

**NIPSCO**  
**Michigan City Generating Station (MCGS)**  
**Ash Pond Closure**  
**Virtual Public Meeting**

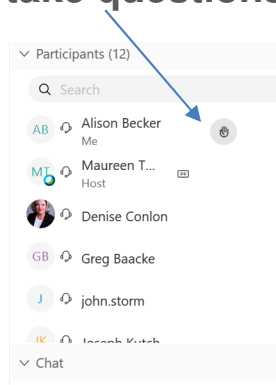
April 22, 2020



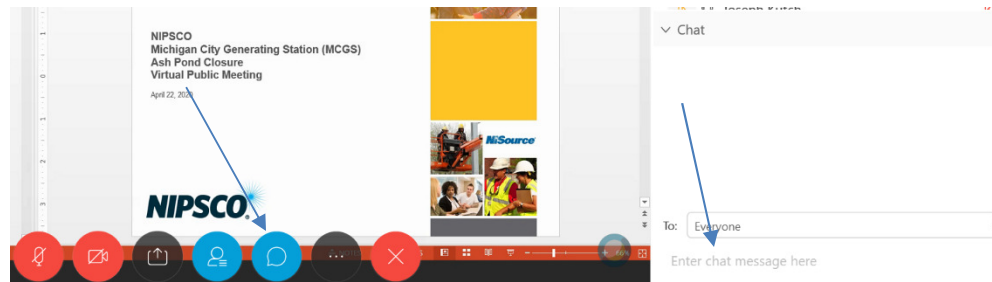
# Using Webex

- After the presentation, we will take questions in a variety of ways:

- Hand Raising



- Chat



- Email: [NIPSCO\\_Environmental@nisource.com](mailto:NIPSCO_Environmental@nisource.com)

- If time permits, we will open up the phone lines for questions

- Please keep your phone muted if not speaking

## **NIPSCO/NiSource Team**

- **Alison Becker, Manager Regulatory Policy**
- **Nick Meyer, Director Communications**
- **Maureen Turman, Director Environmental Policy and Sustainability**
- **Rob Ridge, Manager Project Engineering**
- **Marc Okin, Manager Environmental Remediation**

# Agenda

- **NIPSCO Profile**
- **Update on Your Energy Your Future**
- **Coal Combustion Residuals Rule Summary**
- **Pond Closure Project Plan**
- **Assessment of Corrective Measures**
- **Indiana Department of Environmental Management (IDEM) Public Comment Information**
- **Questions**

# NIPSCO PROFILE

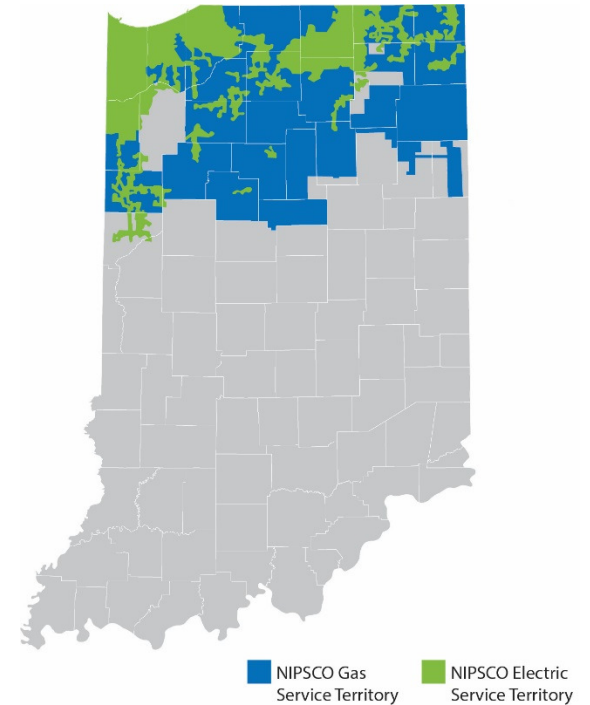
Working to Become Indiana's Premier Utility

## Electric

- 460,000 Electric Customers in 20 Counties
- 3,400 MW Generating Capacity
  - Operates 5 Electric Generating Facilities (2 Coal, 1 Natural Gas, 2 Hydro)
  - Additional 100 MW of Wind Purchased Power
- 12,800 Miles of Transmission and Distribution
  - Interconnect with 5 Major Utilities (3 MISO; 2 PJM)
  - Serves 2 Network Customers and Other Independent Power Producers

## Natural Gas

- 820,000 Natural Gas Customers; 32 Counties
- 17,000 Miles of Transmission and Distribution Line/Main
- Interconnections with Seven Major Interstate Pipelines
- Two On-System Storage Facilities



