VERIFIED DIRECT TESTIMONY OF ROBERT RIDGE

Q1. Please state your name, business address and title.

A1. My name is Robert Ridge. My business address is Valparaiso Eastport Center, 3001 Leonard Drive, Valparaiso, Indiana 46383. I am the Manager of Project Engineering of Northern Indiana Public Service Company LLC ("NIPSCO").

Q2. Please briefly describe your educational and business experience.

A2. I received a Bachelor of Science degree in Civil Engineering from Purdue University Calumet in 2013. I began my full-time employment with NIPSCO in 2013 as an Engineer. My experience includes project engineer and project manager positions in the Major Projects Generation group prior to accepting my current position of Manager of Project Engineering in 2019.

Q3. What are your current responsibilities as Manager of Generation Major Projects?

A3. As Manager of Project Engineering for the Major Projects Generation Group, I am responsible for the management of capital and major Asset Retirement Obligation projects at NIPSCO's generating stations. These

responsibilities include cost estimating, cost tracking, project controls, scheduling, and project execution of NIPSCO's Generation major projects. My department has teams that manage cost control as well as a staff of employees who manage the project controls and scheduling of NIPSCO's Generation major projects. Included in my group are project engineers and project managers that execute these projects under my direction.

Q4. Have you previously testified before this or any other regulatory commission?

A4. No.

Q5. What is the purpose of your testimony?

A5. The purpose of my testimony is to explain NIPSCO's commercial and project execution activities related to the proposed ash pond closure project at NIPSCO's Michigan City Generating Station ("Michigan City") (the "Ash Pond Compliance Project"). I also explain the alternatives NIPSCO considered, NIPSCO's cost estimate for the Ash Pond Compliance Project, and its execution timing to achieve compliance.

Q6. Are you sponsoring any attachments to your testimony?

A6. Yes. I am sponsoring the following attachments:

Attachment 3-A	Ash Pond Compliance Project
Attachment 3-B	Approval letter dated March 10, 2021 from the Indiana Department of Environmental Management ("IDEM") approving Michigan City's Closure/Post-Closure Plan for the Ash Pond Compliance Project
Attachment 3-C	Approval letter dated November 2, 2021 from IDEM approving dewatering activities related to the Ash Pond Compliance Project
Attachment 3-D	Estimate for closure by removal
Attachment 3-E	Estimate for closure in place
Attachment 3-F	Information regarding NIPSCO's analysis to utilize CCR for beneficial reuse

Q7. Please describe Michigan City.

A7. Michigan City is a coal-fired generating station located in Michigan City, Indiana. As part of the historical operation of the plant, coal combustion residuals ("CCR") materials have been placed and managed in five on-site ponds totaling 11.4 acres.

Q8. Please describe the Ash Pond Compliance Project.

A8. As further discussed by NIPSCO Witness Turman, NIPSCO is closing five ponds at Michigan City using a closure by removal approach, which includes dewatering and excavation of CCR material. Removed CCR material will primarily be transported to the CCR-permitted landfill at

NIPSCO's R.M. Schahfer Generating Station ("Schahfer") in Wheatfield, Indiana. After CCR material is removed, the ponds will be backfilled with clean fill and topsoil to allow vegetation to grow and future storm water to shed off the closed ponds. While NIPSCO Witness Turman explains the environmental compliance aspects of the Ash Pond Compliance Project, I am aware that the earliest compliance date for closure of the ash ponds is November 10, 2023.[1] As shown in Attachment 3-B, NIPSCO received approval of Michigan City's Closure/Post-Closure Plan from IDEM on March 10, 2021. Since that time, NIPSCO proceeded to bid and award the project. As of the date of the filing of this testimony, the project is planned to be substantially complete by December 9, 2022.

Q9. Please explain the closure alternatives NIPSCO considered and the estimated costs of the alternatives.

A9. NIPSCO Witness Turman explains the details of the various compliance alternatives, including closure by removal ("CBR") and closure in place

[1] For existing CCR ash ponds, closure must be complete within five years of commencing closure activities. The Michigan City CCR ash ponds ceased receipt of waste on October 11, 2018 and April 15, 2019, resulting in a compliance date for closure of the ash ponds of November 10, 2023 and May 15, 2024, respectively.

("CIP"). As part of the Major Projects team, I assisted in developing the cost estimates for both alternatives, CBR and CIP.

In 2019, the Major Projects team contracted Wood Environmental & Infrastructure Solutions, Inc. ("Wood"), formerly Amec Foster Wheeler Environmental & Infrastructure, Inc., to assist in the development of cost estimates for CBR and CIP options for the Ash Pond Compliance Project at Michigan City. This effort included development of preliminary engineering drawings and associated information to allow Wood to define the project scope and estimate unit quantities of material that would be needed for completion of the project. Wood was also able to identify key scope differences between the two approaches. In addition to not removing CCR material prior to installing a cover system for a CIP option, one of the other key differences between the two options is that, if CIP was pursued, it was anticipated a slurry wall would need to be installed around the perimeter of the closed ponds to allow a pump and treatment system to be installed for future groundwater corrective measures. As shown in

Attachments 3-D and 3-E, the Class 3 point estimates for CBR and CIP were $26.1 million and $37.2 million, respectively.[2]

Q10. Did NIPSCO consider the potential to beneficially reuse the CCRs being removed from the five ponds? If so, please explain what was considered.

A10. Yes. As shown in Attachment 3-F, NIPSCO reviewed multiple options to beneficially reuse the CCRs being removed from the five ponds. NIPSCO previously sold and continues to sell boiler slag generated as a byproduct at Michigan City for beneficial reuse. Any boiler slag excavated during the Ash Pond Compliance Project which meets the specified requirements will be sold for beneficial reuse and will be credited to the overall cost of the Ash Pond Compliance Project. NIPSCO also reviewed the potential of beneficial reuse for fly ash that is currently contained within the ponds at Michigan City. This review indicated that Michigan City did not have the quality or quantity of material needed to allow beneficial reuse to be a practical solution for fly ash.

[2] These estimates excluded owner's costs, escalation, indirect costs, and allowance for funds used during construction ("AFUDC"), as well as the accuracy range of the estimates associated with a Class 3 estimate.

Q11. Once CBR was determined to be the most appropriate closure method, how did NIPSCO proceed?

A11. Once this was determined, the project team continued to progress the engineering design for CBR as well as the Closure/Post-Closure Plan with IDEM to ultimately receive approval on March 10, 2021. Next, NIPSCO prepared and issued a request for proposals ("RFP") on July 30, 2021 to three potential contractor. NIPSCO chose those three potential contractors due to their experience and knowledge in performing similar scope projects. This list of contractors was narrowed down from a list of over 20 contractors that were reviewed for consideration.

Q12. What were the results of that RFP process?

A12. Bids from three potential contractors were submitted, and NIPSCO ultimately awarded the construction scope of this project to Charah, LLC ("Charah") on December 15, 2021.

Q13. What factors led to Charah being selected as the contractor for the Ash Pond Compliance Project?

A13. Of the three potential contractors, Charah submitted the most complete proposal, met the requirements of the work, and was very cost competitive.

Charah also provided the most detailed work and safety plans. Moreover, Charah submitted a project schedule illustrating the project could be completed within a single construction season. A reduced construction window leads to reduced costs incurred by NIPSCO via Charah's contract, as well as a reduced timeframe needed for NIPSCO's onsite supervision and project support.

Q14. Will Charah be performing all of the project work?

A14. No. As is common in the industry, as the general contractor, Charah has subcontracted some of the work to specialty subcontractors. These subcontractors are reviewed by Charah and NIPSCO to ensure they can meet the safety and quality requirements for the project. The project will also be completed under the requirements of the National Maintenance Agreements Policy Committee, Inc. ("NMAPC") as a Yellow Card Project, which has union requirements,[3] which provide multiple benefits both to NIPSCO and the union members. In accordance with these requirements, union member trucking organizations are being subcontracted to transport excavated ash from Michigan City approximately 40 miles away to the

[3] https://www.nmapc.org/about/.

permitted landfill at Schahfer. To meet the planned project schedule, the contractor plans to utilize multiple subcontractors for this activity due in part to the volume of work that is being completed in the region.

Q15. When did NIPSCO commence engineering and preparation work? And why was it necessary to do so at that time?

A15. As further discussed by NIPSCO Witness Turman, NIPSCO is working to meet the compliance deadline of November 10, 2023. Considering that date, NIPSCO began engineering work in 2017 to start developing the Closure/Post-Closure Plan which was submitted to IDEM for review. Engineering continued to progress as NIPSCO received feedback from IDEM during the review and approval process. After awarding the RFP to Charah, some initial preparation work began on March 1, 2022 and has continued over the next couple months. Undertaking this kind of work was necessary, because a delayed project start would potentially cause NIPSCO to: (1) lose critical subcontracted resources with a limited ability to secure other qualified workers; (2) push excavation activities into the winter season which can slow progress and add additional costs; and (3) expand dewatering activities beyond the time allowed in the dewatering approval

provided by IDEM. Ultimately, had NIPSCO waited to do any site work until after filing the petition in this proceeding, it would have put NIPSCO at increased risk of missing the compliance deadline.

As further discussed by NIPSCO Witness Turman and below, there is similarly scoped CCR pond work required at Schahfer and the Bailly Generating Station ("Bailly"). Completing the Ash Pond Compliance Project in 2022 reduces potential impacts to the schedule and associated compliance dates for the work that will be performed at Schahfer and Bailly. Attempting to complete work at multiple locations simultaneously places constraints on subcontracted resources available in the area, as well as logistics concerns when offloading material into the landfill at Schahfer.

Q16. As of the date of filing this testimony, where is NIPSCO currently in the progression of the Ash Pond Compliance Project?

A16. As of May 1, 2022, excavation work began on April 27, 2022. Workers have been onsite since February 2022 to support mobilization. Mobilization work involves all the preparatory work necessary before formal excavation begins. This work entails having specialty equipment delivered and set up onsite, which includes excavation equipment, dewatering and water

treatment systems, job trailers, restroom facilities, tools, and truck washes. In the first few weeks of work, NIPSCO has also installed stormwater pollution prevention measures and truck washes, and has completed a dewatering and water treatment pilot test.

Q17. What problems could occur if the construction were pushed into the winter season beyond the December 9, 2022 targeted completion date?

A17. Most of the problems stem from the northern Indiana winter weather, which often becomes more impactful given the work site is located along Lake Michigan. Frozen ground makes work difficult. Snow, ice, and wind can prohibit workers from traveling to the work site and limit the hours available for safe work to occur. As described above, because the Ash Pond Compliance Project involves extensive trucking activity, icy road conditions can slow or halt progress and use large amounts of fuel. Winter storms can affect the work site and work equipment, increasing costs and slowing progress. Freezing conditions can also lead to increased cost and complications for the dewatering and water treatment system that will be used to support the project.

Q18. Why is timing so crucial when the planned completion date is December 9, 2022, 11 months ahead of the final compliance date of November 10, 2023?

A18. As I discussed above, NIPSCO faces potential delay on multiple fronts. Importantly, working through the winter is extremely difficult meaning from approximately December to March (four months), progress will be slow if progress is made at all. Plus, NIPSCO and its contractor need an additional warm season to deal with delays caused by unknowns. Of the three bids NIPSCO received for the project, only one of the bidders provided a work plan that confidently indicated the work could be completed in a single construction season. Completing the project over multiple construction seasons leads to increased project costs and risk to achieving the compliance date.

Q19. Above, you briefly described the work at the five ponds. Please further explain the work activities involved with the Ash Pond Compliance Project.

A19. The Ash Pond Compliance Project involves several scopes of work. One of the first steps of the project includes installation of a dewatering system to

lower groundwater elevations to facilitate safe excavation of CCR at deeper elevations. A water treatment system will be installed to treat, as needed, contact water, interstitial water, and water generated during groundwater extraction activities. Excavation activities will be completed utilizing equipment such as excavators, dozers, and front end loaders. CCR will be loaded into on-road dump trucks for offsite disposal. It is estimated that approximately 170,600 cubic yards of material will be removed from the ponds. The majority of the CCR removed from the ponds will be transported to Schahfer for disposal in NIPSCO's existing, permitted landfill. Material that meets the requirements for beneficial reuse will be transported to a local facility for this purpose. After CCR removal is complete for each pond, the pond will be backfilled with clean fill obtained from an offsite borrow location. It is estimated that approximately 164,100 cubic yards of offsite material will be utilized to backfill the ponds. As the ponds are backfilled, stormwater features will be installed, and vegetation will be established to allow future stormwater to shed off of the closed ponds.

Q20. Please explain the dewatering process and its time requirements.

A20. As part of the project, NIPSCO was required to secure approval from IDEM for dewatering activities. As shown in Attachment 3-C, IDEM's approval specifies that the dewatering activities shall be completed during a continuous 12-month window. If NIPSCO were to continue to delay the project to the point where the project would need to be extended through the winter months, this could run the risk of requiring the need to dewater for longer than the 12-month period that is currently allowed. In that case, NIPSCO would be required to modify its existing National pollutant Discharge Elimination System (NPDES) permit to allow for additional dewatering activities. The process to secure a permit revision can take approximately six months. NIPSCO may not have time to secure a revised permit and complete the CCR closure project by the November 10, 2023 deadline.

Q21. What measures has NIPSCO put in place to ensure all aspects of the Ash Pond Compliance Project are executed in compliance with all requirements?

A21. NIPSCO submitted a Construction Quality Assurance ("CQA") Plan to IDEM with the Closure/Post-Closure Plan, which was approved on March

10, 2021. An updated CQA Plan was also submitted to IDEM after award of the construction contract to Charah. NIPSCO has employed a fulltime, third party CQA contractor to ensure work is being performed in accordance with the CQA Plan and Closure/Post-Closure Plan.

Q22. What is NIPSCO's current cost estimate for the Ash Pond Compliance Project?

A22. As shown in Attachment 3-A, the current cost estimate for the Ash Pond Compliance Project is $40,044,000 ($36,112,000 in direct costs and $3,932,000 in indirect costs). This cost estimate is the result of updates from the CBR estimate prepared by Wood (Attachment 3-D) from 2019 based on the final design of the closure and requirements in the approved Closure/Post-Closure Plan. The current cost estimate includes owner's costs, contingency, and reflects actual contract amounts, most notably from NIPSCO's construction contractor (Charah) to perform the work. This estimate is considered to be a Class 2 estimate.

Q23. Does NIPSCO's contract with Charah include any cost protections?

A23. Yes. The contract was awarded primarily utilizing firm unit prices for the work to be performed. The contract also includes liquidated damages to

help ensure the project is completed within the defined project schedule. The contract does however include provisions to account for fluctuations in unit quantities, as well as fuel costs.

Q24. Is the Ash Pond Compliance Project intended to and will it actually extend the useful life of any existing NIPSCO facility?

A24. Unlike the CCR Compliance Project approved in Cause No. 44872, which was necessary to allow coal-fired generating units in question to continue operations, the Ash Pond Compliance Project is not intended to "extend" the useful life of Michigan City or other NIPSCO facilities. Instead, the project is intended to allow NIPSCO to comply with the requirements of the Resource Conservation and Recovery Act ("RCRA") and the Environmental Protection Agency's ("EPA") Coal Combustion Residuals ("CCR") rule ("CCR Rule"), which was promulgated under RCRA, by closing five ponds at Michigan City.[5] Achieving compliance with these requirements does preserve NIPSCO's ability to use the site for generation.

[5] The federally mandated requirements contained in RCRA and the CCR Rule and NIPSCO's compliance therewith is further discussed by NIPSCO Witness Turman.

Q25. Is the Ash Pond Compliance Project the only compliance project at NIPSCO's generating stations driven by the CCR Rule?

A25. No. As further discussed by NIPSCO Witness Turman, there is similarly scoped CCR pond work required at Schahfer and Bailly, as well as "remediation measures" and groundwater monitoring work at Michigan City, Schahfer, and Bailly. While this work is required by the CCR Rule, it is not within the scope of the Ash Pond Compliance Project. As noted by NIPSCO Witness Turman, NIPSCO currently plans to seek recovery of these costs through a separate proceeding(s) under the FMCA Statute.

Q26. Does this conclude your prefiled direct testimony?

A26. Yes.

VERIFICATION

I, Robert Ridge, Manager of Project Engineering for Northern Indiana Public Service Company LLC, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.

Robert Ridge

Date: May 2, 2022

Ash Pond Compliance Project

Project	Construction Contracts	Engineering	Owner's Costs	Contingency	Directs ($)	Indirects ($)	Total (Direct and Indirects) ($)	Construction Start Date	Construction Complete
Compliance Plan									
Michigan City Generating Station									
Ash Pond Compliance Project	26,666,000	2,657,000	3,488,000	3,301,000	36,112,000	3,932,000	40,044,000	3/1/2022	12/9/2022
Total					**36,112,000**	**3,932,000**	**40,044,000**		

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

March 10, 2021

VIA EMAIL jloewe@nisource.com
Northern Indiana Public Service Company
Attn: Jeff Loewe
801 East 86th Avenue
Merrillville, Indiana 46410

Dear Jeff Loewe:

Re: Approval of Closure/Post-Closure Plan
Michigan City Generating Station
SW Program ID 46-010
LaPorte County

Northern Indiana Public Service Company's (NIPSCO) coal combustion residuals (CCR) surface impoundment closure and post-closure plan for the Michigan City Generating Station (MCGS) is approved under 329 IAC 10-3-1(9) and 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D (the federal CCR regulations). The MCGS surface impoundment system consists of Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, Secondary Settling Pond No. 2, and the Boiler Slag Pond. This approval is subject to the terms of this letter, the closure and post-closure plans referenced in this document, and the enclosed requirements. The MGCS is located at 101 Wabash Street, Michigan City, LaPorte County, Indiana.

The MCGS surface impoundment system closure approval encompasses approximately 11.4 acres. The entire 11.4 acres will be closed using the closure by removal approach. The CCR material, approximately one foot of blast furnace slag layer placed in the bottom of the ponds (slag layer), and one additional foot of material beneath the slag layer, will be excavated. The excavated area will be backfilled with clean soil. Upon completing closure, these ponds will be subject to post-closure requirements.

Public records for your facility are available in IDEM's Virtual File Cabinet at www.in.gov/idem. Documents related to this approval include the closure and post-closure plans dated December 20, 2018 (VFC #82976831), and additional information dated February 28, 2019 (VFC #82709758), June 5, 2019 (VFC #82791433), February 13, 2020 (VFC #82914980), September 10, 2020 (VFC #83044085), and December 7, 2020 (VFC #83081101).

The five ponds in the MCGS surface impoundment system are also considered Solid Waste Management Units subject to RCRA Corrective Action under the Agreed

Order in Cause No. H-13872 (VFC #69102798). Documents related to RCRA Corrective Action are available in VFC under the hazardous waste program ID IND000715375.

This approval does not: convey any property rights of any sort or any exclusive privileges; authorize any injury to any person or private property or invasion of other private rights or any infringement of federal, state, or local laws or regulations; or preempt any duty to comply with other state or local requirements.

If you wish to appeal this decision, you must file a request for administrative review with the Office of Environmental Adjudication within 18 days after the postmark of this letter. The enclosed guidance provides information on the appeal process and your rights and responsibilities for filing an adequate and timely appeal.

If you have any questions, please contact Alysa Raleigh, the Permit Manager assigned this facility, by dialing (317) 234-4596 or by e-mail at ARaleigh@idem.in.gov.

