occurs and the coal is burned in China or elsewhere, will harm the local economy (and the world economy) by increasing the emission of greenhouse gases.

- **35 Ill. Adm. Code 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d), 309.143, and 309.146** by allowing a mixing zone that (the misrepresentations made in the record by the applicant notwithstanding) will in fact result in violations of applicable water quality standards outside the mixing zone by allowing increased discharges subject to implementation of a complex dilution and monitoring formula by an applicant that has proven itself utterly incapable of complying with the limits and reporting requirements of its current relatively simple permit and by allowing a mixing zone in Pond Creek where no dilution is available.
- **35 Ill. Adm. Code 302.102(a), 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** by failing to protect mussels.
- **35 Ill. Adm. Code 146** by failing to require monitoring adequate to determine compliance with the complex dilution scheme contemplated by the permit.
- **35 Ill. Adm. Code 302.102, 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** because the reasonable potential test on which the public document relies was not properly performed at least with regard to mercury, copper, iron, nickel, and selenium. It appears that cadmium and manganese have also not been tested properly.
- **35 Ill. Adm. Code 302.102, 302.105(a), 35 Ill. Adm. Code 304.105, and 309.141(d) and 309.143** because the testing done for mercury was not done with sufficient sensitivity to determine whether there is a reasonable potential for the discharge to cause or contribute to violations of the applicable 12 ng/L water quality standard (35 Ill. Adm. Code 302.208(f)).<sup>1</sup>

**I. Tier 1 Antidegradation - Existing uses are not being Protected in Violation of 35 Ill. Adm. Code 302.105(a).**

The discharger purports to be establishing a complex scheme to prevent violations of Illinois water quality standards outside the mixing zone for numerous pollutants, but the scheme for meeting the standard is unlikely to be implemented and the criteria are not protective of existing uses as to numerous pollutants. The segment of the Big Muddy where the proposed discharge will be located is designated as impaired for Aquatic Life, Fish Consumption and Primary Contact Recreation. However, fishing occurs in the Big Muddy and over ten thousand pounds of fish are caught from the river each year, according to IDNR data (Ex. I)

In particular, the permit is not protective of existing uses because the impact of the increased chloride, conductivity, sulfate, total suspended solids (TSS), copper, iron, manganese, and nickel has not been properly considered and the cumulative effect of the increased

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<sup>1</sup> 415 ILCS 5/11 and the Illinois Pollution Control Board regulations require that IEPA “ensure” that every NPDES permit prevent discharges of pollutants that have a reasonable potential of violating any Illinois water quality standard. *Prairie Rivers Network v. Illinois PCB 2016 IL App (1st) 150971* par. 26.

concentrations of all of these pollutants together has been totally ignored.<sup>2</sup> Further, the background levels of chloride have not been properly stated and the amount of acidity and other pollutants that will enter the waters is not being properly monitored.

The reality is that the permittee intends to continuously discharge at the maximum allowable flow rate in order to get rid of all the saline groundwater pouring into the mine. Their own report admits this.<sup>3</sup> This is also shown through estimating how much discharge could have been received by the Big Muddy based on the historical flow record. The mine estimates that, currently, 2.7 million gallons per day of mine water will need to be pumped out, and this could increase up to 3.5 mgd.<sup>4</sup> Assuming that the chloride concentrations reach levels similar to those seen at Sugar Camp mine, as is anticipated,<sup>5</sup> the load that the Big Muddy could carry without violating the 500 mg/L chloride standard at the edge of the mixing zone would range from 1.8 to 4.7 mgd, based on historical flow records.<sup>6</sup> On the low end of that range (drier years), when the Big Muddy could only take an average daily discharge of 1.8 mgd from the mine, the river would not have been able to assimilate the entire 2.7 mgd of mine waste without violating water quality standards (which, again, could increase to 3.5 mgd in the future). This means that the mine would be discharging at its limit the whole year. Even at the high flow end of this estimate, where the Big Muddy could supposedly assimilate 4.7 mgd, the mine would still be often be pumping near the limit. The flow limitations from the mixing equation, then, are not some theoretical maximum that the mine might hit. The mine will be operating at this limit nearly all the time when the infiltrating groundwater reaches anticipated levels.<sup>7</sup>

Continual discharge at maximum levels would raise the background chloride concentrations of the Big Muddy downstream to higher levels. A crude approximation, assuming the applicant can meet the limit of 500 mg/L Chloride in  $\frac{1}{4}$  of the river for mixing, shows that the chloride levels in the river would increase as follows:

Background Concentration: 108 mg/L starting level

Mix with Sugar Camp:  $0.25 * 500 \text{ mg/L} + 0.75 * 108 \text{ mg/L} = 206 \text{ mg/L}$

Mix with Pond Creek:  $0.25 * 500 \text{ mg/L} + 0.75 * 206 \text{ mg/L} = 280 \text{ mg/L}$

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<sup>2</sup> The limits of the testing and the sensitivity of the testing methods is such that increased loading of a number of other pollutants is probable.

<sup>3</sup> Conceptual Diffuser Design: "The controlled low-flow periods have in the past extended for more than a year. The Mine cannot hold water for that long of a period. At the same time, the Mine cannot discharge the full amount of water that it needs to at the low flow condition. The solution is to discharge some water all of the time, increasing the discharge as conditions allow." page 6-1

<sup>4</sup> Anti-degradation Assessment Pond Creek No. 1 Mine ((November 18, 2016) ("Anti-degradation Assessment") pg 16

<sup>5</sup> Conceptual Diffuser Design page vii

<sup>6</sup> Conceptual Diffuser Design page viii

<sup>7</sup> Indeed, the diffuser design document states "The controlled low-flow periods have in the past extended for more than a year. The Mine cannot hold water for that long of a period. At the same time, the Mine cannot discharge the full amount of water that it needs to at the low flow condition. The solution is to discharge some water all of the time, increasing the discharge as conditions allow."

In other words, the entire Big Muddy downstream would be forced to sustain concentrations above the United States Environmental Protection Agency (U.S. EPA) recommended chronic chloride standard of 230 mg/L, which recent science shows is not adequate to protect aquatic life (see *infra*), and any additional downstream discharge of chloride would push the Big Muddy further beyond the current outdated and insufficiently stringent U.S. EPA recommended criteria.<sup>8</sup>

**A. Increased loadings of chloride will harm existing uses.**

The applicant purports that it will establish a complex scheme for prevention of violation of the Illinois 500 mg/L acute chloride standard. However, it appears that the permit applicant does not intend to monitor directly for chloride in either the discharge or the Big Muddy River but, rather, will be estimating chloride levels from conductivity data. Problems with the correlation are discussed in Section V below.

Considering just the direct effects of chloride alone, there are at least four fatal problems that preclude granting the permit under 302.105(a) and numerous other provisions of law.

First, the monitoring proposed is not properly spelled out or enforceable and the applicant intends to monitor conductivity rather than chloride directly. The levels of chloride present given a particular level of conductivity varies from place to place and time to time as was admitted by the Agency during the hearing. See also, Comment of Dr. Burkholder (Ex. B, p.6). Thus, the permit applicant has not presented any sound methodology for making a reasonable estimate of chloride levels with the equipment that it plans to use. Moreover, as will be discussed further in Section V below, it is apparent that this discharger, which has committed numerous permit violations as well as violations of reporting requirements, is utterly incapable of implementing the complex monitoring and discharging scheme it pretends that it will utilize.

Second, the available data indicates that for the Antidegradation Assessment the applicant and IEPA are using an estimate of the background level of chloride that is lower than that shown by the available data. The current antidegradation assessment prepared by the mine notes that the 90th percentile background level of Chloride is 30 mg/L,<sup>9</sup> and the report states this number comes from Illinois EPA. An evaluation of available chloride data just upstream of the proposed discharge shows that a proper Antidegradation assessment would include an updated 90th percentile background for chloride. The last five years of water quality data from the Big Muddy at Plumfield (segment N-11) just north of the proposed discharge point show that the 90th percentile chloride concentration is greater than 103 mg/L. See also, Comment of Dr. Baker (Ex. A, p.3).

Further, the entire scheme assumes without evidence that all of the chloride discharged into the Big Muddy will flow downstream without any adverse impact and that no chloride will be stored

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<sup>8</sup> The U.S. EPA chronic water quality standard for chloride is contained in Ambient Water Quality Criteria for Chloride - 1988 EPA 440/5-88-001 (February 1988) available on the U.S. EPA website.

<sup>9</sup> Antidegradation Analysis page 12 (pdf 13)

in groundwater, side channels, sediment or biota to re-emerge into the river at a later time when the applicant under its scheme may be discharging chloride at a higher rate than would be allowed. If a portion of the high chloride discharged during high-flow periods is still present in the system when flows decrease, violations of the 500 mg/L acute standard can be expected. See also Comment of Dr. Burkholder on the chemical interactions between the overlying water and stream sediments (Ex. B, p.5).

Still further, it is clear that the Illinois 500 mg/L chloride standard is not protective of existing uses against chronic toxicity especially during warm weather. As was discussed by Professor David Soucek of the University of Illinois in IPCB 18-32, the entire record of which is incorporated by reference in opposition to this permit. A properly protective chronic standard adjusted to account for the water temperature and hardness factors that may be present during the proposed discharges would require prohibiting discharges that would cause chronic levels in the Big Muddy to exceed the levels indicated as safe by Dr. Soucek's studies and the studies on which he relied (Ex. C).

#### **B. Impact of increased and high conductivity has not been assessed.**

There is abundant scientific evidence to suggest that total conductivity itself is a parameter that may affect existing uses. See Comment of Dr. Baker (Ex. A, p.3). This was further documented in the Draft Field Based Methods for Developing Aquatic Life Criteria (U.S. EPA 2016) (Ex. D). Neither the applicant nor IEPA have apparently given any thought as to how increased conductivity might affect existing uses in Pond Creek or the Big Muddy River. The available evidence indicates that harm to existing uses will occur.

#### **C. Increased chloride and sulfate will increase toxic mercury levels.**

It is well established that the Big Muddy is already impaired by methyl-mercury pollution and that increased chloride in a water body will increase the level of mercury released from the sediments in a water body that will take toxic forms (methyl-mercury and others). See Illinois 303(d) list<sup>10</sup>; Comments of Dr. Burkholder (Ex. B, pp. 1-2); and Hearing Transcript (Barb McKasson at p.110-111). Accordingly, the permit would allow increased impairment of existing uses, harm public health and commercial fishing, as well as violate other provisions of Illinois Law to be discussed below.

Moreover, as discussed in Section III below, potential mercury levels in the discharge have not been tested using sufficiently sensitive methods or using a proper reasonable potential analysis.