**2,900**  
Employees

**Merrillville, IN**  
Headquarters



Reliable &  
Affordable  
Energy



Strong  
Economy



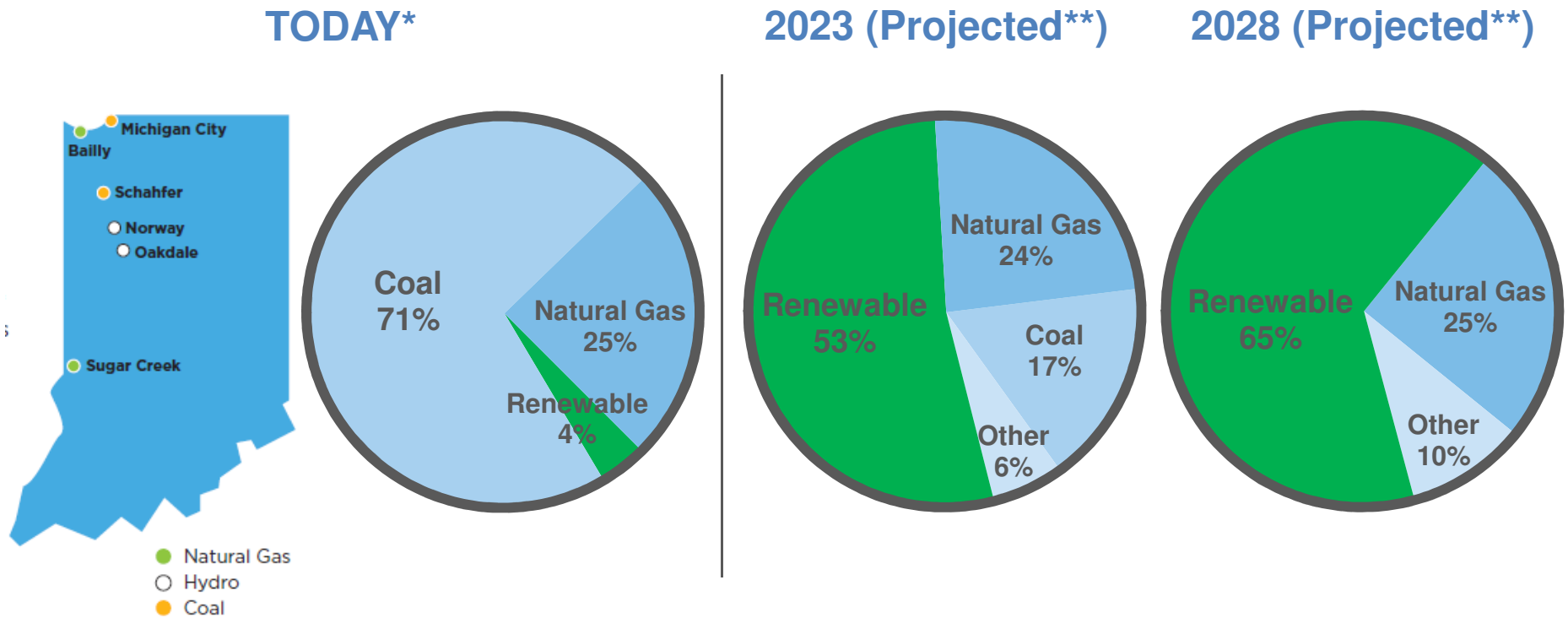
Clean  
Environment



Gradual &  
Balanced  
Transition

# LONG-TERM ELECTRIC GENERATION PLAN

A More Varied Fuel Mix Enhances Resiliency



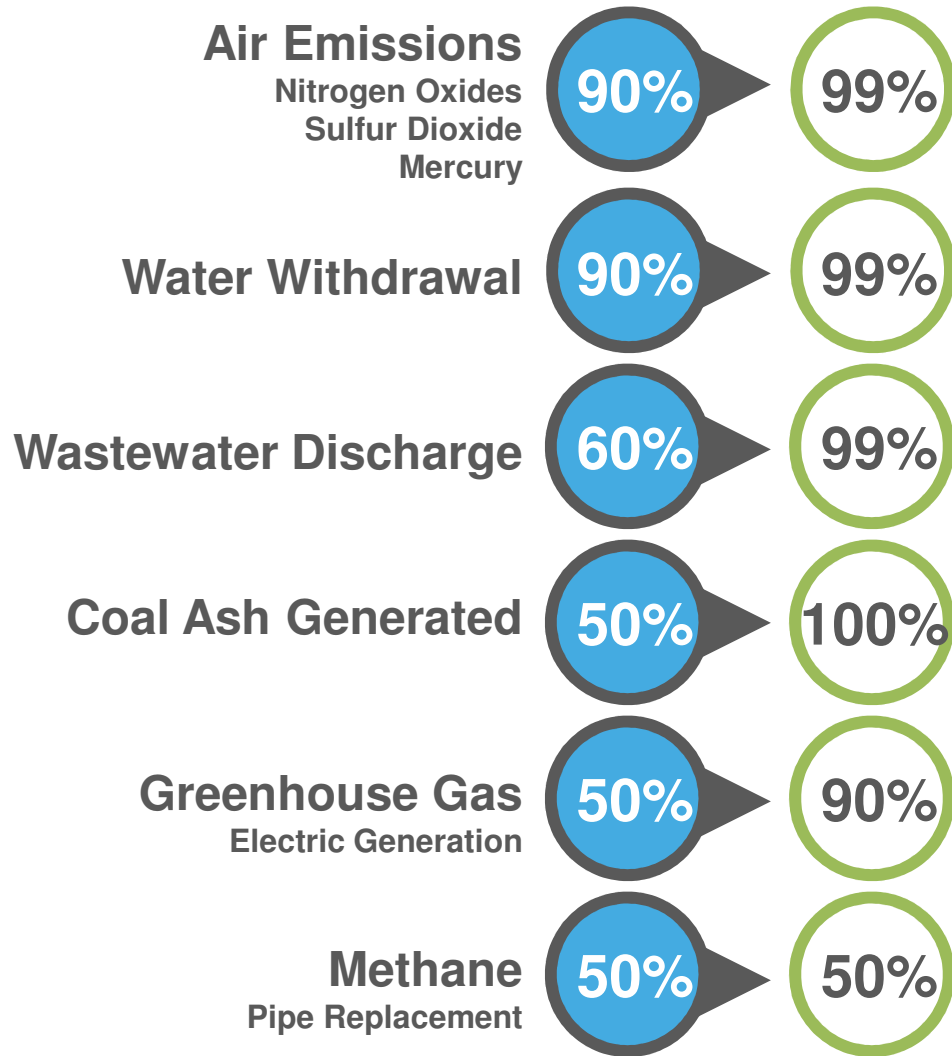
\*The Bailly Coal-fired Electric Generating Units Were Retired in May 2018