Sincerely,

Stephen D. Thill, Chief
Permits Branch
Office of Land Quality

Enclosures: Approval Requirements
Guidance on How to Appeal IDEM Decision

cc with enclosures: LaPorte County Health Department
LaPorte County Commissioners
Laporte County Solid Waste Management District
Director, Northwest Regional Office
Mayor, City of Michigan City

REQUIREMENTS

A. General Requirements

B. Closure Requirements

C. Post-Closure Requirements

D. Groundwater Monitoring Requirements

E. Financial Responsibilities for Closure and Post-Closure

F. Compliance Schedule Requirements

A. GENERAL REQUIREMENTS

A1. The owner or operator must close and maintain the Michigan City Generating Station (MCGS) surface impoundment system as described in the approved plans and specifications in the document titled "Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application – Michigan City Generating Station," dated December 20, 2018 (VFC #82976831), the following subsequent submittals, and the requirements of this approval:

a. Document dated February 28, 2019 (VFC #82709758), Supplemental Addendum for Monitoring Well Network;

b. Document dated June 5, 2019 (VFC #82791433), response to request for additional information (RAI) dated April 9, 2019 (VFC #82746466);

c. Document dated February 13, 2020 (VFC #82914980), NIPSCO MCGS Impoundment Closure; and

d. Document dated December 7, 2020 (VFC #83081101).

The MCGS surface impoundment system consists of the Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, Secondary Settling Pond No. 2, and the Boiler Slag Pond.

A2. The owner or operator must request approval from IDEM before modifying the approved closure and post-closure requirements and procedures.

A3. The owner or operator must call **(888) 233-7745** (IDEM's emergency response line) as soon as possible after learning of any event that may cause an imminent and substantial endangerment to human health or the environment, such as a reportable spill (327 IAC 2-6.1) or a fire or explosion that requires the response of the local fire department.

The owner or operator must follow up by sending a written report to the Solid Waste Permits Section at the address given in Requirement A4 within five business days after the event. The report must describe the event, and actions taken or planned to correct the event and prevent its recurrence.

A4. Unless otherwise noted, submittals must be sent to the permit manager assigned your facility at the following address:

Indiana Department of Environmental Management
Office of Land Quality
Solid Waste Permits Section
IGCN 1101
100 North Senate Avenue
Indianapolis, IN 46204-2251

We greatly appreciate an electronic copy in Acrobat PDF format on CD or DVD, or emailed to the Permit Manager.

A5. Records of all monitoring information and activities which are required to be submitted by this approval or specified in the closure or post-closure plan, must contain information listed in 329 IAC 10-1-4(a). Records must be maintained as specified in 40 CFR 257.105 and 329 IAC 10-1-4(b) and (c).

A6. Reports must be signed as specified in 329 IAC 10-11-3(b).

B. CLOSURE REQUIREMENTS

B1. The owner or operator must follow the approved closure and post-closure plans and specifications for the MCGS surface impoundment system as described in the approved plans and specifications in the document titled "Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application – Michigan City Generating Station," dated December 20, 2018 (VFC #82976831), the following submittals, and the requirements of this approval:

a. Document dated February 28, 2019 (VFC #82709758);

b. Document dated June 5, 2019 (VFC #82791433); and

c. Document dated February 13, 2020 (VFC #82914980).

B2. The MCGS surface impoundment system is approved to close by the closure by removal[1] method with removal of CCR material, the slag layer, and one additional foot of material. All excavated material must be managed or disposed of properly according to approved plans and/or local, state, and federal regulations. The MCGS surface impoundment system consists of the following ponds:

- Primary Settling Pond No.1 - This pond is subject to 329 IAC 10-3-1(9).
- Secondary Settling Pond No.1 - This pond is subject to 329 IAC 10-3-1(9).
- Primary Settling Pond No.2 - This pond is subject to 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D.
- Secondary Settling Pond No.2 - This pond is subject to 329 IAC 10-3-1(9).
- The Boiler Slag Pond - This pond is subject to 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D.

B3. The owner or operator must notify IDEM in writing at least 15 days before initiating each of the following closure activities for the MCGS surface impoundments:

a. Excavation of the CCR materials

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[1] *As used in this approval, "removal" does not mean closure as contemplated by 40 CFR 257.102(c). "Removal" as used herein is intended to have its commonly understood, everyday meaning, and is not intended as a term of art.*

b. Backfilling the excavated area upon removal of one additional foot of material

c. Construction of the final cover

B4. The owner or operator must follow the schedule included in the supplemental closure and post-closure document dated December 7, 2020 (VFC #83081101, Attachment 1, p. 9 of 318) to complete the preparation activities and final closure of the MCGS surface impoundment system.

B5. The owner or operator must manage surface water as described in the approved plans and meet the following requirements:

a. Maintain drainage ditches and the sedimentation basin to prevent off-site deposition of waste and sediments. Remove sediment deposits from drainage ditches as necessary to convey storm water as designed.

b. Construct temporary run-off structures as needed in areas that are unable to drain to the sedimentation basin.

c. Construct erosion and surface water control structures as depicted on the following drawings submitted with the document dated February 13, 2020 (VFC #82914980, pp. 85 and 92-96 of 100):

(1) Sheet C-0289, Final Grading Plan – Overall,

(2) Sheet C-0296, Storm Sewer Plan and Profiles,

(3) Sheet C-0297, Storm Sewer Details,

(4) Sheet C-0298, Civil Details,

(5) Sheet C-0299, Erosion and Sediment Control Plan, and

(6) Sheet C-0300, Erosion & Sediment Control Details and Notes.

B6. The owner or operator must properly dispose of water that has been in contact with waste, in accordance with all applicable local, state, and federal laws (329 IAC 10-28-16 and IC 13-30-2-1), including applicable NPDES permit or intermediate discharge limits provided by IDEM Office of Water Quality (OWQ) NPDES Permits Section.

B7. The owner or operator must perform inspections of the MCGS surface impoundment system until completion of the final closure as described in 40 CFR 257.83 (Inspection Requirement for CCR Surface Impoundments) and as required by this approval.

B8. The owner or operator must adopt measures that will effectively minimize coal combustion residuals from becoming airborne, including waste that generates fugitive dust (40 CFR 257.80) (Air Criteria) and fugitive particulate matter, in a way that does not violate the rule for fugitive dust (326 IAC 6-4) or fugitive particulate matter (326 IAC 6-5), including 326 IAC 6-5-4(g) for solid waste handling control measures (329 IAC 10-8.2-2). The owner or operator must implement dust control measures as specified in the facility's Coal Combustion Residue Fugitive Dust Control Plan dated October, 2015 (VFC #82791433, Attachment 2-1, pp. 9 – 16 of 72) and the project specific dust control plan according to Compliance Schedule Requirement F2, and take any additional steps necessary to prevent violations of fugitive dust rules and 40 CFR 257.80.

B9. The owner or operator must follow the confirmation procedure for the removal of CCR material, the slag layer, and one additional foot of material from the MCGS surface impoundments as described in the document dated December 20, 2018 (VFC #82976831, pp. 25-27 of 951). The approximate bottom of CCR excavation contours are depicted on the drawing titled "Sheet C-0285, CCR Excavation Plan - Overall," revised February 10, 2020 (VFC #82914980, p. 81 of 100).

To verify waste, slag, and additional material excavation, the facility must provide surveys and photographs for the following surfaces, as described in the document dated February 13, 2020 (VFC #82914980, Appendix A, pp. 73- 74 of 100):

- The bottom of CCR material excavation;
- The bottom of blast furnace slag layer excavation; and
- The bottom of one-foot of additional material excavation.

B10. The owner or operator may use amendments such as, cement kiln dust [CKD], quick lime [Lime], lime kiln dust [LKD], or portland Type I cement [Portand] to stabilize the CCR materials in the MCGS surface impoundment system as approved by IDEM upon submittal.

B11. The owner or operator must follow the facility's approved grading plan and construct the final cover for the MCGS surface impoundment system as follows:

a. As specified in the approvad final grading plan on the drawing titled "Sheet C-0289, Final Grading Plan – Overall," revised February 10, 2020 (VFC #82914980, p. 85 of 100).

b. Grade and stabilize the final cover as specified in 329 IAC 10-28-14.

B12. The owner or operator must construct the final cover in compliance with the following specifications:

a. **For Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, and Secondary Settling Pond No. 2**.

The final cover system starting from top to the bottom of excavation grade must consist of the following as shown in Detail 9 of the drawing titled "Sheet C-0298, Civil Details," revised February 10, 2020 (VFC #82914980, p. 94 of 100).

- 6 inches of topsoil
- 18 inches of compacted clean soil consisting of GC, SM, SC, ML-CL, and CL in accordance with the Unified Soil Classification System (USCS) with a permeability no greater than 1 x 10^{-5} centimeter/second
- Compacted clean soil structural fill consisting of SM, SW, SC, SP, ML, and CL in accordance with USCS (thickness varies)

b. **For Boiler Slag Pond**.

(1) The final cover system for the area in the immediate vincinty of the underground recirculation water pipes starting from top to the bottom of subgrade (above the CCR material left in place) must consist of the following as shown in Section K-K' and Section L-L' of the drawing titled "Sheet C-0295, Profiles and Cross Sections – 03," revised February 10, 2020 (VFC #82914980, p. 91 of 100).

- Flowable backfill to final grade (thickness varies)
- 40 mil double sided textured linear low-density polyethylene (LLDPE)

(2) The final cover system for the remaining area, after the removal of CCR material, the slag layer, and one additional foot of material as specified in Requirement B9, starting from top to the bottom of excavation grade must consist of the following as shown in Detail 7 of the drawing titled "Sheet C-0298, Civil Details – CCR Surface Impoundment Closure Design," revised February 10, 2020 (VFC #82914980, p. 94 of 100).

- 12 inches of INDOT No.2 crushed stone
- 12 ounce/square yard nonwoven geotextile
- 24 inches of compacted clean soil consisting of GC, SM, SC, ML-CL, and CL in accordance with the Unified Soil Classification System (USCS) with a permeability no greater than 1 x 10^{-5} centimeter/second
- Compacted clean soil structural fill consisting of SM, SW, SC, SP, ML, and CL in accordance with USCS (thickness varies)

B13. The owner or operator must test and install final cover components as specified in the approved Construction Quality Assurance (CQA) Plan submitted with document dated February 13, 2020 (VFC #82914980, pp. 25-74 of 100) and as revised according to Compliance Schedule Requirement F3.

B14. The owner or operator must submit a final closure certification, and verification of environmental restrictive covenant (ERC) and deed notation to IDEM no later than 90 days after the completion of construction of the final cover system and establishment of vegetation. The final closure certification must comply with the following:

a. Meet the requirements of 40 CFR 257.102(f)(3), (g), (h), and (i), and 329 IAC 10, as applicable.

b. Certify the final closure is constructed according to the approved closure plan and the CQA plan.

c. A registered professional engineer must certify the closure construction complies with the approved plans and specifications.

d. The final closure certification must include the following:

(1) The boundaries of the certified area,

(2) The results of all tests conducted during construction,

(3) Documentation of all storm water management features that have been constructed or installed to the extent possible as designed,

(4) Any deviation/changes from the approved closure plan must be noted and explained in the report, if any, and

(5) Surveys and photographic verification for the following: the bottom of CCR material excavation, the bottom of slag layer excavation, the bottom of one-foot of additional material excavation, and the final cover elevations.

C. POST-CLOSURE REQUIREMENTS

C1. The owner or operator must perform a minimum of 30 years of post-closure monitoring and maintenance including the activities specified in the supplemental closure and post-closure document dated December 7, 2020 (VFC #83081101, Attachment 2, pp. 10 - 21 of 318), and the following requirements for the MCGS surface impoundment system:

a. Performance standards and post-closure duties, as specified in requirements of 40 CFR 257.104 and 329 IAC 10, as applicable.

b. The 30-year post-closure period will begin when all areas of the MCGS surface impoundment system is certified closed and IDEM accepts the certification.

c. Monitor and maintain the closed areas of the MCGS surface impoundment system until the 30-year post-closure period begins.

d. Maintain the exterior (waterside) sheet pile along Lake Michigan, including repair of any damage which compromises the structural integrity of the wall as determined by a qualified professional engineer, to provide flood protection against storm events throughout the closure and during post-closure care period.

Please note the owner or operator is already required to maintain the integrity of the sheet pile wall along Trail Creek pursuant to applicable law.

C2. To be released from post-closure monitoring, the owner or operator must submit a post-closure certification statement signed by both the owner/operator and a registered professional engineer stating that the post-closure care requirements have been met and the surface impoundments are stabilized. The post-closure certification is considered adequate unless, within 90 days of receipt of the post-closure certification, IDEM either notifies the owner/operator the certification is inadequate or issues a notice of deficiency that post-closure care is not complete, including actions necessary to correct the deficiencies.

C3. The owner or operator must comply with facility's ERC and/or deed restriction subsequent to the completion of post-closure care certification. The owner or operator is responsible for the following:

a. Correcting and controlling any nuisance conditions occurring at the facility (329 IAC 10-31-5);

b. Eliminating any threat to human health or the environment (329 IAC 10-31-6); and

c. Performing any remedial action at the facility, if necessary (329 IAC 10-31-7).

D. GROUNDWATER MONITORING REQUIREMENTS

D1. The owner or operator must comply with 329 IAC 10-9-1(c) and 40 CFR 257, Subpart D (Groundwater Monitoring and Corrective Action).

D2. The owner or operator must conduct groundwater monitoring throughout the closure and the 30-year post-closure care period of the unit (40 CFR 257.104(c)). IDEM will extend the post-closure care period if the facility is under assessment monitoring until the facility returns to detection monitoring (40 CFR 257.104(c)(2)).

MONITORING DEVICES

D3. The facility's groundwater monitoring system (System) includes the following groundwater monitoring wells: GMMW-1, GMMW-2, GAMW-01A, GAMW-01B, GAMW-02, GAMW-03A, GAMW-03B, GAMW-10, GAMW-14, GAMW-15, GAMW-16, MW-3, MW-103, MW-103A, MW-104, MW-105, MW-105A, MW-110, MW-113, MW-114, MW-115, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119. Background groundwater monitoring wells are MW-110, MW-113, MW-114, and MW-115.

At least 60 days before installing new monitoring devices, the owner or operator must submit a device-installation plan for IDEM approval. See Requirement F8 regarding the installation plan for groundwater monitoring wells MW-103A, MW-113, MW-114, MW-115, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119.

The plan must provide the following:

a. A map showing the location of each device with respect to the facility's entire System and a current potentiometric surface.

b. A demonstration that each device will yield representative groundwater samples at an appropriate location and depth within the same aquifer or aquifers as the facility's existing System, and will meet the installation requirements of 40 CFR 257.91(e).

c. Drilling methods and procedures that follow 329 IAC 10-21-4; well construction materials and details, including protocol for collecting, describing, and analyzing consolidated or unconsolidated materials (329 IAC 10-24-3(3)).

d. An example of a borehole log that includes information specified under 329 IAC 10-24-3(2).

e. Environmental qualifications of all field personnel.

f. Provisions to include the installation records in the facility operating record (40 CFR 257.91(e)(1)).

The owner or operator must submit all field documentation to IDEM within 60 days after completing all related field work.

D4. The owner or operator must label all groundwater monitoring wells with a permanent and unique identification. When reporting well and piezometer information, the owner or operator must include the identification for each well.

D5. The owner or operator must secure the access ways to all groundwater monitoring wells to prevent unauthorized access and maintain the access ways so they are passable year round with the exception of flooding conditions.

D6. The owner or operator must maintain all groundwater monitoring wells as follows:

a. Complete necessary repairs, other than replacement (see Requirement D8), within 10 days after discovery or other time frame approved by IDEM.

b. Keep the wells securely capped and locked when not in use.

c. Repair all cracks in and around the casings and well pads that may affect the integrity of the wells.

d. Control vegetation height.

e. Redevelop the wells as needed.

D7. When abandoning a groundwater monitoring well that is part of the facility's approved System (listed in Requirement D3), the owner or operator must:

a. Submit a written proposal for approval explaining the reasons for and detailing the method of abandonment.

b. Use methods that comply with Indiana Department of Natural Resources (IDNR) regulation 312 IAC 13-10-2.

c. Notify the IDEM Geology Section by phone, email, or letter at least 10 days before the date the abandonment work will occur.

d. Provide written notification of abandonment to IDEM and IDNR within 30 days after plugging is complete. (IDNR (312 IAC 13-10-2(f)) requires written notice.); and

e. Include the abandonment records in the facility operating record (40 CFR 257.91(e)(1)).

D8. The owner or operator must notify IDEM by phone, email, or letter within 10 days after discovering that a groundwater monitoring well has been destroyed or is not functioning properly. The owner or operator must repair the well if possible. If the well cannot be repaired, then within 30 days after discovery, the owner or operator must submit a proposal for abandonment or replacement.

PLANS

D9. The permittee must follow the Sampling and Analysis Plan (SAP) in Attachment 3 of the Closure Application Approval Letter Response dated December 7, 2020 (VFC #83081101),

D10. The owner or operator must follow the Quality Assurance Project Plan (QAPjP in Attachment 4 of the Closure Application Approval Letter Response dated December 7, 2020 (VFC #83081101).

D11. The owner or operator must follow the Statistical Evaluation Plan (StEP) in Section 4 of the SAP.

D12. If IDEM requests a revision to an SAP, QAPjP, or StEP, the owner or operator must submit the revised plan(s) for approval. The owner or operator must submit the plan(s) within 60 days after receiving the request. This submittal must include one original paper copy and one PDF electronic file of each plan. The owner or operator must not implement the revised plan(s) before receiving approval.

D13. If the owner or operator makes design changes to the existing System listed in Requirement D3, the owner or operator must submit a revised SAP, and if applicable, a revised QAPjP or StEP for approval. The owner or operator must submit the plans within 60 days after completing all field activities associated with the design changes. This submittal must include one original paper copy and one PDF electronic file of each plan. The owner or operator must not implement the revised plan(s) before receiving approval.

MONITORING PROGRAMS

D14. The owner or operator must sample the facility's System listed in Requirement D3, including future groundwater wells installed for Requirement F8, semiannually during April and October of each year. Each sample must be analyzed following the Detection Monitoring Program (40 CFR 257.94) for the following Appendix III constituents:

a. Total Boron

b. Total Calcium

c. Chloride

d. Fluoride

e. Field pH

f. Sulfate

g. Total Dissolved Solids

The owner or operator may demonstrate an alternative frequency of sampling for the Appendix III constituents following 40 CFR 257.94(d).

When applicable (see Requirement D19), each sample must be analyzed following the Assessment Monitoring Program (40 CFR 257.95) for the following Appendix IV constituents:

h. Total Antimony

i. Total Arsenic

j. Total Barium

k. Total Beryllium

l. Total Boron

m. Total Cadmium

n. Total Chromium

o. Total Cobalt

p. Fluoride

q. Total Lead

r. Total Lithium

s. Total Mercury

t. Total Molybdenum

u. Total Selenium

v. Total Thallium

w. Radium 226 and 228 combined

For specific metallic constituents, if the permittee demonstrates with the approval of IDEM that the results for a filtered (dissolved) metal are no greater than 20% of the relative percent difference of an unfiltered (total recoverable) metal, then the owner or operator may incorporate historic filtered results into the background data set instead of collecting a minimum of eight additional independent samples (40 CFR 257.94(c)) for the unfiltered metal results. The owner or operator may propose an alternative method for incorporating historic results of the specific dissolved metal into the background data set for IDEM review and approval.

Whenever results of total chromium occur at or above its background concentration or maximum contaminant level, whichever is the higher concentration, the owner or operator must speciate and report both trivalent and hexavalent chromium.