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<sup>10</sup> Currently available at:

<https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdl/ Pages/303d-list.aspx>

**D. The effects of increased sulfate, TSS, copper, iron, cadmium, selenium, hydrogen sulfide, acidity, and nickel on existing uses have not been properly determined**

No effort has been made to properly estimate the high levels of these pollutants that may occur in the discharge under the USEPA Technical Support Document EPA/505/2-90-001, PB91-127415 (March 1991)<sup>11</sup>. The fact that the applicant has chosen to take very few samples is no excuse for not using the proper multipliers needed to determine the potential levels of those pollutants. See *Illinois EPA v. Illinois PCB*, 386 Ill. App. 3d 375, 387 (Ill. App. 2008).<sup>12</sup>

Further, the potential for the discharge to cause the creation of toxic hydrogen sulfide must be considered given the increase in sulfate that would be allowed in this permit. See Comment of Dr. Burkholder (Ex. B, p. 5). Still further, the increased toxicity in the mixing zone will have the effect of increasing biological oxygen demand and, thus, increasing the existing violation of the DO standard in violation of 302.105(a) and the other cited regulations that prohibit allowing a discharge that will cause or contribute to violations of state water quality standards. See also, 40 CFR 122.44(d) and Comment of Dr. Burkholder (Ex. B, p.4)

Still further, it appears that levels of extreme acidity may be found in the discharge as shown by the discharge monitoring report for Outfall 7 in September 2016, June 2017, December 2017, March 2018 for low pH, and at Outfall 8 in September 2016, June 2017, and December 2017 for low pH (Ex. F). The Big Muddy is already impaired by low pH. Given these problems with low pH discharges, we question why the Agency is permitting outfalls 006, 007 and 008 as acid mine drainage. IEPA cannot grant a permit unless the proposed discharge will not increase the existing pH impairment.

**E. The cumulative effects of all the increased pollutants and the effects of existing low dissolved oxygen conditions and other stressors must be considered.**

Any proper analysis of the potential effect of the proposed discharge would consider the cumulative effects of all of the pollutants and stresses that it is proposed to increase together and in the context of the fact that the Big Muddy River is already plagued by dissolved oxygen levels that regularly fall below applicable Illinois water quality standards. The proposed discharge is very likely to exacerbate the existing aquatic life impairment. See comment of Dr. Baker (Ex. A, p.3) and comment of Dr. Burkholder (Ex. B, p.6-7).

**F. IEPA must consider the effects of the proposed discharges on Pond Creek and on other creeks in the vicinity of the mine.**

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<sup>11</sup> Currently available at: <https://www3.epa.gov/npdes/pubs/owm0264.pdf>

<sup>12</sup> IEPA in 2016 did a reasonable potential analysis of some of the outfalls based in each case on one sample (Ex. E). Reasonable potential was found at one or more outfalls for cadmium, copper, nickel, mercury, and silver. Cadmium was found at levels above the acute standard in numerous outfalls.

IEPA must also determine the potential effect of allowing this discharge on creeks in the area of the mine, the existing uses of which may be affected by drawdowns of groundwater and surface waters that may be connected to the saline aquifer the mine is now draining.

**G. The permit makes no assessment of the effect of the discharge on mussels.**

The permit and the antidegradation assessment make no attempt to address impacts to mussels or even assess if mussels are present in the area, despite clear direction that Illinois' antidegradation policy calls for the maintenance and protection of existing uses, including the prevention of a shift from pollution-sensitive to more pollution-tolerant community and the loss of species diversity (Section 302.105(a)(1)). Sensitive mussels have been shown to be killed in chloride/sulfate mixtures when sulfate is much lower than what would be allowed in the permit.<sup>13</sup>

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<sup>13</sup> Freshwater mussels are one of the most imperiled groups of organisms. Nearly 70 percent of these species are designated either as threatened, endangered or in decline (Williams, JD, ML Warren, KS Cummings, JL Harris, RJ Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. Fisheries 18, 6-22.) Recent studies have shown that for some contaminants, freshwater mussel glochidia and juveniles are more sensitive than standard test organisms, leading to concerns that U.S.EPA chronic criteria, which are 230 mg/L, do not adequately protect freshwater mussels Wang, N., CD Ivey, RA Dorman, CG Ingersoll, J Steevens, EJ Hammer, CR Bauer, and DR Mount. 2018b. Acute toxicity of sodium chloride and potassium chloride to a unionid mussel (*Lampsilis siliquoidea*) in water exposures. Environmental Toxicology and Chemistry. First published: 19 June 2018, <https://doi.org/10.1002/etc.4206>. Wang, N., JL Kunz, RA Dorman, CG Ingersoll, JA Steevens, EJ Hammer, and CR Bauer. 2018a. Evaluation of chronic toxicity of sodium chloride or potassium chloride to a unionid mussel (*Lampsilis siliquoidea*) in water exposures using standard and refined toxicity testing methods. Environmental Toxicology and Chemistry. 21 Aug. 2018, <https://doi.org/10.1002/etc.4258>,

In Gillis, PL. 2011. Assessing the toxicity of sodium chloride to the glochidia of freshwater mussels: implications for salinization of surface waters. Environmental Pollution 159: 1702-108, it is pointed out that for glochidia, the end point for studies of acute chloride toxicity is not death, but loss of ability to attach to a host species, which is necessary for their survival, and renders them "effectively dead." In their study of acute chloride toxicity of Fatmucket, *Lampsilis siliquoidea*, juveniles and glochidia, Wang et al. (2018b) state that including their more recent mussel data in the toxicity database would "likely lower the [USEPA Water Quality Criteria 230 mg/L] and [Water Quality Standards] for [Chlorides]." Wang et al (2018a) made a similar statement in their study of the chronic chloride toxicity of the Fat Mucket, in which they state "inclusion of the data from the present study and recent publications to update the national chronic water quality criterion or Iowa chronic water quality standard would likely lower the criterion or standard."

A study by the Great Lakes Environmental Center (GLEC) and the Illinois Natural History Survey (INHS) tested the acute toxicity of chloride to four freshwater invertebrate species including a species of fingernail clam, *Sphaerium simile*. GLEC and INHS found that "[f]ingernail clams are approximately 5.6 times more acutely sensitive to chloride at 50 and 200 mg/L total hardness than tubificid worms, and approximately 2.7 to 4.2 times more sensitive than the snail" USEPA. 2008. Final Draft Report. Acute toxicity of chloride to select freshwater invertebrates. Prepared for the USEPA by Great Lakes Environmental Center and Illinois Natural History Survey. 28 Oct. 2008.

*(footnote continues on following page)*

*(footnote 13 continued)* In terms of chronic long-term effects on invertebrate assemblages, in Wallace, AM and RG Biastoch. 2016. Detecting changes in the benthic invertebrate community in response to

Also see Comment of Dr. Burkholder (Ex. B, p.7). A 2012 study of mussels in the Big Muddy by the Illinois Natural History Survey (Ex. G) found their presence in nearly all of the nearby tributaries in the Big Muddy, which likely indicates that they are present in the main stem of the river (however, the main stem was too deep for the Survey staff to assess at the time of their study). If mussels are found, harming those mussels would be improper as a forbidden impact on existing uses (35 Ill. Adm. Code 302,105(a)(1)). Worse, this particular permit proposes a flow that will discharge and mix at the bottom of the river first, subjecting any mussel bed there to the highest of chloride concentrations.

The permit cannot be issued if the presence of mussels has not been assessed.

**II. Tier 2 Antidegradation - The permit violates 35 Ill. Adm. Code 302.105(c) because the new discharges have not been shown to be necessary to accommodate important social and economic development and the record establishes that the new discharges would be socially and economically destructive.**

The Anti-degradation Assessment filed by the applicant relies on a number of patently false statements regarding the need for and future of the coal industry and completely fails to consider anything but the alleged benefits of keeping the mine open. In fact, the benefits are extremely unlikely to be realized while the damage to be done to the environment and the local economy is deadly certain.

**A. Workforce analysis ignores the applicant's financial perils.**

The applicant's claims regarding future jobs and need for the coal are wildly inaccurate. There is no reason to believe the applicant will continue to operate for long, even if it receives this destructive permit. As explained at the hearing, stock prices of the applicant and related companies such as Foresight Energy have crashed. In 2019, eight major coal mining companies, including Murray Energy, filed for bankruptcy. The January 14, 2020, U.S. Energy Information Administration Short-Term Energy Outlook forecasts that coal production will reach a four-decade low in 2020, stating that coal-fired power plant retirements, electricity from lower cost natural gas and new renewables, and declining exports are expected.<sup>14</sup> Indeed, the whole Southern Illinois coal industry is in a downward spiral. Recent analysis from the Institute for Energy Economics and Financial Analysis reports that "Illinois Basin's coal industry is entering a period of structural decline," and "within the next 20 years, virtually all of the U.S. coal-fired

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increasing chloride in streams in Toronto, Canada. *Freshwater Science* 35(1): 353-63, it is found that in streams in Toronto, Canada, the macroinvertebrate community demonstrated the most taxa changes (declining frequency and abundance of taxa sensitive to chloride and increasing frequency and abundance of taxa tolerant of chloride) at a threshold of approximately 50 to 90 mg Cl-/L. The authors point out that this is below the Canadian Water Quality Guideline of 120 mg Cl-/L for chronic exposure and suggest that chloride may be having nonlethal effects on the benthic macroinvertebrate communities in the Toronto, Ontario region.

<sup>14</sup> "SHORT-TERM ENERGY OUTLOOK," US Energy Information Administration, accessed on 1/14/20: <https://www.eia.gov/outlooks/steo/report/coal.php>

plants that currently buy the basin's coal will be either retired or little used, the result of an economic and technologically driven energy transition in the electric power industry that favors lower-cost and cleaner alternatives." (Ex. H)

The insinuation in the Do Not Mine alternative that Illinois power plants are reliant on Illinois coal is false, as few power plants in Illinois actually burn Illinois coal, and most Illinois coal is shipped out of state. The absurd idea that 4.7 million American homes would go dark without this mine is untrue, and ignores the reality that coal is more expensive than other generation sources and that Illinois is a huge exporter of energy - so we have some to spare. What is proposed here, then, is to sacrifice the Illinois environment and economy, produce more toxic coal ash, and pump more CO<sub>2</sub> and other co-pollutants into the atmosphere so that foreign countries can buy cheaper coal with which to pollute the atmosphere.

While the claimed benefits are illusory and, to the extent they exist, may continue for only a certain window of time, the probable social and economic results of granting this permit can leave massive public costs and have clearly damaging impacts to the long-term social and economic well-being of the area. These costs have not been taken into account.