\*\*Based on NIPSCO's 2018 Integrated Resource Plan

# NISOURCE ENVIRONMENTAL TARGETS

**CURRENT REDUCTION TARGETS**  
(BY 2025 FROM 2005 LEVELS)

**NEW REDUCTION LEVELS**  
(BY 2030 FROM 2005 LEVELS)\*



**GREENHOUSE GAS TARGETS**

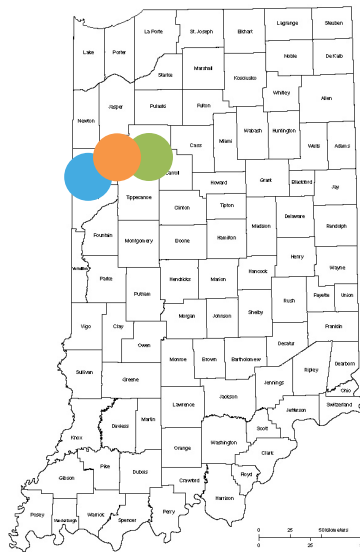
<b>Paris Agreement U.S. Target**</b>	<b>26-28%</b>
<i>(By 2025 from 2005 Levels)</i>	
<b>IPCC 1.5-Degree Scenario</b>	<b>45%</b>
<i>(By 2030 from 2010 Levels)</i>	
<b>NIPSCO Current Target</b>	<b>50%</b>
<i>(By 2025 from 2005 Levels)</i>	
<b>NiSource Proposed Target</b>	<b>90%</b>
<i>(By 2030 from 2005 Levels)</i>	

\*Based on NIPSCO's 2018 Integrated Resource Plan  
 \*\*Although U.S. announced withdrawal from Paris Agreement, NiSource is committed to continuing significant environmental progress.



# TRANSITIONING TO LOWER COST ENERGY

## Beginning with Indiana-based Wind Projects



### Jordan Creek (Benton and Warren Counties)

- 400 MW wind project; Estimated 160 turbines
- To be developed, constructed by NextEra Energy Resources, LLC
- NIPSCO will purchase the power directly from Jordan Creek, who will operate and maintain the facilities

### Rosewater (White County)

- 102 MW wind project; Estimated 25 turbines
- To be developed, constructed by EDP Renewables North America LLC
- Entered into a joint venture and ownership agreement with NIPSCO

### Crossroads (White County)

- 302 MW wind project; Estimated 80 turbines
- To be developed, constructed by EDP Renewables North America LLC
- Entered into a joint venture and ownership agreement with NIPSCO

# MCGS CCR Rule Summary

- **Rule Objective: Regulate Management and Disposal of Coal Combustion Residuals (CCRs) & Address Groundwater (GW) Impacts**
- **Phase I: Separate Ash Ponds from Generation**
  - Complete
- **Phase II: Close Ash Ponds**
  - Submitted Pond Closure Plan for State Agency Approval in December 2018
  - Complete Closure of Ash Ponds by 11/10/2023
- **Phase III: Implement GW Remedy and Monitor**
  - Install GW Wells and Collect Samples to Evaluate GW Quality Starting in 2015
  - GW Remedy 2020 – 2025
  - Monitor Performance 2025 – 2053

## Ash Facts

- Coal Ash is generated when coal is burned in a boiler to generate electricity
- Ash was either sluiced from the boiler to ash ponds or captured using other mechanical methods
- Annually, 14,500 tons of MCGS ash are beneficially reused and 50,000 tons are landfilled
- Ash sluice water is recycled in a closed loop system

Dates subject to change due to rule changes, regulatory approvals and final construction timelines