D15. The owner or operator must use the results of the static water level measurements from the System listed in Requirement D3 to prepare potentiometric surface maps or groundwater flow maps for each screened interval (shallow, intermediate, and deep) that include the following information:

a. Location and identification of each groundwater monitoring well.

b. Groundwater elevations for each well, and surface water elevation of Lake Michigan. The owner or operator must measure all static water levels on the same day and as close in time as possible before the purging and sampling event.

c. Date and time of static water level measurement for each well.

d. Ground-surface elevation at each well.

e. Facility property boundaries.

f. Identification of the aquifer represented, either by a name or elevation.

g. Solid waste fill boundaries.

h. Facility name and county.

i. Map scale, north arrow, groundwater flow direction arrows, and potentiometric-surface contour intervals.

j. Indications of which wells are considered background, upgradient, or downgradient.

k. Locations and elevations of all site benchmarks.

D16. If a groundwater flow map indicates that the groundwater flow direction, including flow reversals, is other than anticipated in the design of the System listed in Requirement D3, then the owner or operator must notify IDEM of the difference in the groundwater monitoring report submitted for Requirement D23. The notification must include either of the following: information demonstrating that the System complies with 40 CFR 257.91(c); or a proposal to revise the System design for IDEM approval.

The owner or operator must determine if the System currently complies with 40 CFR 257.91(c) before collecting samples for the scheduled semiannual sampling event. If a flow reversal occurs, and with IDEM approval, the owner or operator may postpone the scheduled semiannual sampling event in 30-day extension increments if they determine that the System does not comply with 40 CFR 257.91(c).

If the owner or operator determines a groundwater flow reversal occurred during a scheduled semiannual sampling event, then data from that sampling event must not be utilized in statistical evaluations specified in the StEP or incorporated into background groundwater quality and groundwater protection standard calculations. unless the owner or operator adequately demonstrates to IDEM that the data accurately represents established groundwater quality conditions when a flow reversal did not occur. Additionally, the owner or operator must immediately schedule a replacement sampling event in order to complete the required semiannual evaluation for groundwater releases from the facility. Within

seven days of scheduling the replacement sampling event, the owner or operator must notify IDEM of the schedule.

If design changes to the existing System are necessary, then the owner or operator must make the changes within 30 days after receiving IDEM approval of the revised design or other time frame approved by IDEM.

D17. Background groundwater monitoring well(s) must provide groundwater samples that represent historical conditions unaffected by a CCR unit or facility activities that may contribute Appendix III and Appendix IV constituents listed in Requirement D14 against which background comparisons occur. Additionally, for any background well added to the System listed in Requirement D3, the owner or operator must:

a. Establish background groundwater quality for the Appendix III and Appendix IV constituents listed in Requirement D14.

b. Determine the background groundwater quality by sampling each new well for eight independent sampling events within 12 months after the well's installation, unless the owner or operator can justify to IDEM an extended period of no more than 12 additional months.

If the owner, operator, or IDEM determines that the current System (see Requirement D3) does not have the required background well(s), then within 60 days the owner or operator must submit a plan per Requirement D3 proposing to establish new or additional background wells for the current System for IDEM review and approval. This plan must include well location(s) for obtaining background groundwater quality samples that satisfy the specifications of this requirement.

D18. The owner or operator must implement the StEP identified in Requirement D11 and include the outcome of each statistical determination in a statistical evaluation report (see Requirement D23.d).

D19. The owner or operator must implement a detection monitoring program consistent with 40 CFR 257.94 and the StEP. If the owner or operator determines there is a statistically significant increase (SSI) over background for one or more of the Appendix III constituents listed in Requirement D14 at any of the downgradient groundwater monitoring wells, then the owner or operator must comply with one of the following requirements:

a. Demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality (40 CFR 257.94(e)(2)). Within 45 days of detecting an SSI over background levels, or other time frame approved by IDEM, the owner or operator must submit the written demonstration to IDEM.

If the demonstration is approved, the owner or operator may continue with a detection monitoring program for any unit for which the demonstration

was made;

b. Within 30 days of receiving notice that the demonstration is not acceptable to IDEM, submit an assessment monitoring program plan meeting the requirements of 40 CFR 257.95, which includes the Appendix IV constituents listed in Requirement D14, to IDEM for approval. Within 90 days of determining an SSI, the owner or operator must establish and implement the assessment monitoring program following 40 CFR 257.95, which includes the Appendix IV constituents listed in Requirement D14. The owner or operator must also implement the assessment monitoring program plan after receiving approval from IDEM; or

c. If a demonstration is not pursued, the owner or operator must submit an assessment monitoring program plan specified in Requirement 19.b within 30 days of determining the SSI. Within 90 days of determining an SSI, the owner or operator must establish and implement the assessment monitoring program following 40 CFR 257.95, which includes the Appendix IV constituents listed in Requirement D14. The owner or operator must also implement the assessment monitoring program plan after receiving approval from IDEM.

D20. Within 90 days of finding that any of the Appendix IV constituents listed in Requirement D14 have been detected at a statistically significant level exceeding the groundwater protection standards (40 CFR 257.95(h)), or the groundwater protection standard for total boron of 4 mg/L or background, whichever is greater, the owner or operator must comply with one of the following requirements (40 CFR 257.95(g)(3)):

a. Complete the assessment of corrective measures as required by 40 CFR 257.96, and submit the results of the corrective measures assessment to IDEM for approval. As part of the selection of corrective measures, the owner or operator must include an evaluation of potential groundwater flow reversals on the System. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. After receiving IDEM approval, the owner or operator must implement Requirement D21; or

b. Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant level exceeding the groundwater protection standard resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality consistent with 40 CFR 257.95(g)(3)(ii). Within 90 days of detecting a statistically significant level exceeding the groundwater protection standard, the owner or operator must complete and submit the written demonstration to IDEM for approval.

If the demonstration is approved, then the owner or operator may continue with an assessment monitoring program for any unit for which the demonstration was made.

D21. At least 30 days prior to initiating 40 CFR 257.97, the owner or operator must hold a public meeting to discuss the results of the corrective measures assessment with interested and affected parties. As soon as feasible, the owner or operator must select a remedy that, at a minimum, meets the standards listed in 40 CFR 257.97(b). The owner or operator must submit the first semiannual report describing the progress in selecting and designing the remedy (40 CFR 257.97(a)) to IDEM for review and approval. If additional semiannual progress reports are necessary, the owner or operator must submit the reports within six months of submitting the previous semiannual report. The final report for the selected remedy must, at a minimum, meet the standards listed in 40 CFR 257.97(b), utilizing the provisions specified in 40 CFR 257.97(c) and (d), and must be approved by IDEM.

D22. Within 90 days of receiving IDEM approval of the selected remedy, the owner or operator must initiate remedial activities based on the approved remedy and the standards listed in 40 CFR 257.98. The corrective action program is complete when IDEM approves the owner or operator's demonstration that concentrations of Appendix IV constituents listed in Requirement D14 have not exceeded the groundwater protection standard(s) for a period of three consecutive years at all points of the plume beyond the System following 40 CFR 257.98(c).

REPORTING

D23. The owner or operator must submit a groundwater monitoring report that includes the results obtained from the implementation of Requirements D14 or D17 no later than 60 days after each groundwater monitoring event with the following exceptions:

- The owner or operator must submit radium-specific information no later than 90 days after the groundwater monitoring event.
- If the owner or operator implements a verification resampling program, then the owner or operator must submit verification resampling results no later than 30 days after the last verification event. Verification resampling is defined in the March 2009 *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* (EPA 530/R-09-007).

The owner or operator must submit the report to the IDEM Solid Waste Permits Section in one unbound paper copy and in one electronic PDF file. The report must include the following:

a. One original unbound laboratory-certified report with analytical results, field parameters (see Requirement D24), field sheets, and chain-of-custody forms. The laboratory-certified report must include the following: detection limit for each chemical constituent, date samples collected, date the laboratory received the samples, date the laboratory analyzed the samples, date the laboratory prepared the report, method of analysis the laboratory used for each constituent, sample identification number for each sample, and results of all sample analyses.

b. All information specified in Requirement D15 and a table summarizing the static water level and groundwater elevation for each well.

c. An evaluation of the groundwater quality, recent notifications of any compliance issues related to a problematic well (see Requirement D8), special field observations and procedures, and deviations from the SAP.

d. One original unbound copy of the statistical evaluation report (see Requirement D18).

The owner or operator may mail the PDF copy and electronic data file specified in Requirement D24 on a CD-ROM or DVD. The owner or operator must clearly label the PDF copy and electronic data file with the facility name and a brief description of the file. Alternatively, the owner or operator may email the PDF copy and electronic data file to the IDEM Solid Waste Permits Section at the address listed in Requirement A3 and carbon copy olqdata@idem.IN.gov. The email must include the facility name and a brief description typed in the email's subject heading.

D24. The owner or operator must submit one electronic data file of the analytical results and field parameters from the System (see Requirement D3) formatted as an ASCII, tab-delimited text file. The electronic data file must contain the facility name, SW Program ID number, and the name of the analytical laboratory. Additionally, the file must include the fields listed below for the analytical results and as applicable, the following field parameters: pH, specific conductance, temperature, turbidity, well depth, depth to water, and static water elevation.

a. SamplingDate: Month, day, and year (mm/dd/yyyy). Value should be formatted as a date if possible.

b. SamplePointName: Names of groundwater monitoring wells, piezometers, leachate wells, surface water collection points, etc.

c. LaboratorySample ID: ID assigned to the sample by the laboratory.

d. SampleType: Regular, duplicate(s), trip blank(s), equipment blank(s), field blank(s), verification re-sample(s), and replicate(s).

e. SpeciesName: Chloride, sodium, ammonia, field pH, etc. The order of constituents is not critical. However, it is best to reflect the order that is on the laboratory-data sheets and keep all field data grouped together. Metals should indicate "dissolved" phase or "total" phase. Associated static water levels do not have their own header, but must be entered as "GW WaterLevel" under the header "SpeciesName." The actual elevations must be entered under the header "Concentration."

f. Concentration (results): The entry must be a number. Please do not enter text, such as "NA," "ND," or "<."

g. ConcentrationUnits: mg/l, µg/l, standard units for pH, degrees Celsius (°C) or degrees Fahrenheit (°F) for temperature, and umhos/cm for specific conductance.

h. Detected: Yes or no.

i. DetectionLimit.

j. AnalyticalMethods.

k. EstimatedValue: Indicate "Yes" if the reported concentration is an estimated value. If a value recorded was not estimated, enter "No." If a concentration is estimated, use the "Comment" field to explain why the concentration was estimated.

l. Comment: Analytical laboratory and/or field personnel comments regarding the reported results.

m. SampleMedium: Groundwater, leachate, surface water, etc.

n. ProgramArea: Solid Waste.

Additional guidance on electronic data file submittals is available on IDEM's website at www.in.gov/idem/landquality/2369.htm or by emailing questions to olqdata@idem.IN.gov.

D25. The owner or operator must retain laboratory quality assurance/quality control (QA/QC) documentation from valid analyses of groundwater samples for at least three years.

Upon IDEM request, the owner or operator must submit the laboratory QA/QC for a specified groundwater monitoring data package, in one paper copy and one electronic copy in PDF format, within 60 days after receiving the request. The "*Solid & Hazardous Waste Programs, Analytical Data Deliverable Requirements: Supplemental Guidance*" provides additional information about laboratory QA/QC. The guidance is available on IDEM's website at www.in.gov/idem/landquality/files/sw_resource_data_deliverable_reqs.pdf.

E. FINANCIAL RESPONSIBILITY FOR CLOSURE AND POST-CLOSURE

E1. The owner or operator must update and maintain a financial assurance mechanism as specified in 329 IAC 10-39 in an amount not less than the estimated costs of closure and post-closure in the approved closure and post-closure plan for the MCGS surface impoundment system. The owner or operator must submit signed originals of the financial assurance mechanism and updates used to meet this requirement.

E2. The owner or operator must annually review and submit an update by June 15 addressing the following items as detailed in 329 IAC 10-39-2(c) and (d), and 329 IAC 10-39-3(c):

a. The owner or operator must adjust the closure and post-closure cost estimates for inflation.

b. The owner or operator must revise the cost estimates to account for changes which increase the cost of closure or post-closure.

c. The owner or operator may revise the cost estimates to account for changes which reduce the cost of closure or post-closure. The permittee must provide documentation supporting reduced cost-estimates, for example, letters and maps documenting areas certified as closed.

d. The owner or operator must submit an existing contour map of the approved solid waste land disposal facility that delineates the boundaries of all areas into which waste has been placed, and the boundaries of areas certified as closed. The map must be certified by a professional engineer or a registered land surveyor.

e. The owner or operator must submit documentation showing that the financial assurance mechanism is current to cover the estimated costs of closure and post-closure. The permittee must submit signed originals of the financial assurance and/or updates used to meet this requirement.

F. COMPLIANCE SCHEDULE REQUIREMENTS

F1. At least 60 days prior to the placement of borrow material, the owner or operator must provide the following documentation to IDEM and receive approval before using soil borrow area(s) for the final cover construction:

a. Plans depicting the location(s) of the borrow area(s) and the locations of the borrow area(s) test pits if applicable.

b. Results of the borrow area test pits and/or the soil specifications for the borrow area(s).

c. A soil balance calculation to support the availability of soils for the final cover.

F2. At least 60 days before beginning excavation of CCR material, the owner or operator must submit a project-specific dust control plan to IDEM for review.

F3. At least 60 days before beginning excavation of CCR material, the owner or operator must submit a revise CQA Plan to IDEM for approval. The revised CQA plan must address the project-specific construction procedures that must include, but are not be limited to, the following:

a. A description of the mixing procedures for ash conditioning, stockpiling, loading and the transportation of CCR material and the excavated material;

b. An updated table for Geotechnical Laboratory Testing Requirements that includes the testing methods and the minimum testing frequency for pre-construction and construction of soil cover material. Testing frequencies specified in 329 IAC 10-17-5 are recommended. If the testing frequency for the soil cover material is different from the recommended frequency, the owner or operator must provide a justification to IDEM for approval.

c. The specifications for the flowable fill to be used in the closure of the Boiler Slag Pond as specified in Requirement B12.b.(1).

F4 The owner or operator must establish a financial assurance mechanism as specified in 329 IAC 10-39 in an amount not less than the estimated costs of closure and post-closure in the approved closure and post-closure plan no later than 45 days after receipt of this IDEM approval letter and submit proof of the establishment of the financial assurance to IDEM no later than 60 days after receipt of this approval.

F5. Within 60 days of receiving this IDEM Approval Letter, the owner or operator must submit a well installation plan for groundwater monitoring wells MW-103A, MW-113, MW-114, MW-115, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119. The plan must include a timeline for well installation.

F6. Within 60 days after completing well installations described under Requirement F8, the owner or operator must submit new and updated geologic cross-sections, which incorporate the new groundwater monitoring well additions.

NOTICE OF DECISION

The Indiana Department of Environmental Management (IDEM) issued a permit decision for the Michigan City Generating Station (MCGS) (SW Program ID 46-010) at 101 Wabash Street, Michigan City, Indiana, LaPorte County. This coal combustion residuals (CCR) surface impoundment closure and post-closure plan for the MCGS CCR Pond System, allows the permittee, Northern Indiana Public Service Company, to close the MCGS CCR Pond System using the closure by removal approach. The final decision is available online via IDEM's Virtual File Cabinet (VFC). Please go to: http://vfc.idem.in.gov/. You can search there for approval documents using a variety of criteria. A copy of the permit decision has also been mailed to the following library:

Michigan City Public Library, 100 East 4th Street, Michigan City, 46360

However, due to the COVID-19 pandemic, the library may be closed or have limited access. If you need assistance accessing the permit, please contact the Solid Waste Permits Section at (317) 234-9536 or toll free within Indiana at (800) 451-6027, or send an e-mail to OLQ@idem.IN.gov with the permit information in the subject line.

APPEAL PROCEDURES

If you wish to challenge this decision, IC 13-15-6-1 and IC 4-21.5-3-7 require that you file a Petition for Administrative Review. If you seek to have the effectiveness of the permit stayed during the Administrative Review, you must also file a Petition for Stay. The Petition(s) must be submitted to the Office of Environmental Adjudication (OEA) at the following address within 15 days of the date of newspaper publication of this Notice:

Office of Environmental Adjudication
Indiana Government Center North, Room N103
100 North Senate Avenue
Indianapolis, IN 46204

The Petition(s) must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision, or otherwise entitled to review by law. Identifying the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, or date of this notice will expedite review of the petition. Additionally, IC 13-15-6-2 and 315 IAC 1-3-2 require that your Petition include:

1. the name, address, and telephone number of the person making the request;
2. the interest of the person making the request;
3. identification of any persons represented by the person making the request;
4. the reasons, with particularity, for the request;
5. the issues, with particularity, for the request;
6. identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type granted or denied by the Commissioner's action; and
7. a copy of the pertinent portions of the permit, decision, or other order for which you seek review, at a minimum, the portion of the Commissioner's action that identifies the person to whom the action is directed and the identification number of the action.

Pursuant to IC 4-21.5-3-1(f), any document serving as a petition for review or review and stay must be filed with the OEA. Filing of such a document is complete on the earliest of the following dates:

1. the date on which the petition is delivered to the OEA;
2. the date of the postmark on the envelope containing the petition, if the petition is mailed to the OEA by United States mail; or
3. the date on which the petition is deposited with a private carrier, as shown by a receipt issued by the carrier, if the petition is sent to the OEA by private carrier.

In order to assist permit staff in tracking any appeals of the decision, please provide a copy of your petition to Alysa Raleigh, IDEM, Solid Waste Permits, IGCN 1154, 100 North Senate Ave., Indianapolis, IN 46204-2251.

The OEA will provide you with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders regarding this decision if you submit a written request to the OEA. If you do not provide a written request to the OEA, you will no longer be notified of any proceedings pertaining to this decision.

More information on the review process is available at the website for the Office of Environmental Adjudication at http://www.in.gov/oea.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

What if you are not satisfied with this decision and you want to file an appeal?

Who may file an appeal?
The decision described in the accompanying Notice of Decision may be administratively appealed. Filing an appeal is formally known as filing a "Petition for Administrative Review" to request an "administrative hearing".

If you object to this decision issued by the Indiana Department of Environmental Management (IDEM) and are: 1) the person to whom the decision was directed, 2) a party specified by law as being eligible to appeal, or 3) aggrieved or adversely affected by the decision, you are entitled to file an appeal. (An aggrieved and adversely affected person is one who would be considered by the court to be negatively impacted by the decision. If you file an appeal because you feel that you are aggrieved, it will be up to you to demonstrate in your appeal how you are directly impacted in a negative way by the decision).

The Indiana Office of Environmental Adjudication (OEA) was established by state law – see Indiana Code (IC) 4-21.5-7 – and is a separate state agency independent of IDEM. The jurisdiction of the OEA is limited to the review of environmental pollution concerns or any alleged technical or legal deficiencies associated with the IDEM decision making process. Once your request has been received by OEA, your appeal may be considered by an Environmental Law Judge.

What is required of persons filing an appeal?
Filing an appeal is a legal proceeding, so it is suggested that you consult with an attorney. Your request for an appeal must include your name and address and identify your interest in the decision (or, if you are representing someone else, his or her name and address and their interest in the decision). In addition, please include a photocopy of the accompanying Notice of Decision or list the permit number and name of the applicant, or responsible party, in your letter.

Before a hearing is granted, you must identify the reason for the appeal request and the issues proposed for consideration at the hearing. You also must identify the permit terms and conditions that, in your judgment, would appropriately satisfy the requirements of law with respect to the IDEM decision being appealed. That is, you must suggest an alternative to the language in the permit (or other order, or decision) being appealed, and your suggested changes must be consistent with all applicable laws (See Indiana Code 13-15-6-2) and rules (See Title 315 of the Indiana Administrative Code, or 315 IAC).