Workers will continue to face uncertainty over employment and benefits. The United Mine Workers of America website is following the Murray Energy bankruptcy proceedings and has posted that existing employment agreements can be changed by who owns the mine after bankruptcy proceedings. While Mr. Murray exited his company as CEO, having paid himself \$14 million in 2019 before declaring bankruptcy, mine workers face an unknown future regarding their employment, health and retirement benefits. There is every reason to believe miners will be cheated, as were miners at the Blackjewel Mine, where the miners, in an act of protest, had to resort to blockading a train carrying coal,<sup>15</sup> and similar protests have begun in Kentucky against Quest Energy.<sup>16</sup> The miners at Blackjewel eventually got their pay, but only after taking organized action against the company. Regarding health benefits, in November, 2019, Murray Energy owed \$155 million to the Black Lung Trust fund, but was offering to pay only \$1.1 million.<sup>17</sup>

Williamson Energy LLC, a subsidiary of Foresight Energy GP LLC, has 80% holdings by Murray and 20% from the Cline Group. Foresight stocks are 6 cents a share as of January 15, 2020. Murray Energy announced Chapter 11 Bankruptcy on October 29, 2019, claiming \$2.7 billion in

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<sup>15</sup> "Blackjewel Coal Miners to Get Millions in Back Pay After Train Blockade" New York Times, 1/17/20, <https://www.nytimes.com/2019/10/24/us/blackjewel-coal-miners.html>

<sup>16</sup> Kentucky miners block coal train in protest for pay," NBC News, 1/15/20 <https://www.nbcnews.com/news/us-news/kentucky-miners-block-coal-train-protest-pay-n1116096>

<sup>17</sup> "Black Lung Trust Fund Likely Burdened by Murray Bankruptcy," WFPL, 11/20/19, <https://wfpl.org/black-lung-trust-fund-likely-burdened-by-murray-bankruptcy/>

debt and more than \$8 billion in actual or potential liabilities including worker pensions and health care.<sup>18</sup>

In December, 2019, Congress passed the American Miners Act as part of federal spending legislation approved before year end to avoid a government shut-down. The Act will put pension and healthcare costs for approximately 120,000 union mine workers under federal payment via funds taken out of the Abandoned Mine Lands (AML) reclamation fund. The fund was intended to pay for environmental degradation and hazards left in the 200 years of coal mining across the United States before U.S. laws were established but now will be used in large part to pay for miner pensions and healthcare with the result that the Illinois taxpayer can be expected to pay the clean up cost of the mines.<sup>19</sup>

The trajectory of the coal industry is clear. As of November 2019, 48% of the Fortune 500 and 63% of the Fortune 100 are vowing to cut their greenhouse gases by increasing their use of green energy and improving their energy efficiencies.<sup>20</sup> BlackRock, the world's largest money manager with \$7 trillion in assets, announced it will make sustainability and climate risks key tenets of its investing strategy and exit investments in thermal coal, along with other actions<sup>21</sup>

## B. Flooding

The negative economic effects of discharge on flooding in Big Muddy must also be weighed on the scale. While a demonstration has been attempted to show that the increased discharges to be caused by the proposal would not be large, even small increases cannot be discarded as insignificant when there are already flooding problems that will be increased. Obviously, nearly every individual source of floodwater can claim that, considered in isolation, it is insignificant. It is in the very nature of flooding that it is the result of large numbers of small factors that collectively lead to disaster. See Galloway Report on 1993 Flood (Ex. J, p.94). Due to climate change, it is already a given that "extreme weather events will become more frequent and intense,"<sup>22</sup> including the frequency of flooding.<sup>23</sup>

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<sup>18</sup> "Coal Producer Murray Energy Files for Bankruptcy," The Columbus Dispatch, 10/29/19

<https://www.dispatch.com/business/20191029/coal-producer-murray-energy-files-for-bankruptcy>

<sup>19</sup> See also, Macey, Joshua and Salovaara, Jackson, Bankruptcy as Bailout, Stanford Law Review, Vol 71, p. 879 (April 2019) available at

<https://review.law.stanford.edu/wp-content/uploads/sites/3/2019/04/Macey-Salovaara-71-Stan.-L.-Rev.-879.pdf>

<sup>20</sup> "Bankruptcy of Coal Giant Murray Energy Is a Turning Point for Renewable Power," Forbes, 11/3/19

<https://www.forbes.com/sites/kensilverstein/2019/11/03/murray-energys-bankruptcy-dovetails-with-the-rise-of-tesla-and-new-energy/>

<sup>21</sup> "BlackRock Makes Climate Change Central to Its Investment Strategy," Washington Post, 1/14/20

<https://www.washingtonpost.com/business/2020/01/14/blackrock-letter-climate-change/>

<sup>22</sup> United States Global Change Research Program, "Fourth National Climate Assessment Volume I"

(2017). See also United States Global Change Research Program, "Fourth National Climate Assessment Volume II" (2018).

<sup>23</sup> "Changing climate is likely to increase the frequency of floods in Illinois. Over the last half century, average annual precipitation in most of the Midwest has increased by 5 to 10 percent. But rainfall during

Further, increased salinity and other pollutants in Big Muddy floodwaters will increase damage done by flooding to farm fields, golf courses, and other facilities that are flooded.

### C. Climate Change

Mining and burning coal pursuant to the proposed permit would itself be destructive of the environment and economy because coal extracted from this mine will cause increased emissions of climate-warming greenhouse gases. “Transformations in the energy sector—including the displacement of coal by natural gas and increased deployment of renewable energy—along with policy actions at the national, regional, state, and local levels are reducing greenhouse gas emissions in the United States.”<sup>24</sup>

We are in a climate change emergency. The earth has warmed by 1°C from 1901, the warmest in modern civilization, and warming is projected to reach 1.5°C between 2030-2050 under all best case scenarios.<sup>25</sup> “[H]uman activities, especially emissions of greenhouse gases, are the dominant cause” of record-breaking, climate-related weather extremes in recent years.<sup>26</sup> Catastrophic climate change will occur if global warming exceeds 1.5°C, yet to stay under 1.5°C warming, greenhouse gas emissions must be reduced 45% from 2010 levels by 2030, and reach net zero by 2050. With current global emissions, earth currently is on track to reach 3°C global warming by 2100.

With most of Illinois at 1°F warming as of 2016,<sup>27</sup> permitting the Pond Creek mine not only would be unconscionable, it would go against Illinois law and policy. The Illinois Constitution provides as a state public policy the duty of each person “to provide and maintain a healthful environment for the benefit of this and future generations.”<sup>28</sup> Illinois further provides individual rights to a “healthful environment” and individual enforcement “against any party, governmental or private.”<sup>29</sup>

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the four wettest days of the year has increased about 35 percent, and the amount of water flowing in most streams during the worst flood of the year has increased by more than 20 percent. During the next century, spring rainfall and average precipitation are likely to increase, and severe rainstorms are likely to intensify. Each of these factors will tend to further increase the risk of flooding.” United States Environmental Protection Agency, “[What climate change means for Illinois](#)” (Aug. 2016).

<sup>24</sup> United States Global Change Research Program, “[Summary Findings, Fourth National Climate Assessment Volume II](#)” at Section 4 (2018).

<sup>25</sup> Intergovernmental Panel on Climate Change, “Special Report on Global Warming of 1.5 °C” (2018).

<sup>26</sup> United States Global Change Research Program, “[Fourth National Climate Assessment Volume I](#)” (2017). See *also* United States Global Change Research Program, “[Fourth National Climate Assessment Volume II](#)” (2018).

<sup>27</sup> United States Environmental Protection Agency, [What climate change means for Illinois](#) (2016). See *also* [Fourth National Climate Assessment Volume II](#) at [Chapter 21: Midwest](#) (2018).

<sup>28</sup> Illinois Constitution Article XI.

<sup>29</sup> Illinois Constitution Article XI.

Supporting a stable and sustainable economy requires good stewardship of the environment. Absent unprecedented efforts, climate change will increase losses in infrastructure and property, and slow economic growth.<sup>30</sup> Any temporary economic growth would be outweighed irrevocably by short- and long-term climate change consequences.

#### **D. Economic impacts on neighbors and land of long wall mining at site**

The Pond Creek mine is a longwall mine. This is a highly automated and high extraction form of coal mining, taking out nearly the entire coal seam, with room and pillar mining done only for access corridors to the longwall panels. Once the longwall equipment is removed, the ground subsides unevenly, often by the depth of the coal seam that was removed. This has permanent, earthquake-like impacts on the ground surface in the land permitted for mining, referred to as the shadow area. The original Williamson Energy application to IDNR for this mine stated on page 280 that, "High extraction mining in the proposed shadow area can be expected to cause considerable surface subsidence." What were once flat farm fields may become uneven and drainage systems farmers have worked decades to improve often have to be replaced. Local property owners face dewatering of their ponds, private wells, or flooding in areas that previously were not a problem due to the geologic changes from the longwall void underground and surface land subsidence. Surface stream flow can be disrupted. While the mines are to restore what is economically and technologically feasible, it is highly questionable that the full impacts on neighbors and area lands and water resources will ever be returned to pre-mining condition. Homes undermined by the mine have been torn down and while some will be rebuilt, family life is disrupted and property owners face years ahead where the ground can still settle and shift. The emotional and health toll imposed on residents is never factored in. One example of subsidence damage is the destruction of the company's own groundwater wells, as noted in their groundwater monitoring reports.

Local residents have repeatedly tried to appeal to state agencies for enforcement of regulations regarding air quality, water concerns, and noise problems at the Pond Creek Mine. Illinois Pollution Control Board case PCB 2007-145 went on from 2007 to 2014 and the death of one of the petitioners (Ex. K). Concerns in this case are very similar to PCB case 2007-135 in which a local resident details the daily coal dust, noise, loss of right to enjoy one's own property and safety concerns in living next to Pond Creek Mine (Ex. L). Loss of property value and long-term harm from longwall mining are not calculated. Long-wall subsided lands can have prompt surface subsidence but residual movement can continue for years. The original mine permit had longwall indicated for 4,630 acres and Revision 2 to the original IDNR Permit 375 added 7,000 more acres that can be subsided by longwall extraction.

The 229.78 acres under consideration for approval in this draft NPDES will enable the Pond Creek Mine to continue to use the centuries old management method of a surface coal slurry

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<sup>30</sup> See United States Global Change Research Program, "[Summary Findings, Fourth National Climate Assessment Volume II](#)" at Section 2 (2018).

impoundment Refuse Disposal Area (RDA) for waste water from mining including washing coal. Land that was once productive farmland and wetlands has been covered by a monstrous high hazard dam impoundment that will be approximately 190 feet high and over 400 acres in size. The area covered by this slurry refuse disposal cannot be used by future generations for farming or building, and will contain heavy metals and pollutants that can leach into the area watershed for generations to come. Outfalls 009 and 009ES will allow the mine to add more discharges to Pond Creek. The proximity of this expansion to the unnamed Pond Creek tributary at Outfall 009ES shows the eastern wall for the RDA running approximately parallel to the course of this drainage. This mine has a history with IDNR of RDA wall collapse.

The mine has not supplied any explanation for what the extraction of millions of gallons a day of groundwater withdrawn in their mining operations may do to the surrounding area. It is not known if sinkholes or other hazards could occur. Not only is the mine causing this huge disruption in groundwater, it can take advantage of public water resources that at times have been rationed by area communities. Both the Pond Creek Mine and the Sugar Camp Mine have an agreement through a third party for use of Rend Lake water in the "Rend Lake Water Supply Withdrawal Agreement between the State of Illinois, Adena Resources, LLC and Akin Water District, September 21, 2007 and Amendment Number One, August 14, 2009," (Ex. S) with up to 6.5 million gallons total per day allowed. Pond Creek Mine could use up to 2.2 mgd of Rend Lake public water.

#### **E. Inadequate Alternatives Analysis**

Finally, there has been a completely inadequate consideration of treatment alternatives - costs are not fully quantified. We are asked to just take the company's word that doing the better thing is too expensive.<sup>31</sup> We are provided with rough estimates of what the applicant thinks more advanced treatment would cost but no idea of the profits that might be made from the mine against which to weigh such costs.

The applicant's summary rejection of better treatment certainly cannot be accepted by IEPA given that other coal mines are actually using wastewater treatment methods that the applicant claims cannot be used, in operating mines in West Virginia and Poland. See "Case history on the reduction of chlorides from mine water" (Ex. T); See also Leatherwood Creek Report (Ex. U) and "Treatment and disposal of saline wastewater from coal mines in Poland" (Ex. V).

### **III. Mixing Zone Rules - The proposed discharge violates numerous provisions of the rule concerning mixing zone rules 35 III. Adm. Code 132.102**

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<sup>31</sup> A new document regarding consideration of alternatives was apparently given to the Agency only days before the hearing. The public certainly has not had time to analyze this study and its dubious conclusion that nothing can be done to treat the mine's wastewater other than letting most of the solids settle and then piping it to Pond Creek or the Big Muddy.