# Michigan City Generation Station

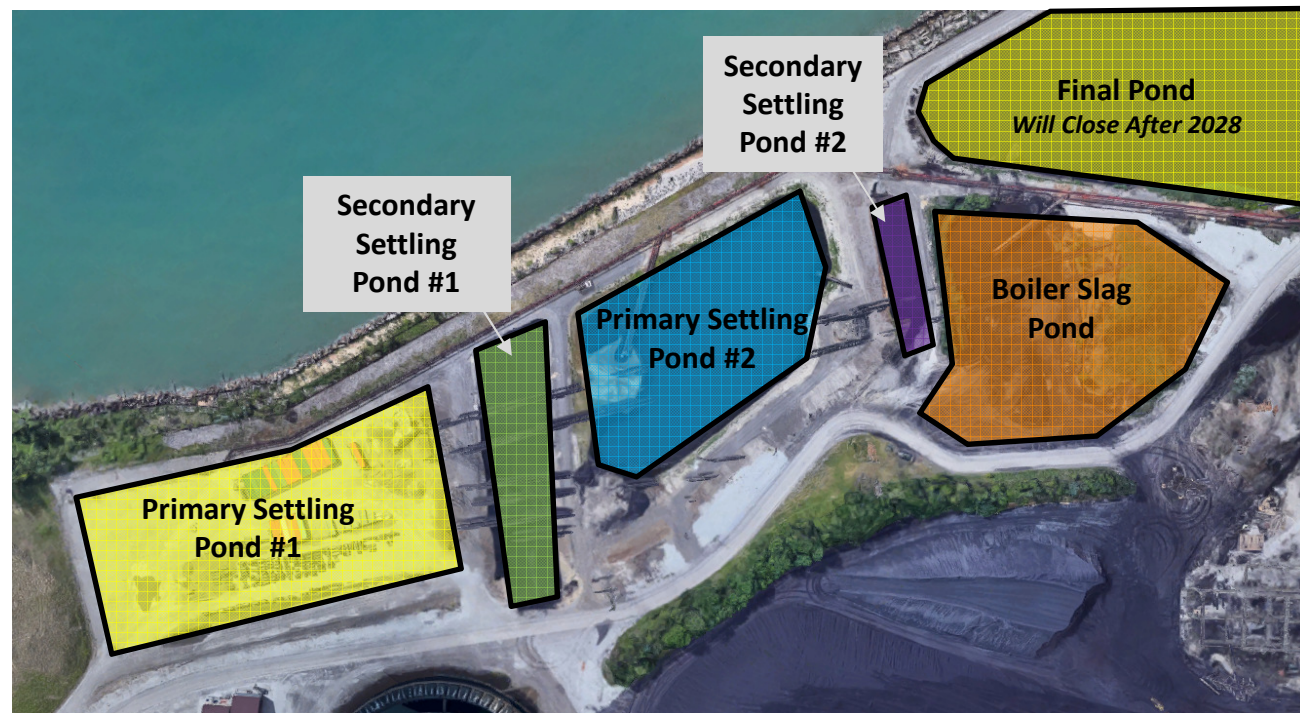




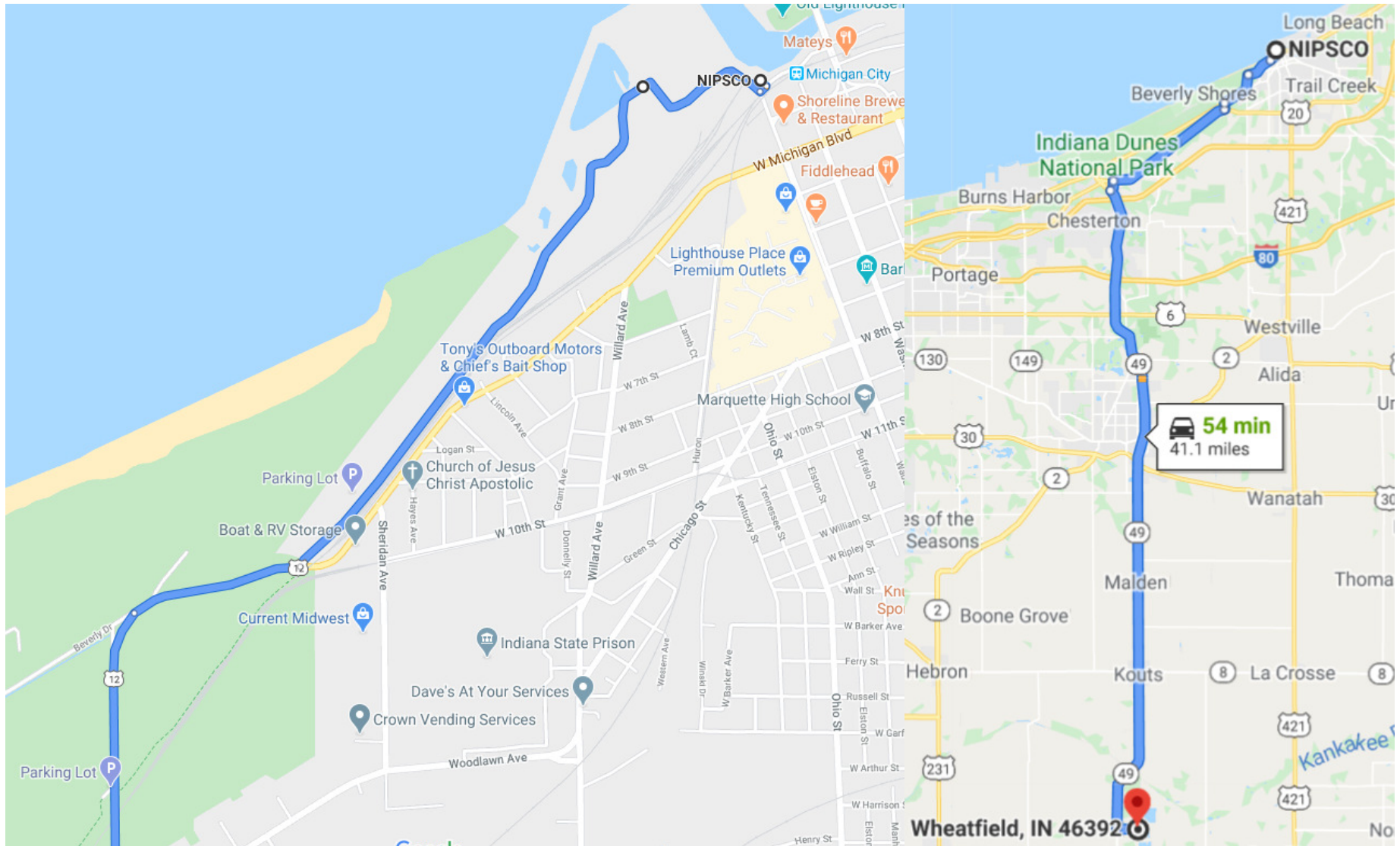
# Project Scope

- Public Outreach is the First Step in the Process and Key to Project Success
- NIPSCO has Worked with IDEM to Ensure Our Closure Plans Comply with State and Federal Requirements
- All Five MCGS Ash Ponds will be Closed via “Closure by Removal” Method
- Ash will be Beneficially Reused or Transported to the CCR Rule Compliant RM Schahfer Landfill in Wheatfield, IN
- The Project is Planned to be Completed Under the National Maintenance Agreement, which has Requirements to Utilize Union Labor to Perform the Work

Estimated Area and Volumes	
Total Area	11.4 Acres
Ash Material	170,600 CY
Potential Beneficial Reuse	26,300 CY
Backfill Material	154,900 CY
Topsoil	9,200 CY



# Potential Truck Routing for Ash Removal



# MCGS Pond Closure Project Schedule

- **Current Project Schedule**
  - Public Meeting: April 2020
  - Closure Application Approval: June 2020
  - Start Construction: Q3 2020
  - Complete Construction: Q3 2021
  - Required Completion: November 2023
  - Start Post Closure Groundwater Monitoring



Dates subject to change due to rule changes, regulatory approvals and final construction timelines

## MCGS Results of the Corrective Measures Assessment

- **A MCGS Assessment of Corrective Measures for the Boiler Slag Pond was Prepared and Published on January 14, 2020**
- **Applicable Groundwater Remedies were Screened and Evaluated for Effectiveness of Potential to meet CCR Rule Requirements:**
  - Performance
  - Reliability
  - Implementation
  - Potential Impacts of (e.g. safety, cross-media, control of exposure)
  - Time to Begin and Complete
  - Institutional Requirements (e.g. permits)
- **Various Potential Remedial Action Methods were Assessed based on MCGS Site-Specific Conditions - Three have been Retained for More Extensive Evaluation:**
  - An Alternative will be Implemented in Combination with Source Removal via Pond Closure by Removal