The effective date of this agency action is stated on the accompanying Notice of Decision (or other IDEM decision notice). If you file a "Petition for Administrative Review" (appeal), you may wish to specifically request that the action be "stayed" (temporarily halted) because most appeals do not allow for an automatic "stay". If, after an evidentiary hearing, a "stay" is granted, the IDEM-approved action may be halted altogether, or only allowed to continue in part, until a final decision has been made regarding the appeal. However, if the action is not "stayed" the IDEM-approved activity will be allowed to continue during the appeal process.

Where can you file an appeal?
If you wish to file an appeal, you must do so in writing. There are no standard forms to fill out and submit, so you must state your case in a letter (called a petition for administrative review) to the Indiana Office of Environmental Adjudication (OEA). Do not send the original copy of your appeal request to IDEM. Instead, send or deliver your letter to:

The Indiana Office of Environmental Adjudication
100 North Senate Avenue, Room N103
Indianapolis, IN 46204

If you file an appeal, also please send a copy of your appeal letter to the IDEM contact person identified in the Notice of Decision, and to the applicant (person receiving an IDEM permit, or other approval).

Your appeal (petition for administrative review) must be received by the Office of Environmental Adjudication in a timely manner. The due date for filing an appeal may be given, or the method for calculating it explained, on the accompanying Notice of Decision (NOD). Generally appeals must be filed within 18 days of the mailing date of the NOD. To ensure that you meet this filing requirement, your appeal request must be:

1) Delivered in person to OEA, by the close-of-business on the eighteenth day (if the 18th day falls on a day when the Office of Environmental Adjudication (OEA) is closed for the weekend or for a state holiday, then your petition will be accepted on the next business day on which OEA is open), or
2) Given to a private carrier who will deliver it to the OEA on your behalf, (and from whom you must obtain a receipt dated on or before the 18th day), or
3) For those appeal requests sent by U.S. Mail, your letter must be postmarked by no later than midnight of the 18th day, or
4) Faxed to the OEA at (317) 233-9372 before the close-of-business on the 18th day, provided that the original signed "Petition for Administrative Review" is also sent, or delivered, to the OEA in a timely manner.

What are the costs associated with filing an appeal?
The OEA does not charge a fee for filing documents for an administrative review or for the use of its hearing facilities. However, OEA does charge a fifteen cent ($.15) per page fee for copies of any documents you may request. Another cost that could be associated with Your appeal would be for attorney's fees. Although you have the option to act as your own

Attorney, the administrative review and associated hearing are complex legal proceedings; therefore, you should consider whether your interests would be better represented by an experienced attorney.

What can you expect from the Office of Environmental Adjudication (OEA) after you file for an appeal?

The OEA will provide you with notice of any prehearing conference, preliminary hearings, hearings, "stays," or orders disposing of the review of this decision. In addition, you may contact the OEA by phone at (317) 233-0850 with any scheduling questions. However, technical questions should be directed to the IDEM contact person listed on the Notice of Decision.

Do not expect to discuss details of your case with OEA other than in a formal setting such as a prehearing conference, a formal hearing, or a settlement conference. The OEA is not allowed to discuss a case without all side being present. All parties to the proceeding are expected to appear at the initial prehearing conference.

Indiana Department of Environmental Management
Michigan City Generating Station CCR Closure Plan
Comment Period April 22, 2020 through June 22, 2020
Response to Public Comments
Solid Waste ID 46-010

Document	Date	VFC #
Closure Plan	12-20-2018	82976831
Geology Teleconference	01-25-2019	82740322
Supplemental Addendum	02-28-2019	82709758
Request for Additional Information	04-09-2019	82746466
Response to Request for Additional Information	06-05-2019	82791433
Communication Plan	11-19-2019	82866156
Public Comments	12-09-2019	82887314
Additional Information	02-13-2020	82914980
Geology Additional Information	04-29-2020	82964997
Public Comments	06-22-2020	82993769
NIPSCO Press Release	06-25-2020	82997509
Completeness Letter	09-25-2020	83048724
Library Receipt	10-01-2020	83056923
Public Comments	11-06-2020	83109598
Additional Information	12-07-2020	83081101

Public Comments and IDEM Responses

Comment 1: For constituent to be removed from the unit, as required, excavation of the unit will have to continue until it reaches soil or rock untainted by coal ash. Given the 14 feet of mixed CCR fill or more under the Michigan City ash ponds, the excavation will have to extend to the bottom of the fill in order to reach untainted soil or rock. The Closure Application does not address how excavation is going to proceed once it gets into the CCR fill below the ash ponds.

Response: We concur that the fill materials are present underneath the surface impoundments near Primary Settling Pond No.2 and the Boiler Slag Pond. These fill materials are the historical fill resulting from the process of the creation of "made land". A significant portion of the facility was constructed on this "made land". As stated in the closure plan, the fill material is primarily natural sand mixed with minor percentages of fly ash and boiler slag. IDEM's regulatory authority under 329 IAC 10-9-1(c) only extends to waste from CCR surface impoundments. The closure plan proposes to excavate CCR material to the limits of impoundment, the blast furnace slag on the bottom of the ponds, and an additional foot of material beneath the slag layer in an effort to remove all the regulated CCR materials. The fill material under the ash ponds is a historical fill. The fill is not part of the CCR ash pond closure. The removal of the historical fill is outside of the scope of the CCR Rule.

Comment 2: The Closure Application states that the surface impoundments will be closed by removal of the CCR, the impoundment liners (which are blast furnace slag), and an additional foot of underlying soil. Following excavation of those materials, the plan says that removal of CCR will be confirmed by visual inspection. However, since CCR fill extends to 14 feet or more beneath the impoundments, the excavation of one additional foot below the impoundment liner will be excavation of fill material containing CCR. Visual observation after removal of that additional foot will reveal more CCR and will not be able to confirm "removal of physical CCR materials". The visual observations will be that CCR is still present. The Closure Plan does not address this problem.

Response: See response to Comment 1.

For the verification of regulated CCR material excavation, the facility is required to provide surveys and photographs for the following surfaces, as described in the document dated February 13, 2020 (IDEM Virtual File Cabinet (VFC) document #82914980, Appendix A, pp. 73-74 of 100):

- The bottom of CCR material excavation (i.e., CCR material that currently remains in the impoundment);
- The bottom of one-foot of blast furnace slag layer excavation; and
- The bottom of one-foot of additional material excavation.

Comment 3: Another complication the CCR fill brings to the impoundment closure at Michigan City Generating Station MCGS is the potential for continued contamination of the groundwater after closure. The CCR present in the fill at MCGS is as likely to leach contaminants into the groundwater as the CCR in the impoundments. Given that the MCGS site is 123 acres and the cross sections show fill occupying more than half the site to a depth of at least 10 feet, then a very conservative estimate is that there is at least 950,000 cubic yards of fill. If CCR makes up 20% or more of the fill (190,000 cubic yards), then the amount of CCR in the fill exceeds the amount in the impoundments. Therefore, the CCR fill is likely to have a significant contribution to groundwater contamination at MCGS.

Response: If CCR contributed to groundwater contamination, then the contribution will be detected, assessed, and corrective measures implemented through the provisions in the CCR rule and the approved closure plan. It should also be noted that NIPSCO is proposing to remove the source area (i.e., CCR waste in the impoundments), which will assist in addressing any groundwater impacts from the impoundments.

Comment 4: The Closure Application vaguely defers action on groundwater contamination by CCR fill until the site reaches the corrective action stage of the CCR rule. At a minimum, the closure plans should include an investigation of the extent of groundwater contamination by the fill and the risk that the contamination will continue after excavation of the ash ponds.

Response: If CCR contributed to groundwater contamination, then the contribution will be detected, assessed, and corrective measures implemented through the provisions in the CCR rule and the approved closure plan.

Comment 5: Leaving coal ash in the floodplain creates a risk of an ash spill into Lake Michigan and Trail Creek. During a flood, the sheet pile and rip rap that currently protect the lake and creek could fail causing a coal ash spill.

Response: Even though small portions of the MCGS Surface Impoundment System are located within the fringe of the flooding limits, according to the closure plan, the regulated CCR materials currently remaining in the ponds will be removed. After the removal of the regulated CCR material currently remaining in the ponds, the area will be backfilled with clean (uncontaminated) soil and covered with an additional 18 inches of compacted soil with a permeability no greater than 1×10^{-5} cm/sec and six inches of topsoil in compliance with 40 CFR 257, Subpart D (CCR rule). In addition, the facility is required to maintain all components of the final cover system during the 30-year post-closure period, and subsequent to the post-closure certification at the end of the post-closure period.

In addition, as noted in the comment, the MCGS and the CCR ponds are protected by the sheet pile barrier along the waterside property boundaries to the east (Trail Creek) and north (Lake Michigan). The facility is responsible for maintaining the sheet pile barrier in good condition after final closure is completed and during the post-closure care period, as specified in Requirement C1.d. The facility is responsible for correcting any damage to the cover system and the sheet pile barrier. With the sheet pile, upon removal of all regulated CCR materials currently remaining in the CCR ponds and the area covered with soil cover, any spill of coal ash into the waters will be unlikely.

Comment 6: If the coal ash fill is left in place at MCGS, there will need to be future maintenance to deal with water damage to the bulkheads and shoreline protection at MCGS in order to try to prevent a coal ash spill. The sheet pile in the bulkhead and shoreline protection will eventually need replacement given the ongoing corrosion documented in the 2018 inspection. Maintenance will still be needed beyond the 30-year post-closure period.

Response: See response to Comment 5.

Comment 7: In the Closure Application, NIPSCO listed wells GAMW-05, GAMW-12, and GAMW-18 as "background". This is not in keeping with the requirements under the CCR rule. The rule requires that background wells accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit. The Indiana requirements for impoundment closure also emphasize the need to measure background in groundwater that is not impacted by the waste material. Concentrations of constituents in the designated background wells at MCGS (GAMW-05, GAMW-12, and GAMW-18) confirm that they are impacted by CCR.

Response: In a conference call with IDEM OLQ Geology Section Staff and NIPSCO personnel on January 24, 2019 and meeting summary email on January 25, 2019 (VFC #82740322), we asked for background monitoring locations that are

capable of providing groundwater quality samples that represent historical conditions unaffected by CCR unit or facility activities that may contribute constituents of concern against which background comparisons occur. NIPSCO responded with a Supplemental Addendum to the Closure Plan on February 28, 2019 (VFC #82709758), proposing four new background monitoring wells (existing well MW-110 and three yet to be installed wells MW-113, MW-114, and MW-115). We determined that the proposed background wells met the requirements of 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D, in a Geology letter dated September 9, 2019 (VFC #82852674). We added applicable requirements to the approval letter, as described in Requirement D17 of the closure plan approval.

Comment 8: The Groundwater Monitoring and Corrective Action Reports for 2017 and 2018 list multiple results removed from the data set for wells GAMW-05, GAMW-12, and GAMW-18 for the following reason: inconsistent with concentrations detected in other background monitoring wells. This is an unjustified manipulation of the data. The data removed for this reason should be replaced and revised groundwater reports issued.

Response: See response to Comment 7.

Wells GAMW-05, GAMW-12, and GAMW-18 are no longer designated background wells.

Comment 9: Installing the new background wells after completion of closure is inadequate. We agree with IDEM that the original background wells were inappropriate, but NIPSCO's proposed timing for new wells violates both state and federal law. New background wells are needed in order to comply with the requirements of the federal CCR Rule, as well as Indiana regulations.

Response: We agree. IDEM has included a compliance schedule item stating that within 60 days of the Closure Plan approval, NIPSCO must submit a well installation plan that includes a timeline to install background wells MW-113, MW-114, and MW-115 and downgradient wells MW-103A, MW-105A, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119.

Comment 10: As with the original background wells, the proposed locations for the new background wells are also problematic because most are in areas of heavy CCR fill. Groundwater at these locations is likely affected by CCR, so they will not fulfill IDEM's requirement that background wells be unaffected by a CCR unit or facility activities.

Response: We determined that the new background well locations met the requirements of 329 IAC 10-9-1(c) , which incorporates portions of 40 CFR 257, Subpart D, in a Geology memo dated September 13, 2019 (VFC #82852674). The boring log for MW-110 (see Closure Application dated December 20, 2018, VFC #82976831), depicts fine sand, gravel, fine coal fragments, fine CCR, and fill in the upper 10 feet of the boring. The screened interval (20-30 feet) consists of fine sand. Wells MW-113 through MW-115 will be located upgradient and on the perimeter of the facility (see Supplemental Addendum dated February 28, 2019, VFC

#82709758). Background groundwater monitoring well(s) must provide groundwater samples that represent historical conditions unaffected by a CCR unit or facility activities that may contribute Appendix III and Appendix IV constituents listed in Requirement D14 against which background comparisons occur.

Also see response to Comment 7.

Comment 11: There are monitoring wells at Michigan City that appear to be more appropriate for use as background. The RCRA Facility Investigation Report filed in December 2018 shows wells MW-108 and MW-109, which are located away from CCR disposal units, and the Closure Application shows they are in areas of only minimal CCR fill. We suggest that MW-108, MW-109, and MW-36 be considered for background wells.

Response: See response to Comment 10.

Comment 12: Once appropriate background wells, unaffected by coal ash, have been established at MCGS, the results from those wells should be used to calculate new Groundwater Protection Standards (GWPS) and the Statistically Significant Levels (SSLs) in accordance with 40 C.F.R.§§ 257.95(h) and 257.93(h). Using GWPS that are based on groundwater affected by coal ash will reduce detection of groundwater contamination. Only by using new GWPS based on appropriate background groundwater will the actual groundwater contamination be detected.

Response: We agree. Once the new background wells are installed, the facility will have appropriate locations for performing statistical comparisons and to calculate representative GWPS for use if/when they trigger into assessment monitoring.

Comment 13: Since one SSL has been reported and others are likely when appropriate background wells are used, plans to delineate the extent of the groundwater plume at MCGS should be forthcoming.

Response: We agree. Once IDEM provides the approval letter with groundwater monitoring requirements, NIPSCO will begin detection monitoring which can trigger into assessment monitoring. If the facility triggers into assessment monitoring, then they will need to calculate GWPS. If a GWPS is exceeded, then the facility will need to determine the nature and extent of the exceedance(s) followed by implementation of corrective measures under a corrective action program.

Comment 14: There is evidence that the contaminated groundwater at the Michigan City Generating Station is leaking into Lake Michigan and Trail Creek. The evidence includes: (a) the groundwater flow direction; (b) the groundwater flow velocity; (c) the history of the sheet pile construction; and (d) the most recent sheet pile inspection. The Closure Application currently lays out no plans for stopping the leak. Coal ash closure at the Michigan City Generating Station should fully assess and then eliminate leaks of contaminated groundwater into Lake Michigan and Trail Creek, and it should eliminate the potential of any future leakage.

Response: We agree that CCR contamination may potentially be migrating toward Lake Michigan and Trail Creek. NIPSCO will need to address the nature and extent of any exceedance(s) above the GWPS following 40 CFR 257, Subpart D, and the approval letter.

If the facility triggers into assessment monitoring and exceeds a GWPS, then the facility will need to determine the nature and extent of any exceedance(s) followed by implementation of corrective measures.

Comment 15: Not only is there documented leakage of contaminated groundwater into Trail Creek, but there is also evidence that the coal ash fill itself is being released into the creek. The Waterfront Facilities Investigations and Assessments makes it clear that the fill behind the sheet-pile bulkhead is being lost into the creek. Since Michigan City Generating Station has been releasing coal ash fill and contaminated groundwater into Trail Creek, likely for several decades, we are requesting an assessment of off-site release of waste materials. The water and sediments of Trail Creek should be tested and the release of ash and contaminated groundwater thoroughly investigated. Since people in the area consume fish from Trail Creek, we are also requesting an evaluation of fish tissue in Trail Creek, both existing data from Indiana fish tissue monitoring and testing for other bio-accumulative contaminants from coal ash in fish tissue.

Response: We agree that impacted groundwater may be migrating toward Lake Michigan and Trail Creek. The facility is required to address the nature and extent of any impacts above the GWPS following 40 CFR 257, Subpart D, and the approval letter.

If the facility triggers into assessment monitoring and exceeds a GWPS, then the facility will need to determine the nature and extent of the release followed by implementation of corrective measures.

If the water and sediments of Trail Creek are contaminated with CCR, then the facility will take into account ecological impacts as part of their corrective measures assessment.

Additionally, the facility must comply with NPDES permit IN0000116. Any discharge of contaminants, ash, sediments or coal into waters of the US is regulated under the Water Pollution Control Act and 327 IAC 5.

The Indiana State Department of Health (ISDH) maintains a database for fish consumption advisories with data provided by IDEM and the Indiana Department of Natural Resources (DNR). It can be accessed at https://secure.in.gov/isdh/23650.htm.

Comment 16: Over the long history of burning coal at the Michigan City Generating Station, there have been releases of coal ash that have settled on the surrounding community. Therefore, we are requesting an investigation of whether soil in Michigan City has been contaminated by coal ash, particularly in the nearby prison and parks. We also request that the investigation assess whether ash was used as fill in Michigan City. Such an

investigation would be in keeping with Indiana coal ash regulation 327 IAC 10-9-1.

Response: The scope of this closure plan is specific to the CCR rule and the closure of the following surface impoundments: Primary Settling Pond #1, Secondary Settling Pond #1, Settling Pond #2, Secondary Settling Pond #2, and the Boiler Slag Pond.

Comment 17: The Conceptual Closure Plan for the Boiler Slag Pond posted on NIPSCO's CCR website indicates that the berms surrounding the pond will be pushed into the ponds after the coal ash is excavated. The more complete Closure Application submitted to IDEM does not include grading the berms inward. The berms should neither be graded into the excavated ponds nor left standing since they contain CCR. Since they contain CCR, the berms should be removed from the site and taken to the landfill with the rest of the coal ash.

Response: The ponds are incised ponds (below grade) and berms referenced here are the side slopes below grade ponds. As stated in the December 20, 2018 closure plan (VFC #82976831, p. 26 of 951), the berm between the Secondary Settling Pond No. 1 and the Primary Settling Pond No. 2, and the berm between the Secondary Settling Pond No. 2 and the Boiler Slag Pond, will remain. As stated in response to Comment 1, a significant portion of the facility was constructed on the "made land" that is primarily natural sand mixed with minor percentages of fly ash and boiler slag. The field borehole logs show these fill materials are consistently present in the lands outside of the limits of impoundments including the lands that separate the ash ponds. The proposed closure plan will remove all the regulated CCR materials currently remaining in the ponds. IDEM's regulatory authority under 329 IAC 10-9-1(c) only extends to waste from inside CCR surface impoundments. The fill is not part of the CCR ash pond closure. The removal of the historical fill is outside of this closure approval.

Comment 18: In its request for additional information (RAI) in April 2019, IDEM noted the absence of the dust control plan and required that it be submitted before excavation begins. NIPSCO's response to the RAI reiterated that they would place this responsibility on the contractor and said they would share the control plan with IDEM. We appreciate NIPSCO's stated commitment to dust control during closure. We hope to see a plan detailing specific dust control measures soon. These essential safety measures must not be left solely in the hands of a contractor, but must be scrutinized by IDEM and the public to guarantee their adequacy to protect public health.

Response: We concur with the comment. The site-specific dust control plan is part of the compliance schedule Requirement F2 of the closure plan approval. IDEM will post the plan to the Virtual File Cabinet (VFC) once it is received.

Comment 19: We ask that IDEM and NIPSCO postpone the excavation and transportation of NIPSCO's coal ash from the Michigan City Generating Station until after the pandemic has resolved. The delay should remain effective until the U.S. Centers for Disease Control and Prevention (CDC) has determined that the dangers posed by the coronavirus to human and animal populations are no

longer present for the State of Indiana or the Indiana State Department of Health has reported no new cases of COVID-19 in both La Porte and Jasper Counties for at least 14 consecutive days.