A mixing zone may not, of course, be allowed when the water quality standard for the constituent in question is already violated in the receiving water (35 Ill. Adm. Code 132.102(b)(9)). Here, it appears that the discharge may cause a violation of that rule in numerous ways:

#### **A. Mercury in the Big Muddy**

The testing of mercury in the discharge is not adequate to determine whether the discharge will directly increase the bioavailable toxic form of mercury level due to the insensitive testing method and the failure to allow for variability as required by the U.S. EPA TSD which has been recognized by the Illinois PCB. However, it is clear, as explained above, that the discharge of chloride and sulfate will increase the level of bioavailable methyl mercury and other toxic form of mercury and, thus, violate 35 Ill. Adm. Code 132.102(b)(9) as well as other rules that preclude causing increased violations of water quality standards.

#### **B. Acidity in the Big Muddy**

It appears that the permit will allow decreased pH in a water body already listed as impaired by low pH, given inadequate monitoring and violations at Outfall 7 in September 2016, June 2017, December 2017, March 2018 for low pH, and violations at Outfall 8 in September 2016, June 2017, and December 2017 for low pH. See US EPA DMR Report (Ex. F) and Echo Report (Ex. R).

#### **C. Total suspended solids and biochemical oxygen demand in the Big Muddy**

As explained above, the permit will allow an increased loading of Total Suspended Solids (TSS), and the discharge would lead to an increase in biological oxygen demand (BOD) with the effect that the existing violations of the TSS and Dissolved Oxygen standards will be exacerbated in further violation of 35 Ill. Adm. Code 132.102(b)(9). See also Comment of Dr. Burkholder.

#### **D. Mussel presence in the Big Muddy**

As noted earlier in Section I, if mussel beds are found at the discharge location, the proposed mixing zone would not be allowed (**35 Ill. Adm. Code 302.102(b)(4)**). However, the applicant has made no effort to assess for mussels at the discharge location, while the mixing zone itself would impact the bottom of the river most severely. There is reason to believe mussels may be present at this location in the Big Muddy due to the presence of mussel in the major tributaries (Ex. G).<sup>32</sup>

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<sup>32</sup> As explained above, because mussels are not protected by the 500 mg/L standard, they will also be harmed well outside the supposed mixing zone.

### **E. Iron in the Big Muddy**

The proposed permit limit for total Iron (3 mg/L daily average, 6 mg/L daily max) has not been shown to meet the applicable water quality standard of 1 mg/L dissolved iron. The Antidegradation Analysis offers no rationale for why the dissolved portion of the total iron would not be above the water quality standard of 1 mg/L. The Big Muddy is impaired for iron, as noted in the public notice. The permittee should not be granted a mixing zone to meet iron limits when the Big Muddy is already impaired for iron.

### **F. IEPA may not allow increased chloride or TSS loading to Pond Creek**

Pond Creek has no dilution capacity for at least chloride, TSS and low DO. As noted in the public notice, Pond Creek is impaired for chlorides. Further, the mine's own reports indicate that the chloride standard has been frequently violated by their discharge from Outfall 007 into Pond Creek (Ex. F). Direct samples of the creek itself found chloride levels well above 500 mg/L, both in May of 2019 (Ex. M, p.6) and August of 2019 (Ex. P, p.3). Therefore, a mixing zone cannot be permitted as is proposed in Special Condition 14 for Outfall 009 (35 Ill. Adm. Code 302.102(b)(9)). Still further, given that IEPA lists Pond Creek as also impaired by "cause unknown" in its 303(d) report, it should not be allowing any increased discharge of a pollutant into Pond Creek that may be part of the unknown cause of the impairment.

## **IV. The proposed permit does not ensure compliance with other Illinois water quality standards in violation of 35 Ill. Adm. Code 302.210, 304.105, and 309.141(d) and 309.143**

As discussed above, the permit does not ensure that the discharge will not cause or contribute to the violation of Illinois water quality standards because, in addition to violating the regulations regarding antidegradation and mixing zones, the permit fails to ensure that the discharge will not cause or contribute to violations of the standards regarding:

- **Mercury** - because (i) the sensitivity of the testing to determine reasonable assurance of meeting the 12 ng/L human health standard is inadequate and (ii) the effect of chloride and sulfate pollution on levels of methyl mercury and other toxic forms of mercury has not been considered.
- **Chloride** - because (i) the complex scheme to prevent violation of the 500 mg/L acute standard is not described in detail, ignores the danger of chloride and cannot be implemented by this applicant and (ii) Pond Creek has no dilution capacity.
- **Conductivity and TSS** - because the permit allows discharges that may cause or contribute to violations of the other toxic substances criteria (35 Ill. Adm. Code 302.210).
- **Copper, iron and nickel** - because the reasonable potential has not been properly calculated using the U.S. EPA Technical Support Document.
- **Dissolved Oxygen** - because the impact of the discharge in raising Biochemical Oxygen Demand levels in the mixing zone and outside the mixing zone has not been considered.

- **pH** - because of the failure to review the applicants discharging monitoring reports showing the potential for a very acidic discharge. See report from Outfall 7 on discharge of pH of 3.3 on Mar. 31, 2018 (Ex. N) and US EPA DMR report (Ex. F) on discharge from Outfall 7 in September 2016, June 2017, December 2017, March 2018 for low pH, and at Outfall 8 in September 2016, June 2017, and December 2017 for low pH.
- **Cadmium** - It is clear that there are high levels of cadmium coming from the mine (Ex. E). The company reports that it found only low levels of cadmium in its very limited monitoring of what it now dubiously claims will be water representative of the discharge. (Anti-degradation Assessment Table 2-1 Water Holding Cell Data) This conclusion, which is hard to credit given the data earlier considered by the Agency, must be treated with great caution by IEPA and only be accepted after independent verification to assure the discharge will not cause or contribute to a violation of the cadmium standard. Cadmium is limited at Outfalls 001 through 007 but should be limited at all outfalls given the very limited testing, the history of this applicant's non-compliance, and the uncertainties caused by lack of knowledge regarding future operations.

**V. The Proposed Permit, in violation of 35 Ill. Adm. Code 309.146, does not require adequate or feasible monitoring to determine compliance.**

**A. Complex Monitoring Scheme - The permit proposes a complex monitoring scheme for compliance at Outfall 009 and Outfall 011, then requires insufficient monitoring to achieve it.**

Monitoring and reporting must be adequate to track compliance with all conditions under 35 Ill. Adm. Code 309.146 but the monitoring proposed in the permit completely fails to do so.

Regarding the chloride monitoring scheme proposed for both Outfall 009 into Pond Creek and Outfall 011 into the Big Muddy, the proposed permit limits the applicant's discharge based on a mixing equation, but fails to identify how all the inputs to that mixing equation will be monitored, how often that monitoring will occur, how they will be reported, and how often reporting will occur. To evaluate the mixing equation, the discharger needs to continuously monitor the flow and concentrations upstream in the Big Muddy as well as the flow and concentration of their effluent. Yet the permit contains no requirements whatsoever for monitoring the flow or concentration of the effluent, and gives no clarity on how the concentration of chloride in the effluent will be measured (correlation or otherwise).

Even if the monitoring scheme was clear, the reporting is insufficient for IEPA or the public to evaluate whether the mixing equation is being met. There is no daily reporting of upstream conductivity, upstream flow, effluent conductivity, or effluent flow. There is a continuous downstream monitor of chloride, but relying on a single sensor downstream does not guarantee

that discharge has not been in violation of limits. The inputs to the mixing equation should all be monitored, and the reporting should be at least daily, if not hourly<sup>33</sup>.

The permit specifies the location of the downstream monitor such that it minimizes protections. It requires that the downstream monitor be placed in “a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred.” This seems like an unwarranted gift to the permit applicant, essentially granting them as much mixing as they want. Instead, the permit should require that the downstream monitor be placed as close to the edge of the mixing zone as possible, so we know that Illinois waters are being protected and that the mixing zone is as small as possible (35 Ill. Adm. Code 302.102(b)(12)).

Lastly, the permit allows the permittee to reduce or eliminate monitoring requirements, clear error given that the antidegradation assessment explicitly identifies that the groundwater seeping into the mine is likely to significantly increase in chloride concentration (and associated pollutants). The permit should anticipate an increase in the amount and toxicity of the discharge, never allow an elimination of monitoring, and explicitly require an increase in monitoring.

To make this monitoring scheme more feasible, the permit should, at a minimum:

- Require Williamson Energy to create a Quality Assurance Project Plan for the chloride monitoring scheme and give the public an opportunity to comment on the plan.
- Require Williamson Energy to report enough information to evaluate whether the mixing equation is being met. This means monitoring the effluent flow rate and concentration as well as the upstream flow rate and concentration in real time, and reporting that data back to the public. At a minimum, whenever these values are measured and flow in the pipe should be adjusted, it should be reported, at least daily.
- Make it clear how the chloride in the effluent is being monitored. If that monitoring is to be a correlation to conductivity, the effluent and the receiving waters will need correlations developed based on years of data and allowing for variability because it is clear that wide swings in conductivity occur in the Big Muddy (Ex. O).
- Identify whether the result of the mixing equation or the downstream measurement of chloride, or both, are the regulated constraint for chloride concentrations.
- Require a plan for validating the correlation of conductivity to chloride, and stipulate that the correlation has to be sufficiently developed for use, and reviewed by the public, before the permit is granted or the permittee can begin discharging. Conductivity should always be reported with chloride when using the correlation.
- Specify the location of the downstream monitoring to be as close to the estimated boundary of the mixing zone as possible.
- Require accurate monitoring of all of the constituents of the discharge using methods sufficiently sensitive to detect any violations of numeric or narrative water quality standards.

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<sup>33</sup> The reporting would not need to be in real time (ie. the public does not need real time access), but the reported data should be hourly.

- ❑ Clearly identify a maximum discharge limit for the pipe.

**B. History of Violations and Failure to Monitor Properly - Because the permit applicant has already shown itself incapable of compliance with its existing relatively simple permit through numerous permit violations and failures to report, detailed independent monitoring is necessary.**

“In granting permits, the Agency may impose reasonable conditions specifically related to the applicant’s past compliance history with this Act as necessary to correct, detect, or prevent noncompliance.” 415 ILCS 5/39(a) Here, there is no reason to believe the permit applicant can comply with the proposed permit and any permit granted by the Agency would have to subject to strict terms necessary to detect or prevent noncompliance.

The Williamson Energy’s inability to properly report discharge is demonstrated by an August 2019 Inspection Report memo by Illinois EPA inspector Brian Rodely (Ex. P). The report notes that “DMR’s appear to have been submitted with no discharge reported during non-precipitation events despite the daily influent of approximately 2.7 million gallons of underground mine water. The water mass balance of influent water and discharged water does not appear consistent.” Further, the inspection notes “Analysis not conducted of discharges, inadequate frequency of sampling, and invalid/ unrepresentative sample as required by permit.” Additionally, the Illinois Attorney General took action against the mine in Illinois Pollution Control Board Case PCB 2019-085 (Ex. Q). The case was regarding a 2016 IEPA Emergency Response Unit inspection citing black, tar-like material in an unnamed tributary of Pond Creek. It was settled in June of 2019. Continued concerns are clear from the Inspection Report memo that states a near-by property owner commented the IEPA should take samples on a weekend when dark gob water is released when the mine knows it will not be caught.

While self-monitoring is norm in NPDES permit, it would be irresponsible to rely on self-monitoring in this case, given the mine’s history of reporting issues and especially with the complex monitoring scheme proposed in this permit. Were this permit to be granted, a third-party should be used to monitor the chloride in the Big Muddy, such as the United State Geological Survey and independent monitoring should be required at the discharge points to the Big Muddy and Pond Creek.