    - Alt. 1: Groundwater Pump & Treat
    - Alt. 2: Permeable Reactive Barrier
    - Alt. 3: Monitored Natural Attenuation



## **MCGS Results of the Corrective Measures Assessment (cont.)**

- **Removal of >11 acres of Ash Ponds will be the First Phase of the MCGS Corrective Measure**
- **Data will be Collected and Groundwater Quality will be Monitored for ~2-years After Excavation Activities are Complete to Allow Groundwater Flow Patterns to be Established and Groundwater Chemistry to Stabilize**
- **Based on Findings from the Above Activities, the Appropriate Remedial Technology will be Presented for Public Comment and Then Implemented to Complete the Corrective Measures Remedy**
- **On-going Maintenance of the Ground Water Corrective Measure and Monitoring of Groundwater Quality will be Conducted to Meet Regulatory Requirements, Currently Estimated to be a Minimum of 30-years**



## IDEM Public Comment Information

- All comments are due 30 days after the date of the public meeting
- Comments may be addressed to Alysa Hopkins, the Solid Waste Permit Manager assigned to this facility, at the following address:

**Alysa Hopkins, Permit Manager  
Indiana Department of Environmental Management  
Office of Land Quality  
Solid Waste Permits  
IGCN 1101  
100 North Senate Avenue  
Indianapolis, IN 46204-2251**

- Comments may also be submitted by email to Alysa Hopkins at [AHopkins@idem.IN.gov](mailto:AHopkins@idem.IN.gov)
- Questions may be directed to Alysa Hopkins at 317-234-4596 or [AHopkins@idem.IN.gov](mailto:AHopkins@idem.IN.gov)
- When IDEM makes a final decision about the CCR surface impoundments closure plan, a Notice of Decision will be mailed to landowners within one mile of the facility and individuals who submitted comments or requested notification.
- IDEM's Michigan City Generating Station Surface Impoundment Closure Fact Sheet is available at [https://www.in.gov/idem/files/factsheet\\_olq\\_permits\\_mich\\_city\\_ccr.pdf](https://www.in.gov/idem/files/factsheet_olq_permits_mich_city_ccr.pdf)