Response: NIPSCO intends to delay closure activities until Spring 2021, as stated in a press release dated June 25, 2020 (VFC #82997509).

Comment 20: I write to you today in order to request an extension for one month on the current public comment period concerning the NIPSCO Michigan City permit application due to the Covid-19 outbreak.

Response: NIPSCO held their public meeting to discuss the Closure Plan on April 22, 2020. The original deadline for submitting public comments was May 22, 2020. However, due to the COVID-19 pandemic, a one-month extension was granted. The final deadline to submit a public comment was June 22, 2020. Additionally, a second public meeting was held by NIPSCO on October 6, 2020 with an additional 30 day comment period.

Comment 21: As NIPSCO prepares to close its Michigan City Generating Station, a coalition of residents and environmental groups are calling for the establishment of an independent Community Review Committee to assess the cleanup and closure process, and to better connect members of the community to the planning and implementation of the closure.

Response: The public involvement provisions in the CCR rule require publicly accessible internet posting. IDEM has maintained a policy on public notice, public meeting, and public comment periods and notice of decision for the closure of coal ash ponds. Community monitoring is beyond the scope of this approval. The approval requires notification of beginning closure activities and closure certification reports that would be available in IDEM's VFC. This information is also available on NIPSCO's public website https://www.nipsco.com/about-us/ccr-rule-compliance-data-information.

Comment 22: The draft "Michigan City Generating Station Contractor Fugitive Dust Management Outline" lacks any requirement for continuous air monitoring. The absence of continuous air monitoring in both the closure plan and the contractor outline is a fatal flaw that must be corrected. The plan should include the following elements: scope, air monitoring strategy, pollutants, monitoring locations, sampling methods and instruments, sampling schedule, operational contingencies, placarding, worker training and protection, action levels, transparency, quality assurance, notifications, and reporting obligations as well as defining the form of standard reports, etc.

Response: See response to Comment 18. The CCR Rule does not require continuous air monitoring.

Comment 23: According to NIPSCO's "Sampling and Analysis Plan, Ash and Amendment Assessment, Michigan Generating Station" dated January 2020, NIPSCO intends to characterize stockpile materials and fly ash for the purpose of

determining their "acceptability as waste streams to be disposed in the RMSGS landfill" by "evaluating the leaching potential of the various materials." There are three significant deficiencies in this plan that must be corrected. First, the plan contains no assessment of the chemical composition of the CCR. An analysis of the levels of toxic metals in the coal ash is essential, because there is potential for exposure to the ash at the removal site, along the transport route and at the final disposal site. Because the hazardous components of CCR pose significant health risks, it is necessary that NIPSCO determine the levels of such chemicals in the coal ash. Second, there are significant deficiencies in the leaching tests that NIPSCO plans to conduct on the coal ash. Since 2009, the U.S. EPA has concluded that the leach test that NIPSCO proposes to use, the Toxicity Characteristic Leaching Procedure (TCLP), does not provide an accurate prediction of the level of chemicals that will leach from disposed CCR and "may underestimate the actual leach rates of toxic constituents from CCR under different field conditions." We request that NIPSCO update its sampling method to reflect the best available science and EPA recommendations. Third, NIPSCO's Sampling and Analysis plan does not require leach testing for several of the most common coal ash contaminants. NIPSCO should conduct LEAF tests for these CCR contaminants, as well as the other parameters in Appendix IV of the CCR rule.

Response: The sampling and analysis plan for the stockpile materials and fly ash were for disposal into a permitted Type I Restricted Waste Site (RWS) landfill. Per 329 IAC 10-9-4, CCR (e.g. fly ash) does not need to be tested for disposal into a Type I RWS. Since the stockpile materials are a mixed waste, we requested that those be sampled for TCLP metals consistent with other waste going into a Type I RWS. An approval for disposing of the stockpile material at Schahfer Generating Station (SW Program ID 37-01), was issued May 14, 2020 (VFC #83041068). More extensive testing including parameters in Appendix IV of the CCR rule would be needed for materials not going to a RWS Type I landfill. The NIPSCO Type I RWS has groundwater monitoring sampled for a larger set of constituents per section E of their permit (VFC #82975469) and a soil and geomembrane bottom liner with a leachate collection system.

Comment 24: Given the hazards associated with excavation and transportation of coal ash, we request that IDEM plan for periodic inspections of both Michigan City Generating Station and the Schahfer landfill in Jasper County during the closure process.

Response: The facility is responsible for complying with fugitive dust control requirements of the closure plan approval and 40 CFR 257.80. IDEM conducts periodic inspections of the facility and will monitor for fugitive dust during those visits.

Comment 25: Multiple decades worth of coal ash are stored on the MCGS site as fill. The coal ash fill will continue to contaminate the groundwater after removal of the coal ash ponds, particularly since a significant portion of it is below the water table. A permanent solution is needed for containment of the coal ash fill at MCGS.

Response: See responses to Comments 1 and 3.

Comment 26: I would like the NIPSCO coal ash pond closure to take into consideration public input, especially from the communities that live closest to it. I believe any resident would like to have a transparent and collaborative process that both ensures community members and NIPSCO can properly close the coal ash pond, remediate and monitor the area, and responsibly treat and isolate any pollutants that have left the coal ash pond. Let us not forget that community members are NIPSCO customers, and community members who have had to live with the coal ash pond have had to deal with the disproportionate negative effects that other communities do not. Please ensure that the voice of the community is heard and that there is an equitable process that allows community members and NIPSCO to close the coal ash pond in congruence. There should be an extensive public comment period with measures taken to ensure public participation is representative of the community near the coal ash pond. Public comment period should also take safeguards to stem the spread of COVID-19. All decisions that are being made should include the voice of community members and not solely NIPSCO employees, supporters, and/or benefactors.

Response: See response to Comments 20 and 21.

Comment 27: Is there a difference between Coal Ash and Fly Ash?

Response: Fly ash is a type of coal ash. Fly ash is a fine, powdery material made from the burning of ground coal in a boiler. Coal ash, or coal combustion residuals (CCR), also includes bottom ash, boiler slag and flue gas desulfurization material. Together, these residuals from the burning of coal are referred to as coal ash.

Comment 28: Is NIPSCO absolved from any future responsibility / litigation within the borders of the Town of Pines with regards to Fly Ash?

Response: The Town of Pines is located approximately 4 miles west of Michigan City and was not the subject of the NIPSCO closure plan. Town of Pines is an EPA Superfund Site. Additional information on Town of Pines can be found at https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0508071. You may also contact IDEM's Office of Land Quality – Remediation Branch, Doug Petroff at 317-234-7179 or DPetroff@idem.in.gov for additional information on Town of Pines. IDEM, Land Quality Permits Branch cannot speak to any litigation or future responsibility as it pertains to the Town of Pines.

Comment 29: Are all 5 ponds under review within the footprint of the lakefront generating station property?

Response: The ponds that are being addressed in the CCR closure plan are Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, Secondary Settling Pond No.2, and the Boiler Slag Pond. These ponds are located at the Michigan City Generating Station and are being closed by removal.

Comment 30: In the Town of Pines many of our roads are paved over a base of NIPSCO Fly Ash. The town has numerous ponds and wetland areas. Assuming the rain runoff from the roads goes into these wetland areas, is this standing water being tested periodically? If so by whom? Is it reasonable that the residents within a distance of say 150 yards of problem areas be notified of any high toxins /carcinogenic levels near their homes? Can a Pines resident ask for testing at NIPSCO's expense?

Response: See response to Comment 28.

Comment 31: Is there any data on increased cancer rates either near the NIPSCO gen station or The Town of Pines?

Response: See response to Comment 28.

Comment 32: Are there mandatory real estate laws on the books that would require a future home sale in the Town of Pines be labeled a potential contaminated property?

Response: See response to Comment 28.

Comment 33: When NIPSCO demolishes the gen station will the ground be "virgin" soil again? Will the plot be sold by NIPSCO to developers or is there a deal in place that the city of Michigan City will take it over?

Response: The MCGS CCR closure plan does not involve NIPSCO's plans for the property where the Station is currently located after the closure of the generating station.

Comment 34: Is NIPSCO paying for all the plot remediation or is the government helping out?

Response: IDEM is not providing funding for the pond closure activities at MCGS.

Comment 35: What is the service life span of a steel brake-wall piling?

Response: Service life span for steel brake-wall piling can be 50 years or more, depending on the corrosion of steel and other factors such as the type of water the steel is in contact with, considering such things as high salt content, pH or chlorides. Contemporary pilings likely have anti-corrosion properties, and can last longer, but 40 to 50 years is a safe estimate.

Comment 36: We were pleased to hear about the beginning phase of the closure of the Michigan City NIPSCO facility. We are hoping you will create opportunities for community monitoring and communication as safety of the surrounding population and the fragile dune environment is critical.

Response: See response to Comment 21.

Comment 37: I have seen some comments to the effect that the work on removing the material from the ash pits should be delayed until after the current pandemic has ended. I understand why some might suggest this, but given

that we really have no idea when this pandemic will end, I would not recommend such a delay. The concerns expressed by these groups seem to be that particulate matter will be put in the atmosphere that could exacerbate illnesses such as Covid-19. This suggestion seems to me correct, but the solution is not to wait until the pandemic passes and then be satisfied that an increase in particulates won't be unsafe, but rather to minimize the local increase in particulates as much as possible from the beginning. Even after the pandemic passes, there may be people in the area with other diseases such as emphysema, asthma, and other respiratory ailments who will even then be at risk from increases in particulates in the local area. Creating a local advisory committee so that problems that may arise during the process of removing the coal ash can easily be brought forward does seem to me a worthwhile strategy. Monitoring of the pollution in local air and water should be an essential component of the plan as well.

Response: Given many unknown factors regarding the Covid-19 pandemic, the project may be delayed. However, if circumstances allow, the closure activities will proceed as scheduled. The closure plan proposes a project-specific Dust Control Plan that will address dust and particulate matter management and monitoring during closure activities.

Also see response to Comments 19 and 21.

Comment 38: This coal ash is concerning myself and individuals that live around the Schafer Generating Plant in Wheatfield. That's approximately 60 miles away from Michigan City. Really! We need to stop this from happening. This coal ash is toxic and causes a lot of health issues, etc. Our lives matter here around the Wheatfield area. We are no exception to allowing this to come to our area. We are human, too. We have the Kankakee River that the engineering and state are trying to restore. How can toxic coal ash benefit us or the Kankakee River? It will only contaminate us. This is an unethical way of doing business jeopardizing our ground and lives here in the Wheatfield area.

Response: The closure plan proposes to dispose the excavated CCR material in the permitted Type I RWS landfill at RM Schahfer Generating Station (RMSGS) (SW Program ID 37-01), also owned and operated by NIPSCO. This landfill is constructed and operated in accordance with 329 IAC 10, which is Indiana's solid waste land disposal rule, and includes bottom liner, leachate collection system, and groundwater monitoring. This facility is permitted to accept such waste.

Comment 39: Transport the coal ash in appropriately contained trucks and follow procedures to minimize dust along the transport route and at the landfill.

Response: Regarding the ash transportation, the closure plan proposes to place the excavated material in roll-off boxes or end dump trucks equipped with bed liners, leak-proof beds, sealed and locked tailgates, dog locks, etc. and capable of being covered for transportation to RMSGS landfill for disposal. Please see the Construction Assurance Plan submitted with the document dated February 13, 2020 (VFC #82914980, pp. 25-74 of 100).

All loads on public roads are required to comply with local ordinances and Indiana Department of Transportation (INDOT) standards.

Comment 40: Monitor the waters of Trail Creek and Lake Michigan to ensure contaminants do not migrate there.

Response: Construction of the cover system for the ash ponds should eliminate potential for surface migration of contaminants from these ponds. Upon closure of these ash ponds, the facility is required to maintain that cover and perform groundwater monitoring for at least 30 years.

Comment 41: Publicize a complaint line on an easily accessible public internet site.

Response: The federal CCR regulation requires the facility to log any complaints received. The information can be found in NIPSCO's website at https://www.nipsco.com/about-us/ccr-rule-compliance-data-information.

The public can also report any concerns to IDEM's Complaint Coordinator. More information can be found here: https://www.in.gov/idem/5274.htm

Comment 42: We who live within a three-mile radius of the site have special concern for the health and safety of the workers, many of whom will be neighbors, relatives, and friends. We will need public review of all NIPSCO's "Request for Quotes" (RFQs) related to this project. RFQs should meet at least these few criteria to provide a safe working environment. The project must install one or more "change trailers," or equivalent facilities. Such facilities provide a gateway for workers arriving to and departing from the work site. On arrival, workers put on proper PPE (e.g., boots, TyVek suits, respirators); on departure, they return the gear. This measure will reduce incidental transmission of toxic waste into our community and into our homes. The loads of coal ash must be sprayed with water just after loading, and within a short distance, before securing the tarps. Trucks that leave the loading site must exit through one or more wash stations. The truck tires and undercarriages must be washed before leaving the site. Wastewater must be captured and treated as toxic.

This comment elaborates on one I submitted earlier this afternoon. Below is a quick compilation of some of the health impacts on workers and communities from improper coal ash cleanup. These impacts stem directly from a debacle of conflicts of interest, failure of oversight and lack of due diligence. In light of the information below, it occurs to me that our community could be better served if an independent agency conducted the on-site monitoring of toxic waste management. Of course, NIPSCO would foot the bill, but the agency might be hired by Michigan City, and operate under City oversight. I checked more carefully and found that I live about 1.5 miles from the cleanup site. Some friends and neighbors will be eager for jobs in this project. I urge IDEM to protect my community from the harms mentioned below.

Response: Worker safety is governed by Occupational Safety and Health Administration (OSHA) regulations. NIPSCO must comply with all local, state and federal requirements in addition to IDEM regulations and closure approval requirements.

Comment 43: The project should provide for regular testing of the Kankakee River near the coal ash dump site. Tests should include water and fish, upstream and downstream from the site.

Response: Groundwater monitoring is addressed under the RMSGS Type I RWS landfill permit. Currently, groundwater monitoring results do not indicate an impact to the Kankakee River.

The Indiana State Department of Health (ISDH) maintains a database for fish consumption advisories with data provided by IDEM and the Indiana Department of Natural Resources (DNR). It can be accessed at https://secure.in.gov/isdh/23650.htm.

Comment 44: Why is it unsafe to leave the coal ash in the Michigan City plant? Why would it then be safe to dump the coal ash into the Wheatfield plant? Any contamination that would make it unsafe to leave the coal ash in Michigan City would be the same at the Wheatfield plant, if not greater at the Wheatfield plant due to the water table and use of wells for drinking water.

Response: In order to minimize releases from the impoundments, NIPSCO opted to remove the CCR material and transport the material to the RMSGS Type I RWS landfill for final disposal. Schahfer RWS I landfill is a permitted landfill approved to accept coal combustion wastes generated by NIPSCO facilities. Please see Requirement D2 of the current permit renewal dated May 27, 2020 (VFC #82975469). In 2017, NIPSCO submitted a minor modification to revise the base liner design and final cover design for Phase VII and VIII of the landfill to comply with the Federal CCR regulations for the disposal of coal combustion wastes. Please see IDEM approval dated May 23, 2018 (VFC #82552898).

Also see response to Comment 38.

Comment 45: I do not think 30 days for a forum is a suitable time frame due to the current events in our country and the world. It seems to me like this is being "rushed" through while people are focused on the safety of their families. Is this something that we can also address?

Response: NIPSCO held their public meeting to discuss the Closure Plan on April 22, 2020. The original deadline for submitting public comments was May 22, 2020. However, due to the COVID-19 pandemic, a one-month extension was granted. The final deadline to submit a public comment was June 22, 2020. Additionally, a second public meeting was held by NIPSCO on October 6, 2020 with an additional 30-day comment period.

Comment 46: Request transparency on the plan to bring the coal ash residue to the Wheatfield location. I am not against closing the Michigan City plant, I am however against dumping the coal ash into the Wheatfield water supply.

More of a concern is how there have been minimal meetings or announcements/public forum with the residents of Wheatfield.

Response: The coal ash removed from the surface impoundments at MCGS will be transported to the Schahfer RWS Type I landfill for final disposal. Restricted waste sites are designed and operated to accommodate specific types of waste. This RWS I landfill is a permitted facility approved to accept coal combustion wastes generated by NIPSCO. Please see Requirement D2 of the current permit renewal dated May 27, 2020 (VFC #82975469). In 2017, NIPSCO submitted a minor modification to revise the base liner design and final cover design for Phase VII and VIII of the landfill to comply with the Federal CCR regulations for the disposal of coal combustion wastes. Please see IDEM approval dated May 23, 2018 (VFC #82552898).

Also see response to Comments 21 and 45.

Comment 47: I am wondering, are we going to hold a public forum in Wheatfield to let the residents know the plans to dump the coal ash in our community.

Response: According to the communication plan provided by NIPSCO, Jasper County officials were presented with information on the closure plan for Michigan City on March 31, 2020, prior to the first public meeting on April 22, 2020. A public notice was printed in the Rensselaer Republican local paper on October 3, 2020, announcing the second public meeting which took place on October 7, 2020.

Also see response to Comments 21 and 45.

Comment 48: My name is Mike Atkinson and I am the CEO of Advanced Mobile Filtration Services LLC (AMFS). It was brought to my attention that there is remediation required for the ash pits at the NIPSCO Power Plant in Michigan City, Indiana that is being closed. Based on the articles that I have read, one of the main problems and concerns for the residents and the IDEM is dust that will be created and emitted into the atmosphere once the pits are dried and the fine powdery residue is then removed by trucks and transported to the designated landfill for disposal. I know NIPSCO would be the potential client here, however, if not for this Michigan City remediation project, I would like to make you and the IDEM aware of AMFS and how we can handle projects such as this in the future.

Response: We appreciate information on AMFS, however IDEM does not dictate which technology or remediation system NIPSCO must choose.

Comment 49: Please, can you tell me what you will be doing with the coal ash? Where will the coal ash go and what will be done with it.

Response: See response to Comments 38 and 46.

Comment 50: I'm a homeowner in Beverly Shores, IN, and I'm alarmed by the massive transport of NIPSCO coal ash that is routed down Hwy. 12. The Hoosier Environmental Council estimates there will be 6,000-7,000 truckloads of TOXIC coal ash in the process. Not only will that damage the road, but what

assurances do we have that these contaminated loads are secured with a seal that is impermeable to wind blow off, rather than a flimsy tarp?

Response: See response to Comment 39.

Comment 51: The Town Council of Beverly Shores urges IDEM to approve a route for trucking that prohibits transport along U.S. Highway 12 (Dunes Highway) west of Indiana Highway 520 in Town of Pines. Such a prohibition would keep trucks out of the heart of the Indiana Dunes National Park and away from a narrow two-lane roadway lacking adequate shoulders. IDEM should instead require that trucks transport coal ash from Michigan City westward on U.S. Highway 12 only as far as the Town of Pines. There, trucks should turn south on Indiana Highway 520 to U.S. Highway 20 and westward on 20 to Indiana Highway 49. Indiana Highway 520 and U.S. Highway 20 are both 4-lane roadways, more suitably designed for trucking of the tremendous scale planned for these closure activities.

Response: See response to Comment 39.

Comment 52: IDEM should require that trucks carrying coal ash be covered securely to eliminate fugitive discharge of ash from trucks onto the roadway to prevent adversely affecting other motorists and blowing onto private property and into drainage ways. IDEM and law enforcement personnel should regularly inspect transport vehicles to deter a possible lack of diligence on the part of haulers used by NIPSCO.