The permit applicant is a frequent violator of their current NPDES permit. In June 2019, ECHO reports (Ex. R) show that the mine violated its effluent limits for chloride and sulfate at Outfall 002. This also occurred in 2017. In 2018 it violated its chloride and sulfate limits at Outfall 006. It violated its pH limit at Outfalls 007 and 008 in three quarters in 2017 and 2018. The mine received a letter of violation from IEPA in August 2016.

**C. Correlation curves must be established and included in the permit rather than waiting to develop them after the permit is issued and the dataset used as the basis, and the supporting statistics, should be provided to the public.**

The permit proposes monitoring chloride concentrations by establishing a correlation to conductivity, but offers no guidance on how this correlation is established or whether the Agency needs to approve the correlation. If the permittee begins discharging before the correlation is established, it is impossible for the Agency to evaluate compliance. The correlation needs to be part of the permit. That way both the Agency and the public have the opportunity to review the correlation. This is especially important because chloride is not the only chemical constituent which can change conductivity, and the Big Muddy already has a wide variability in conductivity (Ex. O) so the correlation will never be very accurate and will be tricky to establish.

**Conclusion**

The permit as proposed is plainly illegal and must be denied.

Moreover, even a vastly improved permit cannot properly be issued without re-noticing the permit and giving the public a fair chance to review the improvements and determine whether they cure the many fatal flaws in the draft. No permit can legally be issued without such fundamental alterations that the changes would necessarily be beyond a logical outgrowth of the totally deficient record on which the draft was based. See, 35 Ill. Adm. Code 309.120. Given that the antidegradation analysis, the reasonable potential analysis, the data collection, and the monitoring have not been set forth in sufficient detail to allow the public a reasonable chance to gauge the effects of the permit; and given the fact that all of the data from this discharger are suspect, a new draft permit should only be issued after the appropriate studies are done by IEPA itself; any data supplied by the permit applicant are shown to have been collected with solid QA/QC; and a revised record is created for public comment.

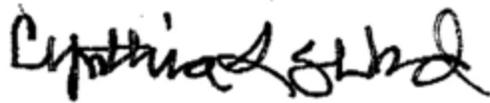
We look forward to continuing to work with the Agency to protect water quality.



Albert Ettinger  
Counsel for Sierra Club



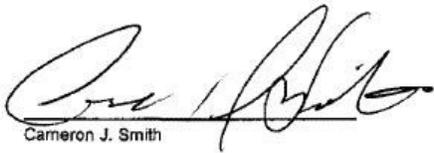
Andrew Rehn  
Water Resources Engineer  
Prairie Rivers Network



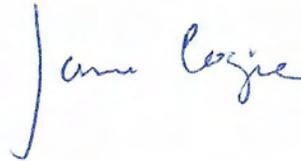
Cynthia Skrukrud, PhD  
Clean Water Program Director  
Sierra Club, Illinois Chapter



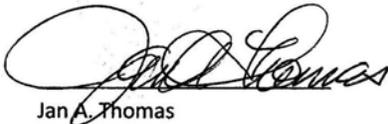
Amanda Pankau  
Energy Campaign Coordinator  
Prairie Rivers Network

  
Cameron J. Smith

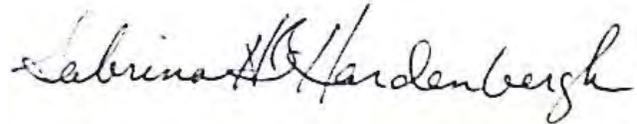
Cameron J. Smith  
Treasurer of SAFE &  
Property owner in Murphysboro, IL



Jane Cogie  
Chair  
Shawnee Group, Sierra Club Illinois

  
Jan A. Thomas

Jan A. Thomas  
Steering Committee of SAFE



Sabrina Hardenbergh  
Shawnee Group Sierra Club newsletter  
editor  
SAFE member

Cc: Steve Jann, Region 5 U.S. EPA

Review of Proposed Discharges to the Big Muddy River and Pond Creek by  
Williamson Energy: Permit No. IL0077666

January 15, 2020

To Whom it May Concern:

I am a Professor of Environmental Science with more than 20 years of experience in the fields of aquatic ecology and watershed science. I received a PhD in Aquatic Ecology from the University of Michigan, Ann Arbor in 2002 and worked as a Research Associate at the Smithsonian Institution from 2002-2005. I have expertise in analyzing biological community data, characterizing and modeling physical and chemical drivers, and diagnosing causes of biological change in aquatic ecosystems using field observations and quantitative analytical techniques. I have applied these approaches to understand variation in community response to hydrologic, thermal, and chemical gradients in Michigan rivers, to identify land use thresholds in Maryland watersheds, to evaluate biological community response to hydrologic and chemical stressors in Maryland, Ohio, West Virginia, and Massachusetts streams. I have experience in analyzing stream hydrology and geomorphology in basins throughout the Midwest, Chesapeake Bay watershed, and New England, and applied similar techniques to rivers and streams in Argentina and Brazil. I have served as a manuscript reviewer for over 50 peer-reviewed journals and federal agencies including USEPA, USGS, USFS, and NSF. I currently serve as an Associate Editor for the international journal *Freshwater Science*. Over the past 10 years, I have conducted workshops for federal and state agencies and at regional aquatic biology meetings in which I trained attendees about statistical methods for analyzing biological data. I have also held an appointment as a Research Professor with the USGS where I provided advice to agency scientists regarding analysis and interpretation of observational data. More information on my background and qualifications is provided in the attached *Curriculum Vitae*.

At the request of the Sierra Club, I have reviewed certain materials relating to proposed new discharges to the Big Muddy River and Pond Creek from the Pond Creek No. 1 Mine. It is my understanding that Williamson Energy has applied for a revision of its 2005 NPDES permit, in which it proposes to substantially alter its current discharges into Pond Creek and add an additional discharge into the Big Muddy River, some 12 miles away. In deciding whether to approve this permit revision, my understanding is that the Illinois Environmental Protection Agency (IEPA) must act to *protect and maintain* water quality standards in Illinois. The list of materials reviewed is provided at the end of this document. From these materials, I have developed the following opinions:

- 1) The discharges described in the NPDES renewal and the anti-degradation documents exceed levels known to be harmful to aquatic life. Whether it involves the high levels of TDS or Specific Conductivity (SC), high

concentrations of sulfate, chlorides, or various metals, the discharges described here will impact sensitive taxa in any receiving freshwater body (e.g., Pond et al. 2008, Pond 2010, Timpano et al. 2011, Pond 2012, US EPA 2013, Suter and Cormier 2013, Pond et al. 2014, Griffith 2017). Although the region has higher background levels of conductance than regions with more resistant rock types and dilute waters, regional background concentrations are nonetheless similar to what is found discharging from calcareous rocks (Griffith 2014), and in any case the proposed mining discharges dwarf natural concentrations by orders of magnitude. Recent investigations of anthropogenic stressors suggest that such novel environmental gradients are associated with ecological thresholds (Hobbs et al. 2006, King et al. 2011, Bernhardt et al. 2012, Voss et al. 2015).

- 2) Proposed amendments to NPDES # IL0077666 involving discharges into Pond Creek represent excess chloride for a stream *already listed for chlorides* in the states 303(d) impairment summary. Approving any permit to allow additional discharges of an impairment-listed pollutant represents a clear violation of the intent of the Clean Water Act and Illinois administrative codes [35 Ill. Adm. Code 302.102(b)(9)]. Moreover, previous description of the conditions in Pond Creek characterizes its flow above the outfall as *intermittent*. If this is the case, there will be times during the year when the mining company effluent constitutes the majority, if not all, of the flow in the stream. Under such conditions, there will be very limited potential for mixing. Effluent limitations must be at least as stringent as the water quality standards they seek to meet.
  
- 3) There seems to be discrepancy in the water quality standards for various analytes, and under such circumstances EPA limits should be considered. The anti-degradation document lists reporting levels for chloride at 500 mg/l and sulfate at 1182 mg/l, well above the current EPA levels of 230 mg/l for chronic and 860 mg/l for acute chloride impacts to aquatic life (EPA 1988, Wang et al. 2018). Moreover, levels for sulfate toxicity are listed as low as 600-800 mg/l in the literature (Soucek and Kennedy 2005, Elphick et al. 2011, Wang et al. 2016) but much higher here. In the groundwater well documentation I reviewed, there appeared to be an altogether different set of standards (200 mg/l chloride and 400 mg/l sulfate) being applied (and the state reviews appear to be allowing reports from Williamson Energy that are rife with obvious errors, suggesting lax oversight). A single numeric requirement does not account for the difference between for acute and chronic effects or for differences across taxa, and even then the typical WET tests that help drive EPA chronic toxicity levels are of a relatively limited duration. Most testing for such limits are performed on crustaceans, mollusks, fish, or highly tolerant macroinvertebrates due to the challenges in raising sensitive taxa in a controlled environment (Kennedy et al. 2004, Kunz et al. 2013). More recent work has suggested both that sensitive organisms

respond differently than tolerant taxa and that a typical test does not consider the impacts of discharges throughout the life history of the organisms (Clements and Kotalik 2016, Voss and Bernhard 2017).

- 4) Proposed amendments to NPDES # IL0077666 involving discharges into the Big Muddy River represent toxic additions to the water body. In this case, the mining company has made an effort to mitigate the effects of the discharges through the proposed use of five single-port diffuser system. However, background chloride levels (listed by IEPA as 30.1 mg/l to purportedly represent the 90<sup>th</sup> percentile of stream observations) are too low. According to IEPA ambient water quality data set. The 30.1 mg/l level provided is not the 90<sup>th</sup> percentile (which is actually >103 mg/l) but the 50<sup>th</sup> percentile or the median of IEPA observations. Secondly, the existing observations represent irregular monthly grab samples that are incapable of accurately representing dynamic levels of concentration extremes apparent in USGS conductivity data from the same reach. Both point to much higher extant levels of chloride and other solutes than assumed in the modeling simulation offered by Williamson Energy and used to guide their proposal. Further, the Big Muddy River is itself already listed as impaired for a number of stressors including mercury, iron, PCBs, and sulfate in 2014, and the proposed discharges would simply be adding to the sulfate load. In that situation, where pollutants already exceed the allowable in-stream concentrations, a mixing zone should not be permitted.

The materials included in the permit application are insufficient to make a reasoned conclusion that impacts of the proposed discharge will not impact aquatic life.

Recent work has suggested that conductivity related to both chlorides and sulfates can produce both acute and chronic toxicity as well as reduced metabolism and lowered abundance of sensitive taxa (Clements and Kotalik 2016, Voss and Bernhard 2017). The fact that the stream is already impaired does not relieve the mining company or IEPA from establishing effluent limits protective of water quality standards, including those meant to protect aquatic life. There is little to no consideration of the addition of more chlorides, sulfates, or other pollutants to these streams or effects on other taxa (e.g., Wang et al. 2007, Timpano et al. 2010, Bier et al. 2012). What consideration that exists is implicitly focused entirely on concentrations and not also on the impact of loads.