# Questions



# Appendix

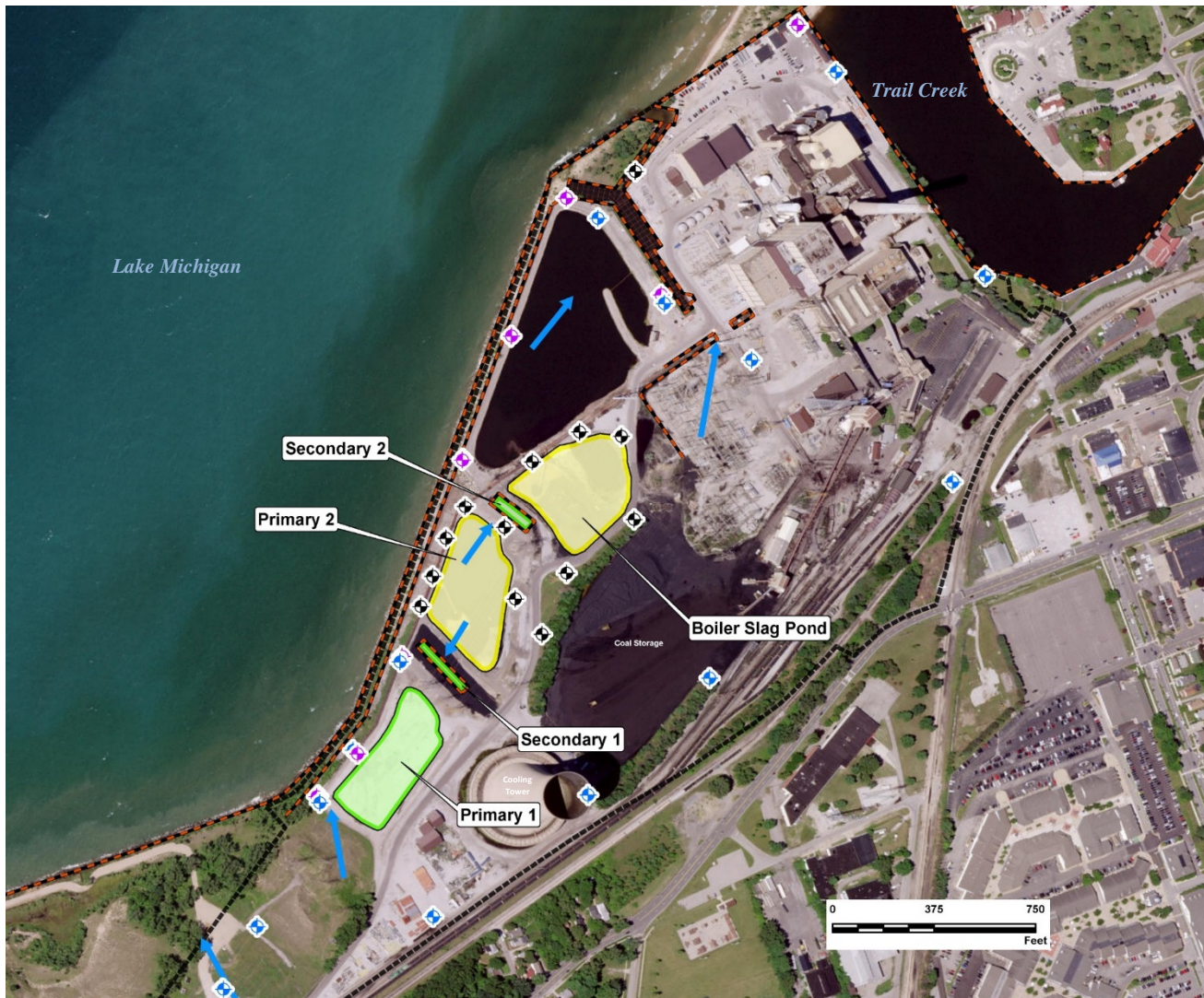


## MCGS Site Overview









-  CCR Impoundments Included in Closure Application
-  RCRA Solid Waste Management Unit Impoundments (SWMUs) Included in Closure Application
-  Sheet Pile Walls
-  Approximate Property Line