Response: See response to Comment 39.

Comment 51: When the time arrives and months prior before deconstructing begins, make a simple post in newspaper, Facebook, or/and City Hall.

Response: See response to Comment 21.

Comment 52: If the resident resides on the Westside and can show proof of residence (mail, I.D., only), they should be automatically qualified to help with labor and make a seasonal flat pay, paid per diem, or hourly rate at weekly pay. This is a strong way to get the community involved by showing initiative through an opportunity given.

Response: See response to Comment 16. IDEM does not have authority to dictate whom NIPSCO hires to implement the closure plan.

Comment 53: We need to SAVE, sustain, and try to maintain Mt. Baldy.

Response: See response to Comment 16.

Comment 54: The city needs something new and modern and that would bring life out of people being curiously happy. We could design our own layout of an attraction like Navy Pier in Chicago. It could be such a delight. All proceeds can go to saving the dunes and staff. The objective is to save the dunes regardless by helping preserve as much as possible and allowing Mother

Nature to take its course. Beautifying our city and dunes. Create something recreational and forever cool like experiencing how to float in air or fly or know what it's like without gravity. Something spacious and fun. V-lining could definitely be something to think about. To be able to V-Line from 1 side Nipsco area to the dunes. We could build Dunes Drive-In Theater.

Response: See response to Comment 16.

Comment 55: I'd like to formally provide my support for Save the Dunes' recommendations based on their comment letter provided to IDEM earlier (https://savedunes.org/wpcontent/uploads/2020/05/SDCF-on-NIPSCO-Coal-Ash-Pond-Closure.pdf).

Response: At the time that IDEM is responding, this link does not work. We asked for written comments via email or mail, and IDEM has responded to them in this document. We are unable to respond to the comments in the link above.

Comment 56: Transport the coal ash in trucks compliant with hazardous materials transport, as required by the U.S. Department of Transportation.

Response: See response to Comment 39.

Comment 57: Ensure the safety of the community receiving the coal ash by minimizing dust at the receiving landfill in Jasper County and along the trucking route.

Response: See response to Comments 39 and 46.

Comment 58: Clearly identify people in charge at IDEM so that community concerns can be responded to effectively, quickly and consistently.

Response: For questions regarding the closure plan approval, please contact the Permit Manager Alysa Raleigh at 317-234-4596 or ARaleigh@idem.in.gov.

Comment 59: NIPSCO work with an independent Community Review Committee to assess the cleanup and closure process, provide the Committee regular updates, and fund a technical expert who can monitor the Project and provide instruction, information, and advice to the Committee.

Response: See response to Comment 21.

Comment 60: IDEM publish an online webpage so public comments/concerns can be readily collected during the Project.

Response: See response to Comment 21.

Comment 61: IDEM establish and enforce procedures that ensure the safe excavation, loading, transportation, and disposal of the coal ash with substantial penalties for non-compliance, to ensure that coal ash dust does not endanger clean-up workers or the public.

Response: IDEM has established procedures and will routinely inspect and oversee removal of CCR material from the impoundments and its placement into the Schahfer RWS Type I Landfill.

Also see response to Comments 39 and 42.

Comment 62: Hire an experienced, neutral third-party to be paid for by NIPSCO to monitor the air for particulate matter near the Michigan City plant and Schafer landfill sites during excavation, transportation, and disposal of the coal ash and make real-time data from the monitoring available to the public to protect the health and safety of the workers and the public.

Response: See response to Comments 16 and 21.

Comment 63: NIPSCO transport the coal ash in "sift proof' vehicles and encapsulated to prevent ash from escaping during transportation.

Response: See response to Comment 39.

Comment 64: NIPSCO permanently and properly secure and contain the coal ash and its residue at its Michigan City facility to prevent the possibility of future spills into Lake Michigan and Trail Creek and submit to IDEM a supplemental closure plan that includes addressing and providing alternatives for replacing the deteriorating sheet pile walls.

Response: See response to Comments 5, 39, and 46.

Comment 65: A website be established by NIPSCO and IDEM so the public may be apprised of the removal and transport process which reports progress and accidents should any occur and on which community residents may post questions and concerns.

Response: See response to Comment 21. NIPSCO has a publicly accessible website concerning its CCR closure projects.

Comment 66: All trucks used to transport the coal ash be well-maintained and operated by a power source or fuel other diesel fuel to prevent additional particulate emissions. Coal ash be wetted during excavation, truck loading, and dumping to minimize fugitive dust. Transport trucks have sealed covers to prevent any leakage of dust during transport. Truck trailers and tires are rinsed thoroughly before they leave the MCGS site and the landfill site in Jasper County. Transport trucks are well-spaced in their use of roadways between MCGS and Jasper County to prevent traffic impacts during transport. INDOT be asked to provide a report prior to the transfer, estimating the impact to all roadways resulting from the thousands of truck loads traveling between MCGS and Jasper County, and that NIPSCO be required to provide a certificate of insurance or escrow funding to pay for possible, necessary repairs to the roads as a result of the coal ash transfer. The landfill in Jasper County should cover all coal ash as soon as the transfer from MCGS is complete to prevent contaminated run-off from intense rain events.

Response: See response to Comments 39 and 46.

Comment 67: NIPSCO should install twenty (20) air quality monitoring devices in locations that consider prevailing wind directions, residential density, and monitoring saturation of the entire area, to measure particulate matter levels in an area within a one-mile radius of the MCGS and the Jasper County Landfill site. NIPSCO should collect air quality data in this manner beginning before transfer of coal ash begins. All air quality data collected should be published in local media outlets and reported to IDEM no less often than monthly during active coal ash transfer and quarterly once the coal ash transfer is completed. Any air quality monitoring data that shows an increase in particulate matter must be reported to local media outlets, the City of Michigan, and IDEM within twelve (12) hours. Any increases in particulate matter of 20% or more should require the coal ash transfer activity to immediately stop until IDEM can review the process on site and additional steps taken to reduce fugitive dust are confirmed by IDEM.

Response: The CCR Rule does not require continuous air monitoring.

Comment 68: All data collected by NIPSCO must be reviewed and collected independently by IDEM engineers at least bi-annually. Monitoring data must also be published in local media outlets and provided to the Michigan City Sanitary District.

Response: IDEM reviews data collected and submitted by NIPSCO. This data is put into VFC and is accessible to the public. Additionally, NIPSCO has a publicly accessible website concerning its CCR closure projects.

Comment 69: IDEM should submit a supplemental closure plan to address the current failed barrier between the MCGS site and the Lake to ensure that any residual coal ash is properly contained.

Response: See response to Comment 5.

Comment 70: I email you today in regards to the IDEM/NIPSCO Pond Ash clean up plan and ask if you are still looking for additional beneficial reuse applications for the ponded ash? LafargeHolcim is the World's leader in manufacturing building materials (cement, concrete, aggregates, asphalt, etc), and within our company we also have Geocycle which is our alternative fuels/coprocessing division (please see a brief introduction to Geocycle which I have attached). Through Geocycle we are currently beneficially reusing ponded ash at 6 or more of our cement plants and if this ash is suitable, we believe we could have the ability to beneficially reuse the majority of the ash that is currently scheduled to be landfilled.

Response: We appreciate information on LafargeHolcim, however IDEM does not dictate whether NIPSCO must beneficially reuse the excavated coal ash, or which technology or remediation system NIPSCO must choose.

Comment 71: The ash needs to be removed and transported safely to hardened waste facilities.

Sadly, if consumers had been charged sufficiently to stay ahead of the tons of ash and to return the impacted areas to their original (AKA "pristine") condition, then we wouldn't require the large expenditure to do it right. The air, the water, public health, all are much more important than fueling the predatory expansion of industry and luxuries of the wealthy class.

Please, return them to original condition, and raise standards on the new renewable energy sources that are now on schedule to replace the old.

The cost of energy MUST include the cost of protecting the environment and the American public.

Response: See response to Comments 39 and 46.

Comment 72: There are three major events that will be happening in my little corner of the county. Number one... A large solar company is coming in and going to retain 1000 acres of farm ground to put solar panels in... All of which will be chain-link fence. Number two there is a house bill 1270 I believe that is going to be changing the course of the Kankakee River basin. And number 3, now the new coal ash dump from Michigan City is coming to the Shafer plant. I am not sure how much more our little community can take. It is up to people like you to help us retain our way of life, keep our ground clean, keep our water clean and safe, and keep all of us safe. We did not move out here to have to put up with major events that affect us in which we have no say. That is for intelligent people like you to recognize and stop the injustice.

Response: See response to Comments 39 and 46.

Comment 73: Do Not move coal ash from Michigan City, IN to Wheatfield, IN without proper Environmental Watchdog oversight and Proper air testing. Ethical and moral behavior and profits are NOT mutually exclusive. The Region has the best air quality we've had in decades d/t limited activity because of the pandemic. Gotta say it's been quite nice to breathe a bit easier lately. You putting toxic chemicals into our air is unacceptable. At any time!! The lungs of your consumer stakeholders are an important consideration for you, or should be. Do The Right Thing! EPA, and IDEM that includes you too!

Response: See response to Comments 24, 39, and 44.

Comment 74: Why stir up more problems? We already have enough people out of work. YOU SAY IT WOULD BE A CLEAN MOVE WITH TRUCKS BEING COVERED. HAVE YOU EVER DRIVEN BEHIND SO CALLED COVERED TRUCKS. ROCK TRUCKS,THROW ROCKS. ROOFING COMPANIES USE COVERED TRUCKS TO HAIL SCRAP SHINGLES YET YOU WILL FIND THEM ON THE ROADS. SO COVERED TRUCKS ARE NOT SAFE. WHY NOT LEAVE THINGS THE WAY THEY ARE? NO CONTAMINATION AND NO LOST JOBS.

Response: See response to Comments 39 and 46.

Comment 75: In regards to coal plant on Lake Michigan do you guys care about taking toxic chemicals from one place putting it in another where entire city drinks ground water? I live in Wheatfield and it's not acceptable. I thought you guys where here to protect public everywhere not just one place or city in going to be monitoring this situation.

Response: See response to Comment 46.

Comment 76: The community has never had, and absolutely deserves, increased transparency about subsurface movements (past, present, and future) of coal ash contaminants. Informal discussions with NIPSCO staff in the past have indicated that the ponds are unlined on a sand substrate, which as you know means an almost absolute certainty of subsurface contaminant migration. In the present, we hope that this will indicate a need for expanded water monitoring well beyond the site to reflect this probability in surrounding groundwater, Lake Michigan, and Trail Creek with easily accessible testing results and accompanying for the lay public.

Response: All reports that are submitted to IDEM are posted to VFC and available to the public. Additionally, NIPSCO has its own website concerning its CCR closure projects.

Also see response to Comment 14.

From: Poe, Diane L
To: "awspaeth@gmail.com"; "abazan@umich.edu"; "a.freymann@comcast.net"; "amylittle3@gmail.com"; "ageorgion12@gmail.com"; "andrewjgriffin@gmail.com"; "annntom@hotmail.com"; "amprimack@gmail.com"; "orca3639@yahoo.com"; "ashley.williams@sierraclub.org"; "barb@lagonihealth.com"; "carl.landwehr@verizon.net"; "hernandezc@claycorp.com"; "cathimurray810@gmail.com"; "hunter@csinet.net"; "csowa2@sbcglobal.net"; "indianacon@gmail.com"; "dzygas@emichigancity.com"; "danegcarlson@gmail.com"; "dawn@goblinandthegrocer.com"; "deb.j.abrahamson@gmail.com"; "deborahlchubb@gmail.com"; "donbriggs@mac.com"; "dhancock@pangere.com"; "donnalopez575@gmail.com"; "akleese@comcast.net"; "heisler.marc@gmail.com"; "beth.rutherford@icloud.com"; "beverlyshores.clerk@gmail.com"; "pastorerica@clcvalpo.org"; "phrankly@LIVE.COM"; "rosevbraun@gmail.com"; "ringguy@gmail.com"; "glavoll@le-sc.org"; "IFrank@hecweb.org"; "jp@duneoaks.net"; "janmparr@gmail.com"; "jason.griffin@lafargeholcim.com"; "jenny@wardo.com"; "eversjd@outlook.com"; "kaycoughlin3@gmail.com"; "kayrosen@earthlink.net"; "boatlakemichigan@gmail.com"; "ms.ltroutman@live.com"; "lbmclean@icloud.com"; "levans@earthjustice.org"; "nrfplcom@yahoo.com"; "lisa.sarsany@gmail.com"; "redhotpress@mac.com"; "kasparasloretta@gmail.com"; "marla.hannon@eastporter.k12.in.us"; "marvel.1@osu.edu"; "melissaerke@me.com"; "mike@amfsfiltration.com"; "nancy@cassidyphoto.com"; "dancinarts@gmail.com"; "nmolden@comcast.net"; "nancy@sassafrasenterprises.com"; "nplooster@falk-pli.com"; "mulconrey@comcast.net"; "petitomk@yahoo.com"; "patrick.bergerson@gmail.com"; "pkysel@live.com"; "moniquetrub@gmail.com"; "ryoung@prattindustries.com"; "rloftus@aol.com"; "roandalan@yahoo.com"; "dimitroffs@msn.com"; "ryancmcgrath@gmail.com"; "sheilamarie@benedictine.com"; "townofpines@comcast.net"; "sthom1113@gmail.com"; "suzyvance@mac.com"; "tweber.bstowncouncil@gmail.com"; "todkelly@alumni.iu.edu"; Tyler Hempfling; "tylag@cdwg.com"
Cc: Raleigh, Alysa
Subject: Michigan City Generating Station Permit Closure/Post-Closure Plan Approval
Date: Wednesday, March 10, 2021 7:47:00 AM
Attachments: 031021 46-010 Approval Packet.pdf
image002.png
image005.png
image006.png
image007.png
image008.png
image004.png

Attached is correspondence regarding the above property in LaPorte County. You are receiving this email due to your expressed interest in this decision.

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the Anthem NurseLine online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP)**: Available to full-time state employees and adults in household regardless of health plan participation. Call 800-223-7723 or visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

Diane Poe, Administrative Assistant
Permits Branch | Office of Land Quality
Indiana Department of Environmental Management

(317) 232-4473 | dpoe@idem.IN.gov

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

March 10, 2021

Michigan City Public Library
100 East 4th Street
Michigan City, Indiana 46360

Re: Documents for Public View

Dear Sir/Madam:

A copy of a permit decision for the Michigan City Generating Station is enclosed. Also enclosed is a copy of the public notice announcing this permit decision and indicating the documents' availability at your library. This public notice will appear in a local newspaper soon. Please make these documents available to the public for the next 20 days since this permit can be appealed.

We recognize your facility may be closed or have limited hours due to the COVID-19 pandemic, and the public notice notes there may be limitations to the document's availability at your library. Please date and sign the enclosed verification of receipt form and mail it to our office in the envelope provided with a description of how and when the document was made available to the public for review.

If you have any questions or comments about the permit notice, please contact me by dialing (317) 234-4596 or by e-mail at ARaleigh@idem.in.gov.

Sincerely,

Alysa Raleigh

Alysa Raleigh
Solid Waste Permits Section
Office of Land Quality

Enclosures: Notice of Decision
Permit Letter
Verification of Receipt Form
Agency Addressed Envelope

cc with enclosures: LaPorte County Health Department
LaPorte County Commissioners
Laporte County Solid Waste Management District
Director, Northwest IDEM Regional Office
Mayor, City of Michigan City

From: Poe, Diane L
To: "icains@lpheralddispatch.com"
Bcc: OAKES, GLYNDA; Raleigh, Alysa
Subject: Michigan City Generating Station Permit Closure/Post-Closure Plan Approval
Date: Wednesday, March 10, 2021 7:41:00 AM
Attachments: 031021 46-010 NOD Only COVID.docx
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To Whom It May Concern:

Please insert for one time only the enclosed legal notice, in The News Dispatch, on Friday, March 12, 2021 (or earliest possible date).

If there is an additional charge to post this notice on your web site, please DO NOT post.

Starting January 2019, we are asking all newspapers to provide us an estimated invoice prior to publishing this notice. You may email it to my attention. Please include **Account Number 60047284** on all billing correspondence.

As we understand it, you will provide us with a notarized form (publishers claim) and clippings showing the date on which the advertisement appeared in your paper. This information should be mailed to Diane Poe at the following address:

dpoe@idem.IN.gov or

Indiana Department of Environmental Management
Office of Land Quality
Permits Branch
IGCN Room 1101
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Please contact Diane Poe at (317) 232-4473 or dpoe@idem.IN.gov or Alysa Raleigh at (317) 234-4596 or araleigh@idem.in.gov if you have any questions. Thank you for your cooperation.

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the Anthem NurseLine online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP)**: Available to full-time state employees and adults in household regardless of health plan participation. Call 800-223-7723 or

visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

Diane Poe, Administrative Assistant
Permits Branch | Office of Land Quality
Indiana Department of Environmental Management

(317) 232-4473 | dpoe@idem.IN.gov

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno Pigott
Commissioner

November 2, 2021

VIA ELECTRONIC MAIL

Ms. Natalie Conlon, Natural Resources Permitting Principal
NIPSCO – Michigan City Generating Station
801 East 86th Avenue
Merrillville, Indiana 46410

Dear Ms. Conlon:

Re: NPDES Permit No. IN0000116
NIPSCO – Michigan City Generating Station
Michigan City, IN – LaPorte County

On October 10, 2019, the IDEM Office of Water Quality received a request from NIPSCO for approval to begin dewatering the CCR Pond System (Primary Settling Pond #1, Secondary Settling Pond #1, Primary Settling Pond #2, Secondary Settling Pond #2, and the Boiler Slag Pond) at the Michigan City Generating Station to comply with Coal Combustion Residuals (CCR) Rule requirements. Additional information was received on October 7, 2020.

IDEM issued an approval letter for this project to NIPSCO on May 4, 2021. It was discovered that there was a typographical error in the table of parameters, notably an incorrect value for free cyanide. IDEM is issuing this letter to correct that error. The value for free cyanide has been amended and a new footnote [4] has been included regarding the test methods for free cyanide. All other content of the letter remains unchanged from the May 4, 2021 letter. This Office regrets any inconvenience this may pose.

The IDEM Office of Water Quality has reviewed NIPSCO's proposal and subject to the comments made in the letter received October 10, 2019 from NIPSCO, and the following conditions, has no objections to the dewatering plans at the Michigan City Generating Station:

1. Dewatering discharge will not last more than 12 months.

2. Notification of the project beginning and end dates should be provided to IDEM for review (email to twissel@idem.in.gov is acceptable).

3. NIPSCO will report the extra sample data that is consistent with the terms and methods of the NPDES permit by both DMR/MMR and will also provide the data to IDEM via email as the weekly/monthly data are compiled.

4. All data collected shall be submitted to IDEM for review (email to twissel@idem.in.gov is acceptable).

5. All data collected shall be retained by NIPSCO for a minimum of three (3) years.

6. While dewatering is occurring, the discharge from the Final Pond shall be monitored for the listed parameters at the frequency provided below. For the parameters which are monitored and/or limited in the permit for this outfall, the sample type used for those parameters shall be the sample type specified in the permit. The sample type for any other parameters shall be by grab sample. Pollutants in the discharge from the Final Pond shall not exceed the concentrations provided below. If any of these concentrations are exceeded, dewatering discharge shall cease immediately, and an alternative disposal method utilized until these conditions can be met.