Second, cumulative or synergistic effects are likely to occur in a stream where additional stressors and harmful pollutants are present (Omerod et al. 2010). I have observed this myself in mining impacted streams, where conditional analysis showed that impacts of habitat degradation or thermal stress were enhanced by the presence of mining effluent (Baker 2014). Other studies have taken such impacts and interaction into account when investigating the effects of mining discharges (e.g., Gerritson et al. 2010,

Merriam et al. 2011, Cook et al. 2015). Cumulative effects have lately been the focus of study where multiple NPDES permits contribute to downstream impairment (Lindberg et al. 2011, Merriam et al. 2015, Nippgen et al. 2017, McManus et al 2020). IEPA has not taken these cumulative or synergistic effects into account at all in the proposed permit.

In order to developed an informed opinion about the effects of the proposed discharges, the agency should require more information about Pond Creek and the Big Muddy (up and downstream of the confluence) prior to issuance of any permit to better understand the impacts of the mine discharge. In addition, I have the following specific concerns:

- 1) There does not appear to be a margin of safety in the proposed plans. Given that the design parameters suggest the mining company will be operating near its discharge capacity nearly all of the time to dispose of excess water, there is potential for violation of its limits due to poor calibration of the diffusers with river flow, effluent concentrations, or temporary system failure. Since the limits themselves appear to be at or above concentrations where tests detect aquatic degradation (again, the tests themselves are structured to return a level where one is sure that harm has occurred) their plans are based on a faulty premise, any disruption in their best-case scenario should result in a violation of the standard and a virtual guarantee of aquatic harm. From the documentation provided, it does not appear to include recommended allowances (USEPA Technical Support Document) for permit limits set with limited and variable data.
- 2) No consideration of cumulative effects. The Anti-degradation document mentions that Sugar Camp mine, owned by the same company as Pond Creek mine, will be discharging into the Big Muddy River upstream of Outfall 11. Assuming they operate effectively with no mishaps and appropriate monitoring (again, this is best-case planning with no safety margin), the mine apparently plans to discharge sufficient chloride to raise a quarter of river flow to 500 mg/l chloride. By the time that water reaches the downstream Pond Creek mine discharge, the entire river will have a chloride concentration of in excess of 140 mg/l from mine inputs alone. If Pond Creek mine is also discharging at or near its maximum, the entire river downstream of Pond Creek mine outfall will be around 240 mg/l chloride from mine discharge alone (i.e., above the EPA chronic standard). This does not account for any other sources of chloride or any other pollutants, from the mine or other sources, nor does it consider how this proposed discharge will mix with Pond Creek itself, below their downstream confluence.
- 3) No collection of pre-mining data. As I understand this history of these permits, there has been no effort to understand how past discharges from the Pond Creek mine have impacted stressed aquatic communities and to distinguish those effects. Other mining states are discovering to

their regret that large fractions of their freshwater resources, including regional fish populations (Griffith et al. 2012, Hitt and Chambers 2014, Griffith et al. 2018) are now impaired due to mining. Why hasn't there been greater consideration of these impacts?

- 4) No mention of potential interactions among stressors. For example, one obvious issue is that the Big Muddy River has been listed as impaired for both mercury and sulfate, and there is a robust literature linking the methylation of mercury to the presence of high concentrations of sulfate and sulfate reducing bacteria (e.g., Jeremiason et al. 2006, Olof Regnell et al. 2019, Lazareva et al. 2019). It seems as though the IEPA is willing to consider adjusting chloride standards given the presence of sulfate, but will not consider adjusting sulfate standards (indeed allows a more lax standard than elsewhere) in the presence of high levels of mercury. Given the potentially toxicity of methylmercury and its ability to bioaccumulate in the food web, I am quite surprised to see no mention of this factor in the permit documents.

My impression of the overall picture here is that the mining company is asking the state for permission to further impair public waters. Indeed, the request to discharge into the Big Muddy is an effort to take advantage of its greater assimilatory capacity so that the mine can increase its discharges without so obviously violating its original permit. This is strikingly similar to remedy proposals from Appalachian mining companies that have been found liable for violating their NPDES permits in federal court (S.D. W.Va. 2:13-5006). The fallacy here is that neither the Big Muddy River nor Pond Creek is an unimpaired stream, so regardless of efforts to limit discharges, they mining company will still be adding to impairment and inhibiting further recovery efforts.

The Anti-Degradation document presents several alternatives to the increased level of effluent discharge. It discards each of them as too difficult, too uncertain, or too expensive. The implication is then, that environmental degradation is less expensive because the company does not bear the full cost of disposal. The State is thus asked to approve the sole alternative that would keep the mine in operation. It is not my place to decide for the State of Illinois whether this bargain for economic benefit is worth the environmental cost. Both the cost and the benefit of the mine will depend on its expected lifespan. In the documentation, I found two distinct estimates of the expected life of the mine: >10 years or >20 years. These estimates were made in 2005. Since the mine is already 15 years old, it would appear that 5-10 years from now is an optimistic interpretation of those initial projections.

I am concerned that the proposed permit revision may only solve part of the company's water management problem. The revised proposal variously describes excess water on the order of 2.3-3.5 mgd and indicates expected discharges of between 1.83 and 4.73 mgd at Outfall 11, depending on river

flow conditions. These projections are far too optimistic given the errors in the mixing simulations mentioned above, so the company would be unable to discharge the expected amount. Further it remains unclear how *in situ* concentrations will vary with higher flows. Whereas high flows with dilute concentrations should pose little difficulty for assimilating their pollutant load, what is the plan for handling excess effluent during a drought or when high flows also flush road salts? This remains absent from the planning documents.

The materials that I have reviewed lead to the conclusion that the proposed discharges will cause harm to aquatic life, that there is an surprising amount of unknown risk being taken on by the IEPA. IEPA did not require the necessary documentation or background information to ensure compliance with state water quality standards, and it is clear more work needs to be done.

Submitted Respectfully,



Matthew Baker, PhD  
Professor  
Department of Geography and Environmental Systems  
University of Maryland, Baltimore County  
Baltimore, MD 21250

**Cases within the last four years in which I been deposed or testified as a witness:**

*Ohio Valley Environmental Coalition v. Fola Coal*, (S.D. W.Va. 2:13-21588)  
(Leatherwood Liability)

*Ohio Valley Environmental Coalition v. Fola Coal*, (S.D. W.Va. 2:13-5006)  
(Stillhouse Remedy)

*Ohio Valley Environmental Coalition v. Fola Coal*, (S.D. W.Va. 2:13-21588)  
(Leatherwood Remedy)

*Ohio Valley Environmental Coalition v. Fola Coal*, (S.D. W.Va. 2:15-1371)  
(Monoc Liability)

Canaan Christian Church and Burtonsville Crossing, LLC and Burtonsville Associates, LLC and Jennifer M. Sarem and Marion G. Sarem v. Montgomery

County, Maryland and Montgomery County Council and Isiah Leggett, (MD Case No.: 16-cv-03698-TDC)

**Materials Reviewed:**

Anti-Degradation Document.pdf  
PondCreekPermit2005.pdf  
IEPA\_AmbientWQData.xlsx  
Comment and Request for Hearing on NPDES Permit No. IL0077666, Notice No. 7516c, Williamson Energy, LLC, Pond Creek Mine.pdf  
USGS gauge and water quality records for #05599490 Big Muddy River at RTE 127 at Murphysboro from Jan 2016 to Nov 2019  
IEPA water quality records for Segment N-11, NG-05  
NACL Proposal 2019.docx  
Big Muddy River (N) 2000.pdf  
Pond Creek mine outfall.pdf  
Detailed Facility Report \_ ECHO \_ US EPA.pdf  
WaterData\_Bugs\_Fish\_BigMuddy\_N\_PondCr\_NG\_ToCindySkrukrud\_2020\_01\_10.xlsx  
Set of Pond Creek FOIA Documents:  
12.12.16AD&QBELPdCrMine\_08122019114439.PDF  
Application 7-18-18 Ownership&ViolationsPCmine\_08122019101005.PDF  
Gh2oPCmine\_08122019100223.PDF  
Gh2oPCmine\_08122019100359.PDF  
Gh2oPCmine\_08122019100529.PDF  
GH20pondck\_08122019102002.PDF  
GH20pondck\_08122019102029.PDF  
GH20pondck\_08122019102230.PDF  
OwnershipPdCrMine\_08122019111909.PDF  
RDA2PdCrMine\_08122019113337.PDF  
ResptoIEPAonRDA3PdCrMine\_08122019113730.PDF  
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901 Glencastle Way  
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January 15, 2020

Mr. Albert Ettinger  
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Chicago, Illinois

Dear Mr. Ettinger,

In response to your request made on behalf of the Sierra Club, I am sending these comments about draft NPDES Permit No. IL0077666 for Williamson Energy, LLC's Pond Creek Mine. As background, there were 47 permitted coal mines in the Big Muddy River watershed as of about 15 years ago (IEPA 2004). About 88% of the Upper Big Muddy River watershed has an annual minimum water table depth of 79 centimeters (~31 inches) or less, and in about 20% of the watershed the annual minimum water table depth is only 15 centimeters (~6 inches), with hydric soils (LimnoTech 2018). Thus, coal mining operations in this watershed threaten both surface water and groundwater with contamination from mining wastes.

The permit includes three new alkaline discharges from sediment pond operation and maintenance, the focus of these comments, by the Pond Creek Mine: outfalls 011, 009, and 009ES. Outfall 011 would discharge to stream segment N-11 of the Big Muddy River. That entire stream segment is on the Illinois draft 2016 303(d) list of impaired waters for aquatic life use (low dissolved oxygen [DO], iron, pH, total suspended solids [TSS], sedimentation/siltation); mercury and PCBs (fish consumption); and fecal coliforms (primary contact recreation).

The other two proposed outfalls would drain from a new refuse disposal area with sediment basin. Outfall 009 would discharge to Pond Creek (tributary of Big Muddy River segment N-11). Outfall 009ES would discharge to an unnamed tributary of Pond Creek that already receives discharges from the mine's outfalls 001, 002, 003, 004, 005, 006, 007, and 008. The entire length of Pond Creek is on the state's 2016 draft 303(d) list, including the stream segment (NG-02) that would receive the discharges from outfalls 009 and 009ES. Coal mining and agriculture are the major land uses in the watershed (Carpenter et al. 2018). Both streams are impaired for aquatic life use (alteration in stream-side or littoral vegetative cover, changes in stream depth and velocity patterns, loss of instream cover, chlorides, low DO, and sedimentation/siltation) (IEPA 2019). While mercury contamination is not listed as a cause of impairment to Pond Creek or the unnamed tributary, IEPA (2004) has described mercury contamination via atmospheric deposition as an interstate/international issue affecting many Illinois waters. The Illinois Department of Public Health (2019) has posted fish consumption advisories due to mercury contamination for the "Big Muddy River and Tributaries" in Franklin and Williamson Counties (which include Pond Creek and the unnamed tributary) as well as six other counties in the Big Muddy River watershed. Thus, mercury contamination is affecting Pond Creek and its unnamed tributary, as well as the Big Muddy River. The following comments emphasize Big Muddy River segment N-11, but the issues and the underlying science are also applicable to the Pond Creek and unnamed tributary segments that would be affected by the permitted discharges.

**A.** *The high chloride and sulfate concentrations added to the water column of the substantial mixing zones would significantly increase mercury release from the sediments and, in turn, increase the potential for mercury contamination and toxicity to fish and other beneficial aquatic life.* These effects would occur because there are strong chemical interactions between the overlying water and the sediments (Wetzel 2001). Mercury contamination is already contributing to the

degradation of this stream segment (IEPA 2016).