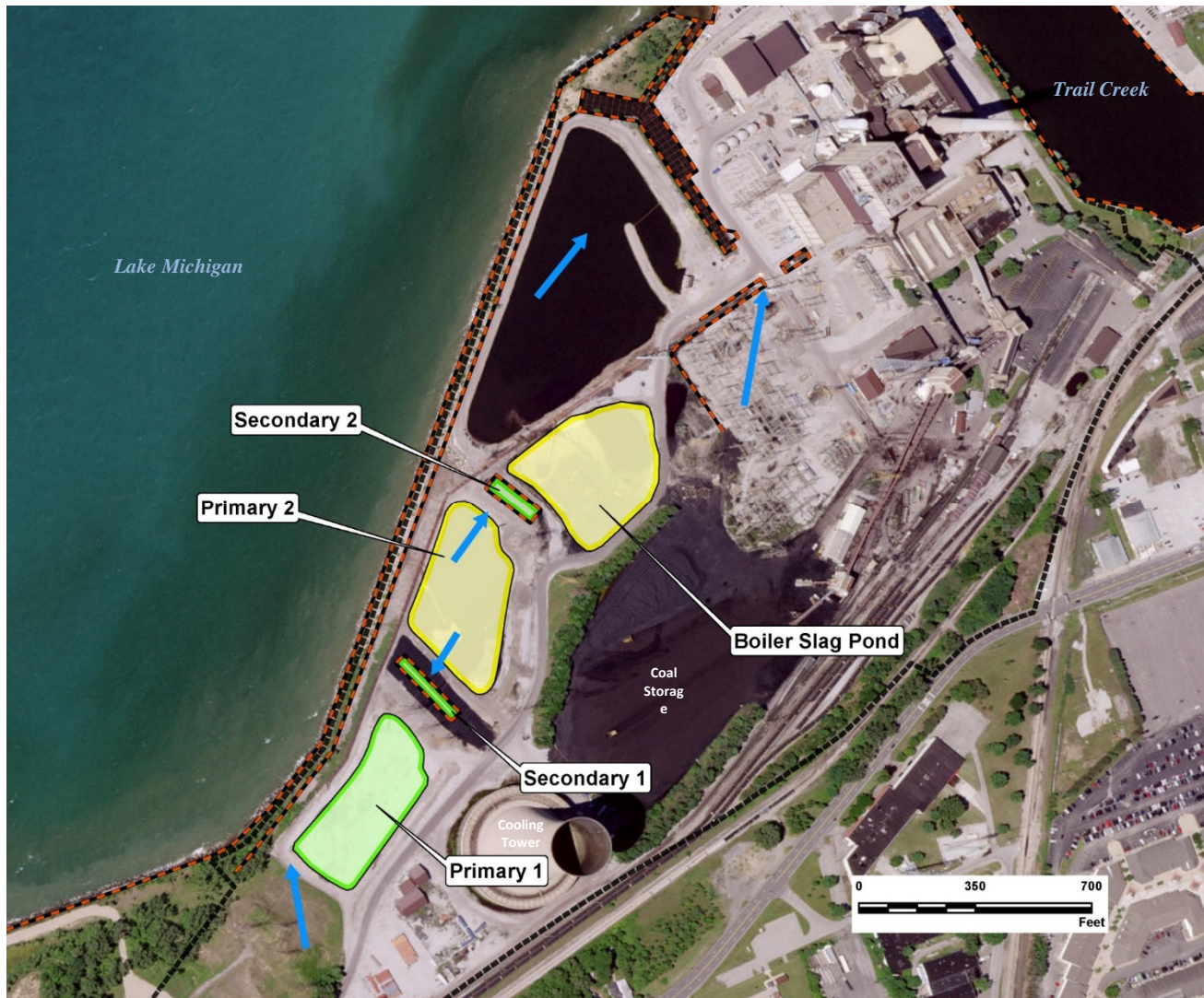


## Groundwater Monitoring Systems – Impoundments Subject to Closure






-  CCR Impoundments Included in Closure Application
-  RCRA Solid Waste Management Unit Impoundments (SWMUs) Included in Closure Application
-  CCR and RCRA Well
-  RCRA Well
-  Piezometer
-  Generalized Groundwater Flow Direction
-  Sheet Pile Walls
-  Approximate Property Line







## MCGS Groundwater Flow Conditions

-  CCR Impoundments Included in Closure Application
-  RCRA Solid Waste Management Unit Impoundments (SWMUs) Included in Closure Application
-  Generalized Groundwater Flow Direction
-  Sheet Pile Walls
-  Approximate Property Line