Parameter[1][2]	Plant Outage [3] Concentration (mg/l)	Normal Operation Concentration (mg/l)	Monitoring Frequency
Total Suspended Solids	30	30	2 X Week
Oil & Grease	10	15	2 X Week
Aluminum	Report	Report	1 X Month
Antimony	0.039	0.078	1 X Month
Arsenic	0.11	0.55	1 X Week
Cadmium	0.0015	0.0015	1 X Month
Total Chromium	0.059	0.059	1 X Month
Copper	0.029	0.029	2 X Month
Lead	0.0046	0.0046	1 X Month
Mercury	3.2 (ng/l)	3.2 (ng/l)	1 X Month
Nickel	0.033	0.066	1 X Month
Selenium	0.0037	0.059	1 X Week
Zinc	0.1	0.24	1 X Week
Ammonia (as N)	0.61	9.8	1 X Week
Boron	3.7	7.7	1 X Month
Chloride	290	580	1 X Week
Sulfate	190	3000	1 X Week
Fluoride	0.74	12	1 X Week
Iron (dissolved)	Report	Report	1 X Month
Cyanide, Free [4]	0.0025	0.0025	1 X Month

[1] Unless otherwise indicated, metals shall be measured and reported in total recoverable form.

[2] The analytical and sampling methods used shall conform to the version of 40 CFR 136 incorporated by reference at 327 IAC 5-2-1.5 and if specific methods are specified in the NPDES permit for a parameter, those specific methods should be used.

[3] These alternate trigger values are applicable during any period of time in which the cooling towers are under maintenance.

[4] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Cyanide, Available**	4500-CN-G-1999	5 µg/l	16 µg/l
Cyanide, Available**	OIA-1677-09 (available)	0.5 µg/l	1.6 µg/l
Cyanide, Available**	Kelada-01 (available)	0.5 µg/l	1.6 µg/l
**Free cyanide shall be reported as free cyanide but measured using one of the EPA approved test methods above for available cyanide.			

Email notifications and questions concerning this letter may be addressed to Taylor Wissel at 317/234-4260 or twissel@idem.in.gov.

Sincerely,

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

Enclosures

cc: LaPorte County Health Department
Jeff Loewe, IDEM
Eddy Depositar, IDEM
Nikki Gardner, IDEM

MICHIGAN CITY GENERATING STATION - CLOSURE BY REMOVAL

PROJECT INFORMATION BASIS OF ESTIMATE

Date:	11/27/2019
Client:	NIPSCO
	3001 Leonard Drive
	Valparaiso IN 46383
IDIQ Contract #:	PO S
Project #:	3782193347
Project:	Michigan City Generating Station CCR Impoundment Closure
Location:	101 Wabash Street
	Michigan City, IN
Facility ID:	NA
Estimate Date:	11/27/2019
Prepared By:	Wood Environment & Infrastructure Solutions
Address:	11003 Bluegrass Parkway, Suite 690
City, State Zip:	Louisville, KY 40299
Phone:	610.877.6105

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

Work under this contract includes furnishing all labor, materials, and equipment necessary to provide construction services for the Coal Combustion Residuals (CCR) Impoundment Closure located at the Michigan City Generating Station (MCGS) located at 101 Wabash Rd, Michigan City, Indiana. Provide construction services as designed by Wood Environment and Infrastructure Solutions (Wood E&IS) for the closure of the CCR impoundments. The project will consist of the removal of the CCR materials from the impoundments, and hauling/disposal to/in the CCR-compliant landfill at RM Schahfer Generating Station (RMSGS). Work will include dewatering of the CCR materials and subsurface groundwater to allow removal and backfill activities, water treatment, storm water management, environmental controls, placement of backfill/topsoil and establishment of vegetation. Refer to the Closure Application (as approved by IDEM) and the Engineering Design Basis Report dated 9/6/2019.

Plans are 60% Design dated 08/22/2019 as designed by Wood E&IS.

SOURCE OF COST DATA:

1. The cost estimate is based upon drawings and information prepared by Wood E&IS.
2. Material Unit Costs are based on multiple sources including in-house, estimating publications, estimating programs such as R. S. Means 2019, and National Estimator 2019.
3. Craft rates and crew mixes are developed with assistance from Davis Bacon Wage Rate requirements in Michigan City, LaPorte County, Indiana and IUOE Local 150 | 6200 Joliet Road, Countryside, Illinois 60525 | Phone: 708-482-8800 co Business Agent Carlton Glover.
4. Equipment costs based on latest rental rates from multi-sources including in-house, estimating programs such as R. S. Means 2019 and National Estimator 2019.
5. Unit rates for union labor assume 5-10 hour shifts per week. Overtime rates are included for time worked over 40 hours.
6. The majority of material deliveries are assumed to occur during normal working hours.
7. Estimate preparation is based upon project being a best value award to the responsive trade contractors and suppliers with no unusual contract requirements. Best Value represents qualifications, cost, and schedule consideration versus just cost.
8. Items that may change the estimated construction costs include but are not limited to:
   a. Additions, deletions or modifications to the project work without repricing
   b. Unforeseen phasing requirements
   c. Restrictive technical specifications or excessive contract conditions
   d. Any specified items which cannot be obtained from at least three (3) alternate sources
   e. A no-competitive bid situation
   f. Bids requested subsequent to the estimates validity date
   g. Location related to proximity of off-site soil (assumed at 10 miles) and topsoil borrow sources and the resulting effect on transportation costs.
9. Project will be performed using local building and construction trades as Union Labor as a National Maintenance Agreement project and 4 County Highway Agreement (Union Labor Agreement).
10. This project is a tax-exempt project for materials, labor and equipment. Only rental equipment is subject to Indiana sales tax. It is assumed for this exercise the excavation company will own all its equipment.
11. It is expected that contractors with specialized CCR capabilities will be selected to service this project.
12. It is assumed that the selected contractors are appropriate and skilled in this type of work. One that self performs some or most of the work.
13. Bid markets are turbulent. Woods latest bid scenario had 7 contractors respond to bid while on bid day only 3 bids were received.

ESTIMATE ASSUMPTIONS:

1. Refer to Design Basis Report dated 08/15/2019 for general project assumptions.
2. It is assumed that the Prime contractor is a civil/earthwork contractor with specific CCR work experience.
3. It is assumed that this work will be executed throughout the calendar year. Activities during the rainy season (springtime) can significantly impact project costs due to water management and treatment requirements.
4. CCR removal and hauling volumes are based on 60% design drawings.
5. Estimated CCR volumes assume NIPSCO does not remove CCR (boiler slag) prior to the contract date.
6. Soil backfill volumes are estimated pending construction drawing final takeoffs.
7. Dewatering and water treatment volumes are estimated from expected project requirements. Water volume estimates can vary significantly depending on site conditions, contractor methods, groundwater impact levels and weather conditions.
8. It is assumed that surface debris piles and the crushed stone pad at Primary Settling Pond No. 1, as well as the soil pile in the Boiler Slag Pond is included in the excavation and disposal volume for this scenario.
9. Costs for demolishing surface piping from the Station to the impoundments is included.
10. Free water will be treated and discharged to the Final Pond.
11. Non-contact storm water will be discharged to the Final Pond.
12. Interstitial water/contact water (including storm water in contact with CCR material) will be treated prior to discharge to the Final Pond.
13. Project construction schedule is anticipated to be 12 months, with no work stoppage during winter months.
14. Approved off-site soil borrow material is assumed to be available within 10 miles of the MCGS.
15. Exclusions include: NIPSCO Indirect Labor, AFUDC, Owners costs (such as Site Investigation, Engineering, Construction Quality Assurance, SWPPP inspections, and permitting costs.).

MCGS - CCR Impoundment Closure by Removal of CCR Material - Opinion of Probable Closure Cost						
Item	**Description**	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**	**Item Cost**
1.00	**Mobilization/Demobilization**					
1.01	Mobilization/Demobilization	LS	1	$ 530,000	$ 530,000	**$ 530,000**
2.00	**Survey Control and Layout**					**$ 105,000**
2.01	Construction Layout and Staking	LS	1	$ 35,000	$ 35,000	
2.02	Progress Surveys (Impoundment and Landfill)	LS	1	$ 50,000	$ 50,000	
2.03	Project Record Survey	LS	1	$ 20,000	$ 20,000	
3.00	**Site Demolition**					**$ 131,496**
3.01	Remove outlet structure at Primary Settling Pond No. 1	LS	1	$ 10,000	$ 10,000	
3.02	Remove outlet structure at Primary Settling Pond No. 2	LS	1	$ 10,000	$ 10,000	
3.03	Grout underground piping - Primary Settling Pond No. 1 to Secondary Settling Pond No. 1 (24" dia)	CY	7.4	$ 300	$ 2,234.03	
3.04	Grout underground piping - Secondary Settling Pond No. 1 to Final Pond (24" dia)	CY	37.2	$ 300	$ 11,170.13	
3.05	Grout underground piping - Primary Settling Pond No. 2 to Secondary Settling Pond No. 2 (24" dia)	CY	7.4	$ 300	$ 2,234.03	
3.06	Grout underground piping - Secondary Settling Pond No. 2 to Final Pond (24" dia)	CY	4.8	$ 300	$ 1,452.12	
3.07	Grout underground piping - Boiler Slag Pond to Final Pond (24" dia)	CY	9.3	$ 300	$ 2,792.53	
3.08	Grout underground piping - Boiler Slag Pond to Final Pond (24" dia)	CY	14.9	$ 300	$ 4,468.05	
3.09	Grout underground piping - Boiler Slag Pond to Final Pond (12" dia x 95 ft long) x 5 pipes	CY	13.8	$ 300	$ 4,145.17	
3.10	Demolish existing piping around ponds	LS	1	$ 80,000	$ 80,000	
3.11	Demolish storm drain piping in Secondary Pond No. 2	LS	1	$ 3,000	$ 3,000	
4.00	**Site Preparation**					**$ 800,973**
4.01	Ingress/egress ramps for Primary Settling Ponds No. 1 and No. 2	CY	3,900	$ 39	$ 152,100	
4.02	Geotextile underneath ramp	SY	2,067	$ 1.80	$ 3,720.00	
4.03	Aggregate surfacing for primary settling pond ramps	Tons	1,395	$ 50	$ 69,750.00	
4.04	Site grading/drainage to limit run-on into impoundments	LS	1	$ 50,000	$ 50,000	
4.05	Relocate stone pad at Primary Settling Pond No. 1 (included in Primary Settling Pond No. 1 excavation)	CY	0	$ 13	$ -	
4.06	Install storm drain system to divert storm water from Boiler Slag Pond (convey to Final Pond)	LF	360	$ 101	$ 36,360	
4.07	Install new manhole/catch basin for diversion pipe	Each	1	$ 6,000	$ 6,000	
4.08	Install storm drain pipe across road @ Boiler Slag Pond to divert runoff	LF	30	$ 101	$ 3,030	
4.09	Saw cut pavement for new pipe crossing	LS	1	$ 1,000	$ 1,000	
4.10	Replace pavement at new pipe crossing	SF	132	$ 5.40	$ 712.80	
4.11	Dispose of debris pile at the Boiler Slag Pond	LS	1	$ 50,000	$ 50,000	
4.12	Silt Fence	LF	4,000	$ 3.50	$ 14,000.00	
4.13	Truck wash (all surface impoundments)	LS	1	$ 114,300	$ 114,300	
4.14	Primary Pond No. 1 CCR Conditioning Pad	LS	1	$ 300,000	$ 300,000	
5.00	**Dewatering & Treatment - Free water, Interstitial water Contact water**					**$ 4,266,920**
5.01	Remove free water	Mo	0.50	$ 30,000	$ 15,000	
5.02	Install and operate groundwater extraction systems (4 ponds, removal and re-install)	LS	1	$ 1,600,000	$ 1,600,000	
5.03	Treat free water	Mo	0.5	$ 212,660	$ 106,330	
5.04	Install, commission, and operate a 500 GPM treatment system for 11.5 months	Mo	11.5	$ 212,660	$ 2,445,590	
5.05	Holding storage for treatment prior to discharge	LS	1	$ 100,000	$ 100,000	

6.00	**Excavate and Backfill Boiler Slag Pond**						**$ 3,089,607**
6.01	Condition wet ash (target moisture content for hauling is 15-20%)	BCY	0	$	16.10	$ -	
6.02	Hydroexcavate near underground recirculation water lines beneath Boiler Slag Pond	LS	1	$	60,000	$ 60,000	
6.03	Excavate CCR material and stockpile for loading (includes 4,400 CY of soil material stockpiled on pond)	BCY	45,700	$	2.90	$ 132,530	
6.04	Load CCR material into on-road trucks for disposal	BCY	45,700	$	3.12	$ 142,584	
6.05	Haul to disposal facility	Tons	54,840	$	27.75	$ 1,521,810	
6.06	Install outlet storm drains for Boiler Slag Pond	LF	80	$	263.55	$ 21,084	
6.07	Soil borrow material	BCY	31,000	$	31	$ 961,000	
6.08	Place soil backfill (from off-site borrow area) graded to drain to Final Pond	BCY	31,000	$	8	$ 248,000	
6.09	Erosion control matting for perimeter surface water control ditches	SY	1,368	$	1.90	$ 2,599.20	
7.00	**Excavate and Backfill Primary Settling Pond No. 1**						**$ 4,607,442**
7.01	Dewater wet ash (target moisture content for hauling is 15-20%)	BCY	100	$	16.10	$ 1,610	
7.02	Excavate CCR material and stockpile for loading (includes 4,600 CY of soil material stockpiled on pond)	BCY	85,600	$	2.90	$ 248,240	
7.03	Load CCR material into on-road trucks for disposal	BCY	85,600	$	3.12	$ 267,072	
7.04	Haul to disposal facility	Tons	102,720	$	27.75	$ 2,850,480	
7.05	Install storm drain piping	Each	1	$	28,000	$ 28,000	
7.06	Soil borrow material	BCY	31,000	$	31	$ 961,000	
7.07	Place soil backfill (from off-site borrow area) graded to drain to Final Pond	BCY	31,000	$	8	$ 248,000	
7.08	Erosion control matting for perimeter surface water control ditches	SY	1,520	$	1.90	$ 3,040	
8.00	**Excavate and Backfill Primary Settling Pond No. 2**						**$ 4,167,304**
8.01	Dewater wet ash (target moisture content for hauling is 15-20%)	BCY	23,400	$	16.10	$ 376,740	
8.02	Excavate CCR material and stockpile for loading	BCY	48,250	$	2.90	$ 139,925	
8.03	Excavate dike between Secondary Settling Pond No. 1 and Primary Settling Pond No. 2	BCY	8,200	$	2.90	$ 23,780	
8.04	Load CCR material into on-road trucks for disposal	BCY	48,250	$	3.12	$ 150,540	
8.05	Haul to disposal facility	Tons	57,900	$	27.75	$ 1,606,725	
8.06	Install 30" storm drain in swale for Primary Settling Ponds No. 1 and No. 2, and Secondary Settling Pond No. 1 - to Final Pond	LF	440	$	168.21	$ 74,012.40	
8.07	Install 36" storm drain in swale for Primary Settling Ponds No. 1 and No. 2, and Secondary Settling Pond No. 1 - to Final Pond	LF	750	$	263.55	$ 197,662.50	
8.08	Install catch basins for 30" and 36" storm drains	Each	12	$	1,830	$ 21,960	
8.09	Bore and jack through embankment to install storm drain adjacent to transmission line structure	LF	170	$	720	$ 122,400	
8.10	Soil borrow material	BCY	37,250	$	31	$ 1,154,750	
8.11	Place soil backfill (from off-site borrow area) graded to drain to Final Pond	BCY	37,250	$	8	$ 298,000	
8.12	Erosion control matting for perimeter surface water control ditches	SY	426	$	1.90	$ 808.64	
9.00	**Excavate and Backfill Secondary Settling Pond No. 1**						**$ 832,229**
9.01	Dewater wet ash (target moisture content for hauling is 15-20%)	BCY	4,400	$	16.10	$ 70,840	
9.02	Excavate CCR material and stockpile for loading	BCY	19,000	$	2.90	$ 55,100	
9.03	Load CCR material into on-road trucks for disposal	BCY	19,000	$	3.12	$ 59,280	
9.04	Haul to disposal facility	Tons	22,800	$	27.75	$ 632,700	
9.05	Install storm drain piping	Each	1	$	13,500	$ 13,500	
9.06	Soil borrow material (included with Primary Settling Pond No. 2)	BCY	0	$	31	$ -	
9.07	Place soil backfill (included with Primary Settling Pond No. 2)	BCY	0	$	8	$ -	
9.08	Erosion control matting for perimeter surface water control ditches	SY	426	$	1.90	$ 808.64	

10.00	**Excavate and Backfill Secondary Settling Pond No. 2**					**$ 653,002**
10.01	Dewater wet ash (target moisture content for hauling is 15-20%)	BCY	3,332	$ 16.10	$ 53,645	
10.02	Excavate CCR material and stockpile for loading	BCY	7,400	$ 2.90	$ 21,460	
10.03	Load CCR material into on-road trucks for disposal	BCY	7,400	$ 3.12	$ 23,088	
10.04	Haul to disposal facility	Tons	8,880	$ 27.75	$ 246,420	
10.05	Soil borrow material	BCY	7,900	$ 31	$ 244,900	
10.06	Place soil backfill (from off-site borrow area) graded to drain to Final Pond	BCY	7,900	$ 8	$ 63,200	
10.07	Erosion control matting for perimeter surface water control ditches	SY	152	$ 1.90	$ 288.80	
11.00	**Site Controls**					**$ 645,170**
11.01	Dust control	Mo	12	$ 15,000	$ 180,000	
11.02	Management of surface water during CCR removal	Mo	12	$ 30,000	$ 360,000	
11.03	Site road maintenance during closure	Hours	300	$ 185.50	$ 55,650	
11.04	Site road dust control during closure	Hours	300	$ 148.40	$ 44,520	
11.05	Rock check dams	Each	50	$ 100	$ 5,000	
12.00	**Final Surface for Surface Impoundments**					**$ 890,993**
12.01	Topsoil	CY	6,570	$ 45	$ 295,650	
12.02	Seeding	Acre	8	$ 6,500	$ 52,000	
12.03	Place 1-foot layer of crushed stone surface (Boiler Slag Pond)	Tons	7,136	$ 50	$ 356,800	
12.04	Place non-woven geotextile on surface and slopes (Boiler Slag Pond)	SY	15,760	$ 1.80	$ 28,368	
12.05	Place riprap on slopes (Boiler Slag Pond)	Tons	3,515	$ 45	$ 158,175	
13.00	**RM Shahfer Landfill Maintenance**					**$ 859,147**
13.01	Landfill access road maintenance	Hours	300	$ 185.50	$ 55,650	
13.02	Landfill access road dust control	Hours	300	$ 148.40	$ 44,520	
13.03	Landfill operation (placement, grading, and compaction) of CCR material in landfill	CY	214,150	$ 3.01	$ 644,677.16	
13.04	Truck wash (at RMSGS Landfill - includes labor)	LS	1	$ 114,300	$ 114,300	
				Subtotal	**$ 21,580,000**	**$ 21,580,000**
	Design contingency allowance (6%) (unforseen design conditions)				**$ 1,290,000**	
	Construction contingency allowance (15%)				**$ 3,240,000**	
				Cost Opinion Total	**$ 26,110,000**	
				Low Range (-15%)	**$ 22,193,500**	
				High Range (+25%)	**$ 32,637,500**	

MICHIGAN CITY GENERATING STATION - CLOSURE IN PLACE

PROJECT INFORMATION BASIS OF ESTIMATE

Date:	2/3/2020
Client:	NIPSCO
	3001 Leonard Drive
	Valparaiso IN 46383
IDIQ Contract #:	PO S
Project #:	3782193347
Project:	Michigan City Generating Station CCR Impoundment Closure
Location:	101 Wabash Street
	Michigan City, IN
Facility ID:	NA
Estimate Date:	2/3/2020
Prepared By:	Wood Environment & Infrastructure Solutions
Address:	11003 Bluegrass Parkway, Suite 690
City, State Zip:	Louisville, KY 40299
Phone:	502-267-0700

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

Work under this contract includes furnishing all labor, materials, and equipment necessary to provide construction services for the Coal Combustion Residuals (CCR) Impoundment Closure located at the Michigan City Generating Station (MCGS) located at 101 Wabash Rd, Michigan City, Indiana. Provide construction services as designed by Wood Environment and Infrastructure Solutions (Wood E&IS) for the closure of the CCR impoundments. The project will consist of the closure in place of the CCR surface impoundments. Work will include dewatering of the CCR materials and subsurface groundwater to allow removal and backfill activities, water treatment, storm water management, environmental controls, placement of a multi-layer cover including geosynthetic liner materials, soil backfill/topsoil, and establishment of vegetation.