Elevated chloride – An abrupt, pronounced increase in mercury release from the sediments of aquatic systems has been reported, as a conservative estimate, when chloride ( $\text{Cl}^-$ ) concentrations reach or exceed  $2 \times 10^{-2}$  M (709 mg/L) (Wang 1991). The dramatic mercury release with increasing chloride has been attributed to the dissolution of adsorbed mercury through its complexation with chloride. The IEPA is considering a permit level of 500 mg chloride/L outside the mixing zones, within the same order of magnitude as the threshold value of 709 mg/L for major mercury release from the sediments. The mining company would be allowed to discharge up to 12,000 mg chloride/L at the point of discharge to the Big Muddy River (maximum volume allowed – 5,000 gallons per minute). More than 90% of the total mercury present in the water and sediments generally is sorbed onto and held in the sediments (Wang 1991 and references therein). As mercury is already contributing to degradation of this segment, appreciable mercury can be expected to have accumulated over time in the sediments. The substantial mixing zone for the Big Muddy River that would be allowed by this permit, encompassing up to  $1/4^{\text{th}}$  the river volume in the area, and the high chloride concentration discharged, would result in major mercury release from the sediments throughout the mixing zone. Some of that mercury would be moved by currents beyond the mixing zone. Pond Creek segment N-2 and the unnamed tributary, receiving effluents from outfalls 009 and 009ES respectively, would also be permitted at 500 mg chloride/L along with a mixing zone for outfall 009 (IEPA 2019), and would be similarly impacted.

The threshold value for major mercury release from the sediments may be substantially lower: In other work (Farrell et al. 1990), the fraction of total mercury-II ( $\text{Hg}^{+2}$ ) bound in the form of chloro-complexes increased as the chloride concentration of the water increased; and the total toxic activity of the mercury chloro-complexes increased as a near-linear function of the total chloride concentration – but there was no significant increase in the mole fraction until the total chloride concentration was  $10^{-3}$  M (35 mg chloride/L). The data again suggested a threshold for mercury release, at 35 mg chloride/L; this concentration corresponded to the chloride level at which significant decreases, related to mercury toxicity, were observed in growth of the test organisms. The permit level of chloride under consideration by IEPA, 500 mg chloride/L (outside mixing zones) would be more than 10-fold higher than that estimated threshold.

Elevated sulfate – High inputs of sulfate to the overlying water can also stimulate methyl-mercury production and release from anoxic sediments (Gilmour et al. 1992, Benoit et al. 1999, Jeremiason et al. 2006). Bacterial sulfate reduction and mercury methylation in freshwater sediments are strongly related (Gilmour et al. 1992); mercury methylation is dependent on sulfate availability (as an electron acceptor) because sulfate-reducing bacteria mediate the biotic methylation of mercury (Mitchell et al. 2008). There is feedback inhibition, wherein the high pore-water sulfide concentrations that can result from rapid sulfate reduction (see section E below) can inhibit mercury methylation (Gilmour et al. 1992 and references therein). The bacteria involved in mercury methylation under high sulfate conditions also require sufficient organic carbon (Gilmour et al. 1992, Harmon et al. 2004, Mitchell et al. 2008), which would be supplied by the organic carbon in the anoxic sediments and the decomposition of dead and dying aquatic organisms in the mixing zones (outfalls 011, 009).

**B. *The mine discharges at outfalls 011, 009, and 009ES will exacerbate the TSS conditions in the receiving streams.*** Excessive total suspended solids are already contributing to the degradation of these stream segments.

For all streams and rivers in the Upper Big Muddy River watershed, IEPA has developed a loading reduction strategy target of 32.2 mg/L (IEPA 2016), or 39.3% TSS reduction (LimnoTech

2018). These targets were based on an average of what were described as “validated, real-world data (1999-2013) for the nearby Upper Kaskaskia watershed, which [still] contains several streams that are in full support of aquatic life.” Pond Creek segment NG-02 has an even higher loading reduction strategy target of 62.7% TSS reduction (Limnotech 2018). Yet, the effluent standards for TSS in mine drainage are established pursuant to 35 Ill. Adm. Code 406.106 (Illinois Pollution Control Board 2019), which allow 35 mg TSS/L. In the permit IEPA applies the statute as a “30-day average” without indicting the number of samples that will be taken per month (at least three are required; 35 Ill Adm. Code 304.104). This allows for much larger concentrations over a monthly period as long as the average is 35 mg TSS/L. The daily maximum – outside the mixing zones (also for outfall 009ES) – is double the value in the mine drainage statute, 70 mg TSS/L, as allowed by statute (35 Ill Adm. Code 304.104). It is noteworthy that the same approach is applied by IEPA to iron and manganese, effectively doubling the concentrations stated as acceptable in statute 35 Ill. Adm. Code 406.106.

Many adverse impacts on stream ecosystems have been documented from excessive suspended sediment loading, including marked effects on fish and macroinvertebrate diversity and abundance (e.g., Newcombe and MacDonald 1991, Wood and Armitage 1997, and references therein). The extent of the impacts on aquatic life strongly depends on the TSS concentration x the duration of exposure (Newcombe and MacDonald 1991). Macroinvertebrates, zooplankton sensitive fish species, and other beneficial organisms can be stressed or killed at ~25-30 mg TSS/L depending on the environmental conditions, and if subjected to such concentrations for hours to days. In allowing a daily concentration of up to 70 mg TSS/L, there is no evidence that IEPA considered the need to protect aquatic biota during critical conditions such as reproductive and recruitment periods (e.g., see Sweeten and McCreedy 2002).

**C.** *Harmful toxigenic cyanobacteria will have a competitive advantage over other algae in the environmental conditions created by the Pond Creek Mine’s alkaline effluent, including high specific conductance, high chloride, and enhanced phosphorus (P) release from the sediments.* Cyanobacteria also generally have high tolerance for limited light and toxic heavy metals relative to other algae.

The Pond Creek Mine alkaline waste effluent discharged at the three proposed new outfalls and existing outfalls would have elevated concentrations of salts with strong bases and carbonates. The resulting elevated chloride/salinity and alkalinity are characteristic of rivers and streams affected by what has come to be called the *freshwater salinization syndrome* (Kaushal et al. 2018). A major cause of this syndrome is alkaline coal mine wastes, and a major symptom is contaminant mobilization (e.g., mercury as noted above).

Pertinent to benthic cyanobacteria, high concentrations of sulfate and chloride have been shown to enhance phosphorus release from the sediments (Caraco et al. 1993, Zak et al. 2006, Jin et al. 2013). Most toxigenic cyanobacteria are “phosphorus loving” (Burkholder 2009 and references therein) – that is, they have high P optima and would be expected to be stimulated by the enhanced sediment P release. The hypoxic conditions that are contributing to the degradation of this stream segment (IEPA 2016) would further enhance sediment P release (Carlton and Wetzel 1988, Stumm and Morgan 1995).

Various toxic cyanobacteria have also been shown to be capable of withstanding major increases in salinity as influx of chloride salts. For example, growth rate and toxin production of freshwater *Microcystis aeruginosa* were unaffected by salinity levels up to nearly 1/3<sup>rd</sup> strength seawater (salinity 10), and *M. aeruginosa* could withstand short-term salinity shock up to half-strength seawater (salinity 17.5) (Tonk et al. 2007). In other research, *M. aeruginosa* tolerated salinities as high as 14 (Verspagen et al. 2006). Additional studies demonstrated that several tested freshwater

and brackish cyanobacteria taxa were more salinity-tolerant (up to salinities of 15-20) than other co-occurring algae (Moisander et al. 2002). In laboratory experiments with freshwater and brackish cyanobacteria, inorganic nitrogen supplies (nitrate or ammonium) or organic nitrogen as glutamate significantly enhanced salt tolerance (Reddy et al. 1989). These nitrogen substances inhibited sodium influx, thought to be a major mechanism involved in cyanobacteria tolerance of substantial salinities (Reddy et al. 1989).

Cyanobacteria additionally tend to have high tolerance for limited light in comparison to many other algae (Graham et al. 2016 and references therein), as well as high tolerance of toxic heavy metals (Baptista and Vasconcelos 2006, Cassier-Chauvat and Chauvat 2015, Shilpi et al. 2015). They also have effective mechanisms that enable them to avoid washout in river environments, and they can thrive along the river bottom during high-flow conditions (Quiblier et al. 2013, McAllister et al. 2016). These traits collectively give cyanobacteria major advantages over other algae in freshwaters affected by coal mining alkaline effluents (e.g., Valkanas and Trun 2018). The Pond Creek Mine's alkaline effluent will promote their growth over other, beneficial algae.

**D.** *Fauna that die in the substantial mixing zone of the Big Muddy River, the smaller mixing zone of Pond Creek, and the outfall area of the unnamed tributary, will increase biochemical oxygen demand and exacerbate the low dissolved oxygen conditions both in this stream segment and in downstream waters. Low-oxygen conditions are already contributing to the degradation of these stream segments.*

A wealth of peer-reviewed science publications have documented “devastating effects” on aquatic communities from coal mine waste pollution, whether the effluent is added continuously or episodically (e.g. Maccausland and McTammany 2007, Bier et al. 2015, Giam et al. 2018, and references therein). Many biota (invertebrates, fish, salamanders, etc.) are killed outright in areas affected by the discharged effluent, and their taxonomic richness and abundance are significantly depressed as a long-term outcome (Giam et al. 2018). The resulting biochemical oxygen demand for decomposition of these organisms will exacerbate the low dissolved oxygen conditions that are already contributing to the degradation of these three stream segments, in and downstream from the mixing zones (outfalls 011, 009) and discharge area (outfall 009ES).

**E.** *The permit mistakenly asserts that the highly toxic coal mine effluent will not cause any long-term impacts. The writing does not account for (i) the effects of chloride and sulfate on mercury (see part A, above); and (ii) the substantial resuspension/downstream movement of pollutants, which will promote chronic physiological stress, disease, and death of sensitive biota both within the mixing zones/discharge area and well beyond them.*

Intermittent riverine resuspension of pollutants is recognized as such a “common, ubiquitous” reality (Kleeberg et al. 2013) that books have been written about it (e.g., Van Rijn 1993, Westrich and Förstner 2007), and studies have tracked toxic contaminant movement downstream in rivers via resuspension of settled materials (e.g., Theis et al. 1988, Jamieson et al. 2005, Schneider et al. 2007). Despite this wealth of peer-reviewed, published science, the permit section entitled “Fate and Effect of Parameters Proposed for Increased Loading” does not make a science-based assessment of either the fate or the effects of the mining pollutants considered, nor can this information be found elsewhere in the permit. The writing states (pp.15, 17):

Chloride and sulfates would remain dissolved in the water and would move through the downstream continuum. Manganese, iron, nickel, copper, and total suspended solids will most likely settle and become part of the bed sediment.... Because of the near-real-time continuous monitoring of upstream and down-

stream conditions in the receiving stream, and the ability of the permittee's diffuser to adjust to flow and background concentration conditions, discharges will always [emphasis added] be into a waterbody that is below water quality standards and in concentrations and flow combinations that will not cause or contribute to an exceedance downstream of the mixing zone. No adverse impacts [emphasis added] to streams would occur as all water quality standards are expected to be met in the receiving water....The proposed activity will result in only short-term, temporary increases in pollutant loading [emphasis added] and will not result in long-term or permanent impacts to existing uses including aquatic life habitat.

Corrective information is provided as follows:

- The permit writing asserts that [all of the] chloride and sulfates will remain dissolved in the water and “move through the downstream continuum” without mention of any ill effects. The well-established reality instead is that there are strong chemical interactions between the overlying water and the stream sediment pore waters. That is, in part, why high chloride and high sulfate promote toxic mercury release from the sediments (section A, above).