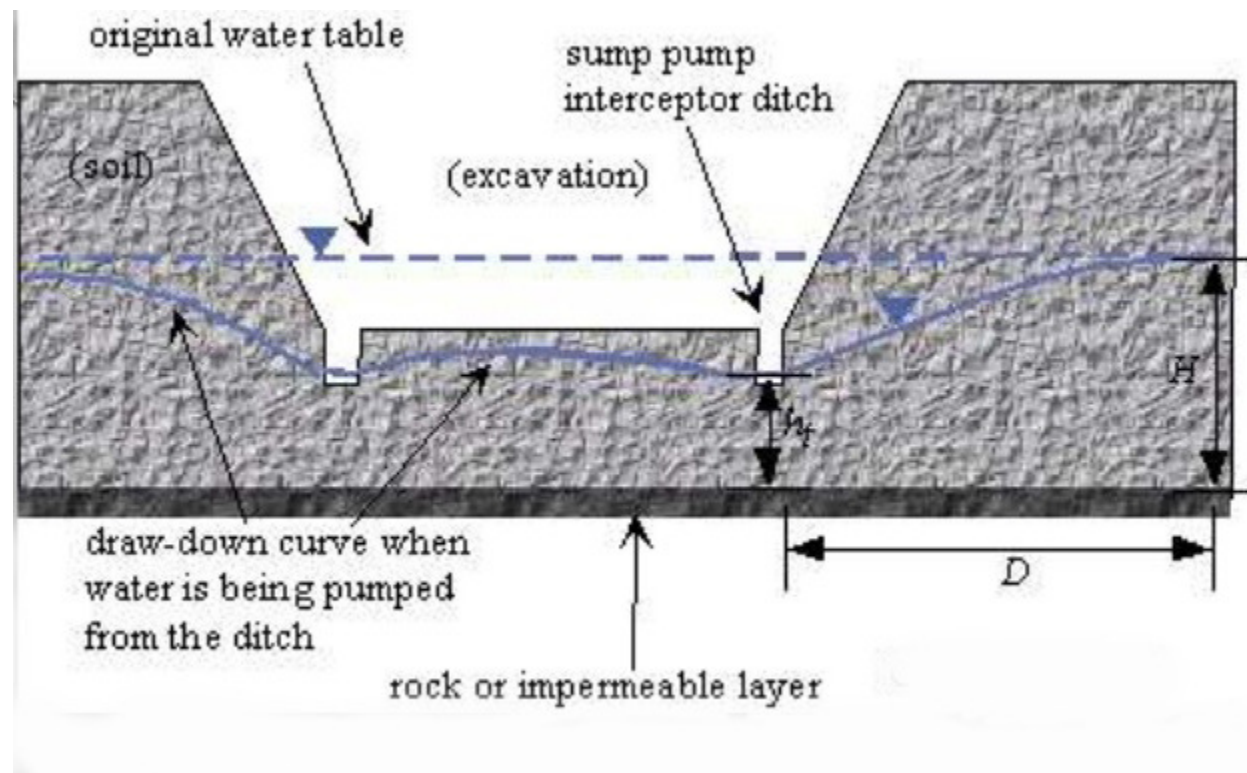
## Proposed Post-Closure Monitoring Well Network

- ▲ New Background Monitoring Well
- ◆ New Monitoring Well
- ▲ Existing Background Monitoring Well
- ◆ Existing Monitoring Well
- CCR Impoundments Included in Closure Application
- RCRA Solid Waste Management Unit Impoundments (SWMUs) Included in Closure Application
- Sheet Pile Walls
- Approximate Property Line



## Corrective Measures – Phase I Source Removal

- Removal of free water, source material and nearby pore water is expected to improve groundwater quality.



ASH WILL BE REMOVED and PLACE IN A CCR RULE COMPLIANT LANDFILL



## Corrective Measures – Phase II Monitoring

After Ash is removed, a 2-year monitoring period will be implemented to evaluate changes in groundwater:

- quality
- geochemistry
- flow patterns

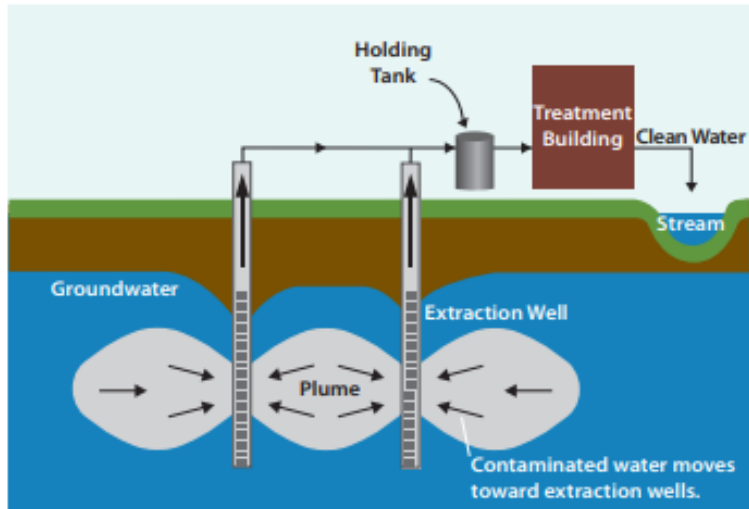
A monitoring well network was included in the Supplemental Addendum to the Closure Plan requested by IDEM.



## Monitored Natural Attenuation (MNA)

- MNA relies on demonstrated natural processes ongoing in the subsurface to achieve cleanup goals by irreversibly removing dissolved-phase inorganics from groundwater. Natural attenuation includes physical, chemical and biological processes.
- Must reduce the mass, toxicity, mobility, volume, or concentration of contaminants.
- Must demonstrate that risk reduction in ground water is realized through the sorption of the inorganic contaminant onto aquifer solids in combination with the long-term stability of the immobilized contaminant to resist remobilization due to changes in ground-water chemistry.

# Groundwater Pump & Treat



Example of a Pump and Treat System with Two Extraction Wells.



Groundwater Pumping Wells



Groundwater Treatment Building



Indoor Treatment Facility



Outdoor Treatment Facility

Source: A Citizen's Guide to Pump & Treat, EPA EPA 542-F-12-017, September 2012

# Permeable Reactive Barrier (PRB)



*Figure 2-7  
PRB illustration showing downgradient PRB, keyed into lower confining unit, and change in concentration as plume passes through PRB media*

**Source:** Cost and Application Considerations for Remediation Technologies at Coal Combustion Residual Landfills and Impoundments. EPRI 3002012313 Final Report, March 2018.