Plans are draft conceptual (for permit application) as designed by Wood E & IS.

SOURCE OF COST DATA:

1. The cost estimate is based upon conceptual drawings and information prepared by Wood E&IS.
2. Material Unit Costs are based on multiple sources including in-house, estimating publications, estimating programs such as R. S. Means 2019, and National Estimator 2019.
3. Craft rates and crew mixes are developed with assistance from Davis Bacon Wage Rate requirements in Michigan City, LaPorte County, Indiana and IUOE Local 150 | 6200 Joliet Road, Countryside, Illinois 60525 | Phone: 708-482-8800 co Business Agent Carlton Glover.
4. Equipment costs based on latest rental rates from multi-sources including in-house, estimating programs such as R. S. Means 2019 and National Estimator 2019.
5. Unit rates for union labor assume 5-10 hour shifts per week. Overtime rates are included for time worked over 40 hours.
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   b. Unforeseen phasing requirements.
   c. Restrictive technical specifications or excessive contract conditions.
   d. Any specified items which cannot be obtained from at least three (3) alternate sources.
   e. A no-competitive bid situation.
   f. Bids requested subsequent to the estimates validity date.
   g. Location related to proximity of off-site soil (assumed at 10 miles) and topsoil borrow sources and the resulting effect on transportation costs.
9. Project will be performed using local building and construction trades as Union Labor as a National Maintenance Agreement project and 4 County Highway Agreement (Union Labor Agreement).
10. This project is a tax-exempt project for materials, labor and equipment. Only rental equipment is subject to Indiana sales tax. It is assumed for this exercise the excavation company will own all its equipment.
11. It is expected that contractors will be certified installers by the geosynthetics manufacturer for CCR and geosynthetics installations.

12 It is assumed that the selected contractors are appropriate and skilled in this type of work. One that self performs some or most of the work.

13 Bid markets are turbulent. Woods latest bid scenario had 7 contractors respond to bid while on bid day only 3 bids were received.

ESTIMATE ASSUMPTIONS:

1 It is assumed that the Prime contractor is a civil/earthwork contractor with specific CCR work experience.

2 It is assumed that this work will be executed throughout the calendar year. Activities during the rainy season (springtime) can significantly impact project costs due to water management and treatment requirements.

3 CCR closure requirements and volumes are based on conceptual drawings.

4 Soil backfill and topsoil volumes are estimated pending construction drawing final takeoffs.

5 Dewatering and water treatment volumes are estimated from expected project requirements. Water volume estimates can vary significantly depending on site conditions, contractor methods, groundwater impact levels and weather conditions.

6 It is assumed that surface debris piles and the crushed stone pad at Primary Settling Pond No. 1, as well as the soil pile in the Boiler Slag Pond is included in regraded the ponds for closure in place.

7 Costs for demolishing surface piping from the Station to the impoundments is included.

8 Free water will be treated and discharged to the Final Pond.

9 Non-contact storm water will be discharged to the Final Pond.

10 Interstitial water/contact water (including stormwater in contact with CCR material) will be treated prior to discharge to the Final Pond.

11 Project construction schedule is anticipated to be 12 months, with no work stoppage during winter months.

12 Approved off-site soil borrow material is assumed to be available within 10 miles of the MCGS.

13 Exclusions include: NIPSCO Indirect Labor, AFUDC, Owners costs (such as Site Investigation, Engineering, Construction Quality Assurance, SWPPP inspections, and permitting costs.).

14 Based on IDEM communications, a slurry wall around the perimeter of the five impoundments is included with the physical closure cost to address CCR below the groundwater. Length of slurry wall is 4,365 feet with depth from 38' to 62'.

15 Per IDEM, hydraulic control will be required within the slurry wall. Six extraction wells and a 20 gpm system is estimated for this purpose. See hyd control tab for cost details.

Michigan City Generating Station - CCR Impoundment Closure In Place - Opinion of Probable Closure Cost						
Item	**Description**	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**	**Item Cost**
1.00	**Mobilization/Demobilization**	LS	1		$ 259,674	**$ 259,674**
2.00	**Survey Control and Layout**					**$ 105,000**
2.01	Construction Layout and Staking	LS	1	$ 30,000	$ 50,000	
2.02	Progress Surveys	LS	1	$ 25,000	$ 25,000	
2.03	Project Record Survey	LS	1	$ 20,000	$ 30,000	
3.00	**Site Demolition**					**$ 161,496**
3.01	Remove outlet structure at Primary Settling Pond No. 1	LS	1	$ 10,000.00	$ 10,000.00	
3.02	Remove outlet structure at Primary Settling Pond No. 2	LS	1	$ 10,000.00	$ 10,000.00	
3.03	Grout underground piping - Primary Settling Pond No. 1 to Secondary Settling Pond No. 1 (24" dia)	CY	7.4	$ 300.00	$ 2,234.03	
3.04	Grout underground piping - Secondary Settling Pond No. 1 to Final Pond (24" dia)	CY	37.2	$ 300.00	$ 11,170.13	
3.05	Grout underground piping - Primary Settling Pond No. 2 to Secondary Settling Pond No. 2 (24" dia)	CY	7.4	$ 300.00	$ 2,234.03	
3.06	Grout underground piping - Secondary Settling Pond No. 2 to Final Pond (24" dia)	CY	4.8	$ 300.00	$ 1,452.12	
3.07	Grout underground piping - Boiler Slag Pond to Final Pond (24" dia)	CY	9.3	$ 300.00	$ 2,792.53	
3.08	Grout underground piping - Boiler Slag Pond to Final Pond (24" dia)	CY	14.9	$ 300.00	$ 4,468.05	
3.09	Grout underground piping - Boiler Slag Pond to Final Pond (12" dia x 95 ft long) x 5 pipes	CY	13.8	$ 300.00	$ 4,145.17	
3.10	Demolish existing piping around ponds	LS	1.0	$ 80,000	$ 80,000.00	
3.11	Demolish storm drain piping in Secondary Settling Pond No. 2	LS	1.0	$ 3,000	$ 3,000.00	
3.12	Abandon monitoring wells	Each	6	$ 5,000	$ 30,000.00	
4.00	**Site Preparation**					**$ 500,973**
4.01	Ingress/egress ramps for Primary Settling Ponds No. 1 and No. 2	CY	3,900	$ 39.00	$ 152,100.00	
4.02	Geotextile underneath ramp	SY	2,067	$ 1.80	$ 3,720.00	
4.03	Aggregate surfacing for primary pond ramps	Tons	1,395	$ 50.00	$ 69,750.00	
4.04	Site grading/drainage to limit run-on into impoundments	LS	1	$ 50,000.00	$ 50,000.00	
4.05	Relocate stone pad at Primary Settling Pond No. 1 (included in Primary Settling Pond No. 1 excavation)	CY	0	$ 13.00	$ -	
4.06	Install storm drain system to divert storm water from the Boiler Slag Pond (convey to Final Pond)	LF	360	$ 101.00	$ 36,360.00	
4.07	Install new manhole/catch basin for diversion pipe	Each	1	$ 6,000.00	$ 6,000.00	
4.08	Install storm drain pipe across road @ Boiler Slag Pond to divert runoff	LF	30	$ 101.00	$ 3,030.00	
4.09	Saw cut pavement for new pipe crossing	LS	1	$ 1,000.00	$ 1,000.00	
4.10	Replace pavement at new pipe crossing	SF	132	$ 5.40	$ 712.80	
4.11	Dispose of debris pile at the Boiler Slag Pond	LS	1	$ 50,000.00	$ 50,000.00	
4.12	Silt fence	LF	4,000	$ 3.50	$ 14,000.00	
4.13	Truck wash (all surface impoundments)	LS	1	$ 114,300.00	$ 114,300.00	
5.00	**Dewatering & Treatment - Free water, Interstitial water Contact water**					**$ 3,466,920**
5.01	Remove free water	Mo	0.50	$ 30,000.00	$ 15,000.00	
5.02	Install and operate groundwater extraction systems (one half of closure by removal)	LS	1	$ 800,000.00	$ 800,000	
5.03	Treat free water	Mo	0.5	$ 212,660.00	$ 106,330	
5.04	Install, commission, and operate a 500 GPM treatment system for 11.5 months	Mo	11.5	$ 212,660.00	$ 2,445,590	
5.05	Holding storage for treatment prior to discharge	LS	1	$ 100,000.00	$ 100,000.00	
6.00	**Final Cover for Primary Settling Pond No. 1**					**$ 716,870**

Michigan City Generating Station - CCR Impoundment Closure In Place - Opinion of Probable Closure Cost						
Item	**Description**	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**	**Item Cost**
6.01	Earthwork cut - CCR material	BCY	4,000	$ 9.83	$ 39,320	
6.02	Earthwork fill - CCR material	BCY	19,000	$ 9.83	$ 186,770	
6.03	Geomembrane (40 mil LLDPE)	SF	148,500	$ 0.50	$ 74,250	
6.04	Anchor trench for geosynthetics	CY	250	$ 7.44	$ 1,860	
6.05	Geocomposite drainage layer	SF	148,500	$ 0.75	$ 111,375	
6.06	1.5 feet thick protective soil layer	BCY	7,500	$ 23.00	$ 172,500	
6.08	Protective layer placement	BCY	7,500	$ 5.00	$ 37,500	
6.09	6 inch thick soil vegetative layer	BCY	2,500	$ 28.00	$ 70,000	
6.10	Seeding	Acre	3.1	$ 6,534	$ 20,255	
6.11	Erosion control matting for perimeter surface water control ditches	SY	1,520	$ 2.00	$ 3,040	
7.00	**Final Cover for Secondary Settling Pond No. 1/Primary Settling Pond No. 2**					**$ 1,596,638**
7.02	Earthwork cut	BCY	5,900	$ 9.83	$ 57,997	
7.03	Earthwork fill	BCY	27,500	$ 9.83	$ 270,325	
7.04	Geomembrane (40 mil LLDPE)	SF	211,500	$ 0.50	$ 105,750	
7.05	Anchor trench for geosynthetics	CY	310	$ 7.44	$ 2,306	
7.06	Geocomposite drainage layer	SF	211,500	$ 0.75	$ 158,625	
7.07	1.5 feet thick protective soil layer	BCY	10,800	$ 23.00	$ 248,400	
7.08	Protective layer placement	BCY	10,800	$ 5.00	$ 54,000	
7.09	6 inch thick soil vegetative layer	BCY	3,600	$ 28.00	$ 100,800	
7.10	Seeding	Acre	4.4	$ 6,500	$ 28,600	
7.11	Erosion control matting for perimeter surface water control ditches	SY	1,900	$ 2.00	$ 3,800	
7.12	Install 30" storm drain in swale for Primary Settling Ponds No. 1 and No. 2, and Secondary Settling Pond No. 1 - to Final Pond	LF	440	$ 168.21	$ 74,012.40	
7.13	Install 36" storm drain in swale for Primary Settling Ponds No. 1 and No. 2, and Secondary Settling Pond No. 1 - to Final Pond	LF	750	$ 263.55	$ 197,662.50	
7.14	Install catch basins for 30" and 36" storm drains	Each	12	$ 1,830.00	$ 21,960.00	
7.15	Bore and jack through dike to install storm drain adjacent to transmission line structure	LF	170	$ 720.00	$ 122,400.00	
8.00	**Final Cover for Secondary Settling Pond No. 2/Boiler Slag Pond**					**$ 1,295,478**
8.01	Earthwork cut	BCY	1,700	$ 9.83	$ 16,711	
8.02	Earthwork fill	BCY	21,900	$ 9.83	$ 215,277	
8.03	Geomembrane (40 mil LLDPE)	SF	191,700	$ 0.50	$ 95,850	
8.04	Anchor trench for geosynthetics	CY	295	$ 7.44	$ 2,195	
8.05	Geocomposite drainage layer	SF	191,700	$ 0.75	$ 143,775	
8.06	1.5 feet thick protective soil layer	BCY	9,600	$ 23.00	$ 220,800	
8.07	Protective layer placement	BCY	9,600	$ 5.00	$ 48,000	
8.08	Place 1-foot layer of crushed stone surface (Boiler Slag Pond)	Tons	7,136	$ 50.00	$ 356,800	
8.09	Place non-woven geotextile on surface and slopes (Boiler Slag Pond)	SY	15,760	$ 1.80	$ 28,368	
8.10	Place riprap on slopes (Boiler Slag Pond)	Tons	3,515	$ 45	$ 158,175	
8.11	6 inch thick soil vegetative layer (Secondary Settling Pond No. 2)	BCY	165	$ 28.00	$ 4,620	
8.12	Seeding (Secondary Settling Pond No. 2)	Acre	0.2	$ 6,534	$ 1,307	

Michigan City Generating Station - CCR Impoundment Closure In Place - Opinion of Probable Closure Cost						
Item	**Description**	**Unit**	**Quantity**	**Unit Cost**	**Total Cost**	**Item Cost**
8.13	Erosion control matting for perimeter surface water control ditches	SY	1,800	$ 2	$ 3,600	
9.00	**Site Controls**					**$ 648,175**
9.01	Dust control	Mo	12	$ 15,000.00	$ 180,000	
9.02	Management of surface water during impoundment closure	Mo	12	$ 30,000.00	$ 360,000	
9.03	Site road maintenance during closure	Hours	309	$ 185.50	$ 57,320	
9.04	Site road dust control during closure	Hours	309	$ 148.40	$ 45,856	
9.05	Rock check dams	Each	50	$ 100.00	$ 5,000	
10.00	**Post Closure Storm Water Drainage**					**$ 164,245**
10.01	Excavate for 20" dia HDPE pipe	BCY	1,100	$ 9.83	$ 10,813	
10.02	Place pipe bedding	Tons	224	$ 12.00	$ 2,688	
10.03	20" dia HDPE pipe	LF	839	$ 102.90	$ 86,333	
10.04	Excavate for 30" dia HDPE pipe	BCY	159	$ 9.83	$ 1,563	
10.05	Place pipe bedding	Tons	98	$ 12.00	$ 1,176	
10.06	30" dia HDPE pipe	LF	284	$ 174.90	$ 49,672	
10.07	Concrete manhole	Each	2	$ 6,000.00	$ 12,000	
11.00	**Slurry Wall**					**$ 21,839,845**
11.01	Install slurry wall around perimter of surface impoundments	SF	204,568	$ 58.30	$ 11,926,314	
11.02	Hydraulic control inside the slurry wall. - Capital cost (See Hyd control tab)	Each	1	$ 2,710,000	$ 2,710,000	
11.03	Operations and maintenance for P&T system. $471,500 per year. Present Value, 30 yr, 5%	Each	1	$ 7,203,531	$ 7,203,531	
				Subtotal	**$ 30,760,000**	**$ 30,760,000**
	Design contingency allowance (6%)				**$ 1,850,000**	
	Construction contingency allowance (15%)				**$ 4,610,000**	
				Total Closure Total	**$ 37,220,000**	
				Low Range (-15%)	**$ 31,637,000**	
				High Range (+25%)	**$ 46,525,000**	

NIPSCO

Intercompany Communication

Date:	October 9, 2019	**From:**	Joe Kutch
Subject:	Analysis of Beneficial Reuse of Ponded Coal Combustion Residuals ("CCR") Material from CCR Surface Impoundment Closures	**Dept.:**	Environmental
To:	CCR Team		

Overview

NIPSCO generating stations with CCRs that have been stored in CCR surface impoundments consist of three stations, totaling ten CCR surface impoundments. In these surface impoundments reside materials referred to generally as fly ash, bottom ash, boiler slag, and waste Flue Gas Desulfurization ("FGD") material. The majority of these surface impoundments have historically received a mix of these materials, as opposed to one consistent, uniform stream.

Exact percentages of individual material types in each surface impoundment is not known, however, the majority of available material is a varying mixture of all four types of CCRs (see *Figure 1* for reference). The exception is the Waste Disposal Area Basin ("WDA") at Schahfer, which contains both boiler slag and bottom ash.

Boiler Slag

Historically, NIPSCO has marketed its boiler slag. This practice is intended to continue, which includes any remaining boiler slag that resides in the WDA and Boiler Slag Ponds at Michigan City and Bailly Generating Stations.

Fly Ash

After research into the potential beneficial reuse possibilities for any material with EPRI, HBW Resources (SEFA Group), and several other peer utility companies, the following was concluded. HBW Resources (SEFA Group) is interested in sources of solely fly ash, in quantities that NIPSCO does not currently have residing in any CCR surface impoundments. In a meeting with SEFA Group on November 7, 2018, it was indicated that the minimum amount of fly ash required for commercial interest would be approximately three million cubic yards. NIPSCO currently does not possess that amount, even combined, in any of the CCR surface impoundments.

Bottom Ash

Research into beneficial reuse of bottom ash beyond the application for on-site landfill base liner construction was also conducted. EPRI, HBW Resources (SEFA Group), and several other peer utility companies were contacted and had similar responses amongst them related to the reuse of this material. Bottom ash was only utilized as a light aggregate in the production of concrete, in very small quantities. In the instances that the peer companies were reusing this material, the utility companies had direct unique existing relationships with nearby cement kilns.

Waste FGD Material

Any significant quantity of waste FGD material resides only at Schahfer Generating Station, in the Material Storage Runoff Basin. The wallboard manufacturer operating adjacent to the facility is not currently interested in utilizing this material, since it does not meet the specification for drywall.

Station	Unit	Acres	Types of CCR Present	Amount of CCR present
BGS	Boiler Slag Pond	1.5	Boiler slag	30,000
BGS	Primary Settling Pond #1	4.6	Mostly type F fly ash	60,000
BGS	Secondary Settling Pond #1	2	Fly ash	34,000
BGS	Primary Settling Pond #2	5.4	Boiler slag, misc.	15,000
BGS	Secondary Settling Pond #2	3.7	Air heater wash fly ash	
Total				**139,000**
MCGS	Boiler Slag Pond	3.6	Boiler slag	26,300
MCGS	Primary Settling Pond #2	3.1	Mostly type F fly ash	40,000
MCGS	Primary Settling Pond #1	3.1	Type F fly ash, sand, spoils	80,700
MCGS	Secondary Settling Pond #1	1.2	Sand and boiler slag	17,600
MCGS	Secondary Settling Pond #2	0.4	Boiler slag	6,000
Total				**170,600**
RMSGS	Waste Disposal Area Basin	80	Bottom ash and boiler slag	672,000
RMSGS	Material Storage Runoff Basin	14.1	Gypsum	67,400
RMSGS	Metal Cleaning Waste Basin	16.5	Misc.	57,400
RMSGS	Waste run-off area (drying)	5.6	Everything	13,400
RMSGS	Retired Waste Disposal Area	57	Bottom Ash, Fly Ash	
Total				**810,200**

Figure 1 - Grey cells indicate surface impoundments not regulated by the federal CCR rule