\*\* Based on a review of chloride fate and transport in watersheds, streams, and lakes, once added to streams, (i) much of the chloride moves from the overlying water into sediment pore water (Kennedy et al. 1984; also see Lerman and Weiler 1970, Effler et al. 1990, Besser et al. 2009); there it undergoes a large suite of competitive equilibrium reactions with ionic mercury species (making toxic mercury more bioavailable; see section A of this letter and supporting references therein) and other metals; and (ii) some of the chloride, still in the overlying water, is moved downstream by currents (Ward et al. 2013). Analogously as for chloride movement through soils in watersheds, initial pore-water concentrations (from the water column) in streams and lakes can be elevated near the sediment surface (Lerman and Weiler 1970, Effler et al. 1990, Lax and Peterson 2008). Within chloride-unsaturated sediments, chloride moves mostly vertically downward through the sediments, driven by diffusion. As high loading to the overlying water continues, the pore water becomes a long-term chloride source to sub-surface groundwater (decades; Lax and Peterson 2008, Kelly et al. 2012 and references therein).

It should be noted that much of the high sulfate added to the overlying water *also* moves into the pore water (e.g., see Ng et al. 2017 and references therein), where it promotes toxic methylmercury production (see Section A of this letter) and toxic hydrogen sulfide production (below), can be directly toxic to biota (Elphick et al. 2011), etc.

\*\* *High concentrations of sulfate in the water*, such as those that would be allowed by the permit in all three affected stream segments, *lead to production of hydrogen sulfide in the sediments* (Stumm and Morgan 1995, Bernhardt and Palmer 2011). This occurs because the elevated water-column sulfate concentrations will stimulate microbial sulfate reduction in the sediments: the microbes use sulfate ( $\text{SO}_4^{2-}$ ) instead of oxygen (which is not available in anoxic sediments, or sparse in hypoxic sediments) in their consumption of organic matter. The sulfur (S) in the sulfates is converted to sulfide ( $\text{HS}^-$ ), then to hydrogen sulfide ( $\text{H}_2\text{S}$ ). Hydrogen sulfide is toxic to many organisms, from plants and other beneficial aquatic life to humans (Lamers et al. 1998, Bagarinao 1992, Reiffenstein et al. 1992). It has been implicated in mass mortalities of fish and other aquatic life (Bagarinao 1992 and references therein).

\*\* In addition to being directly toxic under some conditions (Elphick et al. 2011), *the high*

*sulfate will also promote eutrophication through **phosphorus release** from the sediments of the three streams (Bernhardt and Palmer 2011, and references therein): Sulfide binds strongly with iron in sediments and converts it to pyrite minerals, which is beneficial in reducing bioavailable iron; but much of the phosphorus in freshwaters is bound to iron minerals. In the high-sulfide surficial sediment environment resulting from the high water-column sulfate, the sulfide interferes with the iron-P bonds so that phosphorus is released to the water column (Caraco et al. 1989, 1993). By this mechanism, high sulfate additions to the overlying water is known to promote eutrophication of freshwaters (van der Welle et al. 2008, Myrbo et al. 2017).*

- The permit *gestimates* (p.15) that “manganese, iron, nickel, copper, and TSS will most likely settle and become part of the bed sediment in the river.” Peer-reviewed science has shown that at least a portion of the toxic heavy metals (e.g., cadmium, manganese, zinc, nickel) and TSS in alkaline mine waste effluent settle out and become embedded within the microbial biofilm matrix at the sediment/water interface (Bier et al. 2015). The permit writing indicates no consideration for resuspension/downstream movement of that “bed sediment” in the three affected streams.
- The permit writing, assuring readers of “near-real-time continuous monitoring upstream and downstream”, is *highly misleading because only flow (upstream) and one chemically related parameter (conductivity) will be monitored continuously* upstream and downstream from the three outfalls (IEPA 2019). **Most parameters will not be monitored adequately for assessment of compliance** (see, e.g., Robertson and Roerish 1999, Stansfield 2001):

\*\* The only information given about continuous (if that is the meaning of the permit writing, “full flow measurement”, which is not clear) flow is that, “the upstream flow should be based on the full flow measurement upstream of the proposed outfall 011 that shall be approved by the Agency”.

\*\* Metals in the discharges at the three outfalls, other than iron, will be monitored **twice per year and only total concentrations** will be measured. Regarding the latter point, *dissolved concentrations* are generally much more important for assessment of toxicity to aquatic biota, not total. Thus, it is not possible from the extremely sparse data (2 samples over an entire year) to gain insight about the threat of these metals to beneficial aquatic organisms.

\*\* Sulfate and dissolved iron will be monitored from the effluent **monthly** when discharging.

\*\* *There is no requirement to monitor chloride at any of the three outfalls. Instead, chloride will be calculated from conductivity data taken by two conductivity meters, one installed upstream, the other downstream from each outfall. The calculated value would be the only requirement in discharge monitoring reports. The conductivity meters are described as continuously monitoring, but no information is given as to the data collection frequency. Furthermore, the permit provides no information about the equation selected to derive calculated chloride values from conductivity data (for example, no information to address the question of how statistically strongly conductivity is correlated with chloride along the concentration gradient). The permit also provides no information science literature in support of the selected equation, or whether a robust background dataset was used to customize it for the Big Muddy River prior to applying the equation.*

\*\* Upstream from the discharge areas, the three streams will be monitored **once per year**,

and only for discharge rate, sulfate, chloride, and hardness (exceptions: flow and conductivity as described above).

\*\* Downstream from the discharge area, the river will be monitored *four times per year*, and only for discharge rate, sulfate, chloride, and hardness (exception – conductivity data as described above). Moreover, the permit provides steps that the mining company could take to request reduction or elimination of any downstream monitoring requirements.

\*\* Other mention of continuous monitoring in the permit writing (p.13) was that during operations of the pipeline, continuous flow monitors would be installed to provide protection against leakage.

\*\* No information was included in the permit about the frequency of monitoring TSS upstream or downstream of discharge locations, or in the effluents. “Monthly averages” must be based on at least three samples over a monthly period (35 Ill Adm. Code 304.104).

- The permit writing provides unrealistic assurances that (i) there will never be any violations of the water quality standards. Moreover, the writing makes mistaken assurances, without basis in science, that there will be no adverse impacts whatsoever, and no long-term impacts to existing uses including aquatic life habitat.

\*\* The Pond Creek Mine has had numerous previous violations of water quality standards (e.g., excessive iron, chloride, and manganese; see <https://echo.epa.gov/detailed-facility-report?fid=IL0077666>). Why, from now on, should IEPA or readers of the permit believe that the mine operation will be “perfect”?

\*\* As stated, a large body of peer-reviewed science repeatedly has shown that coal mine effluents cause major, long-term impacts to receiving waters in degraded water quality; otherwise-degraded habitats; physiological stress, disease, and death of beneficial aquatic life; and replacement of those organisms with highly tolerant, noxious, usually undesirable taxa (e.g., see Maccausland and McTammany 2007, Giam et al. 2018). Considering the scientific information presented above, there is no question but that the mine’s discharged effluent will cause or contribute to further degradation of the Big Muddy River.

**F. *Interactive effects of some pollutants, and enhanced bioavailability in low-oxygen conditions characteristic of the three affected stream segments, have not been considered in the permit.***

Coal mine alkaline effluent contains many toxic contaminants other than those considered for regulation in the three streams by this permit, such as antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, phenols, selenium, silver, and zinc (Watzlaf et al. 2004). Many metals in the above list are essential micronutrients, but become toxic at concentrations higher than needed for normal growth (Nies 1999). Others (e.g., cadmium and lead) have no known beneficial role in biota and are toxic even at extremely low concentrations (Rand and Petrocelli 1995). Toxic metals – including the substantial mercury that will be released from the sediments in and around the mixing zones (above) – and other substances are known to act additively or synergistically (Marking et al. 1977), yet none of these serious impacts were addressed in the permit. The following examples illustrate the high potential for synergistic and additive, adverse effects to beneficial aquatic life in the three stream segments affected by mining waste contamination from outfalls 009, 009ES, and 011:

- *Additive, adverse effect of [chloride + sulfate]* – The acute toxicity of chloride and sulfate (NaCl + Na<sub>2</sub>SO<sub>4</sub>) mixtures to juvenile unionid mussels in hardwaters (within the range

characteristic of the river segment affected by the Pond Creek Mine discharge) significantly increased with sulfate additions at or above 350 mg/L (Wang et al. 2018). The permit allows single values for sulfate as high as 2,120 mg/L (IEPA 2019, p.14). The fatmucket mussel species tests is reported to occur in the Big Muddy River drainage (Shasteen et al. 2012). The lower range of EC50s (median effective concentration, that is, the concentration expected to produce death or other effect in 50% of the test population) for fatmucket glochidia (sensitive larval stage) was reported at 441 mg chloride/L. The permit allows for chloride concentrations outside the mixing zones as high as 500 mg/L (IEPA 2019). These data indicate that permit levels derived individually for chloride or sulfate will not be protective at moderate to high, co-occurring concentrations of the two ions. Additive toxicity of NaCl + Na<sub>2</sub>SO<sub>4</sub> mixtures has also been reported from acute toxicity testing with the zooplankter *Ceriodaphnia dubia* (Erickson et al. 2017).

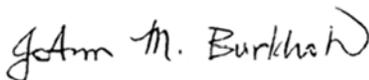
- *Synergistic, adverse effect of [nickel + mercury]* on the fatty acid composition of fish muscle tissues (Senthamilselvan et al. 2016). This impact is germane given that the body burden of mercury in fish already warrants warnings against human consumption and is a cause of degradation for listing the Big Muddy River – segment N-11 on Illinois' 303(d) list. According to IEPA (see <https://www2.illinois.gov/epa/topics/water-quality/watershed-management/tmdls/Pages/303d-list.aspx>), this river segment has been so listed for the past decade, indicating that substantial mercury contamination has occurred, ongoing.
- *Synergistic, adverse effect of [chromium + mercury]* on the histology and physiology of fish (Dwivedi et al. 2012). This impact is germane as explained above.

Such information helps to explain the recent finding that one coal mine constitutes a regional source of stress to stream fish assemblages: Daniel et al. (2015) tested threshold responses of fish metrics to coal and mineral mine densities. As expected, increased mine densities were associated with declines in multiple fish metrics, and mines had a worse impact on fish communities than other human-related land uses – *and just one mine in a watershed adversely affected fish throughout that watershed*. Synergistic and additive effects of the wide array of toxic pollutants in the effluent discharged to the Big Muddy River, Pond Creek, and the unnamed tributary by the Pond Creek Mine would contribute to this regional effect. That mine is not the only coal mine in the Big Muddy River watershed (e.g., see U.S. Energy Information Administration 2011, 2016). These points underscore the need to have a margin of safety in the permit to account for synergistic and additive impacts of the many pollutants in the mine waste effluents proposed for discharge at outfalls 009, 009ES, and 011 and the existing mine outfalls.

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Overall, in view of the issues raised above, it is my opinion that the proposed discharge to Big Muddy River segment N-11, Pond Creek segment NG-02, and the unnamed tributary to Pond Creek by the Pond Creek Mine would increase levels of toxic mercury to the detriment of fish consumption and public health; increase levels of harmful algae to the detriment of swimming and other recreational uses; and cause major harm to aquatic life, long-term.

Sincerely,



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