

## **Comments from Indiana Coal Ash Stakeholders:**

### **Addressing the proposed phase one amendments to the national minimum criteria for disposal of coal combustion residuals from electric utilities**

**Docket number EPA-HQ-OLEM-2017-0286**

**April 30, 2018**

These comments include the concerns of the Hoosier Environmental Council, Hoosier Chapter of the Sierra Club, Citizens Action Coalition, and the Lower Ohio River Waterkeeper in response to the EPA's proposed revisions to the 2015 Coal Combustion Residuals Rule (or CCR Rule) as described in the Federal Register, volume 83, March 15, 2018, at 11584. We appreciate the opportunity to submit comments.

In the Federal Register, the EPA promotes the proposed revisions to the 2015 CCR Rule as flexibility for states in regulating coal ash. There is already flexibility to regulate in whatever way the states see fit as long as they are at least as stringent as the federal minima in the 2015 CCR Rule.

Prior to the 2015 rule, the states had complete flexibility with no federal regulations of any kind related to coal ash disposal. That flexibility was disastrous for Indiana. The state had no regulations of coal ash impoundments, how they were built, where they were built, or how they protected groundwater. The utilities in Indiana were free to create impoundments in the least expensive manner, and there was pressure from the Indiana Utility Regulatory Commission to keep electricity rates as low as possible. As a result, Indiana power plants had an incentive to build coal ash disposal units right next to the plant, and since the plants were built near a water source, all but three of Indiana's power plants have coal ash disposal in the 100-year floodplain. The floodplain maps for Indiana's coal ash disposal units are included as Appendix C<sup>1</sup>. Only 7 out of 86 Indiana coal ash impoundments were built with liners<sup>2</sup>, and all but one impoundment contaminated the underlying groundwater<sup>3</sup>. Many of the Indiana impoundments were built over shallow sand and gravel aquifers, and at four power plants - Cayuga, Gallagher, Gibson, and Wabash - the ash sits in the groundwater year-round because the bottom of the ash is below the water table<sup>4</sup>. This disastrous situation is the result of decades of flexibility for the

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<sup>1</sup> FEMA Flood Rate Insurance Maps, 20170320, accessed at [maps.Indiana.edu](http://maps.Indiana.edu)

<sup>2</sup> U.S. EPA Coal Combustion Residuals Impoundment Assessment Reports for Indiana Electric Utilities, and Summary Table for Impoundment Reports

<sup>3</sup> 2017 annual groundwater monitoring reports filed for Indiana coal-fired power plants by Duke Energy, Indianapolis Power and Light, Indiana-Kentucky Electric Corp, Indiana-Michigan Power, Hoosier Energy, Northern Indiana Public Service Company, and Vectren. There are a total of 30 reports all of which have been submitted to the docket.

<sup>4</sup> Duke Gallagher Generating Station Ash Pond System Closure & Post Closure Plan, December 16, 2016; Duke Cayuga Generating Station Ash Pond System Modified Closure & Post Closure Plan, December 16, 2016; Duke Wabash River

state. Therefore, the federal minima established in the 2015 CCR Rule are essential for safe disposal of coal ash in Indiana going into the future.

### **Amendments associated with the judicial remand**

We agree with the proposed revision that will add boron to the list of constituents in Appendix IV of 40 CFR part 257. Boron is a key indicator of groundwater contamination at the majority of Indiana's coal ash disposal sites. At 11 of the 15 Indiana power plants that issued annual groundwater monitoring reports for 2017, or 73%, boron was present in the groundwater at concentrations above the EPA's Drinking Water Health Advisory of 3 mg/L. At 9 of them (60%) boron was 3-times the health advisory or more.

Boron is both sensitive and specific for coal ash impact in groundwater in Indiana. The Indiana wells unimpacted by coal ash that we are aware of that have been tested have concentrations of boron below 0.300 mg/L, which is 4 orders of magnitude below the Drinking Water Health Advisory. A study of 24 wells in Marion County, Indiana, that were at least 1.25 miles away from known coal ash disposal showed a range of boron concentrations of 0.020 - 0.297 mg/L. Boron exceeded 0.200 mg/L only 12.5% of the time<sup>5</sup>.

### **Amendments listed as associated with the WIIN Act**

The Water Infrastructure Improvements for the Nation Act or WIIN Act<sup>6</sup> allowed states to create their own programs to regulate disposal of coal combustion residuals (CCR) as long as their programs were at least as stringent as the 2015 CCR Rule<sup>7</sup>. It also gave the EPA authority to enforce the 2015 CCR Rule. It did not authorize the EPA to reduce the requirements in the 2015 CCR Rule.

In the Federal Register, Volume 83, Number 51 for March 15, 2018, starting at page 11584, the EPA lists reductions in requirements and relaxation of standards for the 2015 CCR Rule that were not part of the WIIN Act, but lists many of them under the heading "Amendments associated with the WIIN Act". With this proposal the EPA is over-reaching far beyond the Congressional intent.

### **Groundwater protection standards**

Since Indiana is experiencing extensive groundwater contamination by coal ash, the state needs strong groundwater protection standards, and not a weakening of the 2015 standards as proposed. Fifteen Indiana power plants subject to the 2015 CCR Rule released groundwater monitoring reports in March 2018. The signatory organizations reviewed all of the reports from those power plants and compared the monitoring results from coal ash sites to existing health-based standards: drinking water Maximum Contaminant Levels

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Generating Station Ash Pond System Closure & Post Closure Plan, December 16, 2016; Duke Gibson Generating Station North and South Ash Basin System Modified Closure & Post Closure Plans, December 16, 2016

<sup>5</sup> Marion County Public Health Department, Sunshine Gardens and 1.25 Mile Radius Surrounding the Indianapolis Power and Light Harding Street Coal Ash Impoundments Well Survey, 2014.

<sup>6</sup> Water Infrastructure Improvements for the Nation Act of 2016, Pub. L. No. 114-322

<sup>7</sup> 40 C.F.R. § 257

(MCL), EPA Drinking Water Health Advisories<sup>8</sup>, or EPA Tapwater Screening Levels<sup>9</sup>. All 15 power plants have contamination of the groundwater so that it exceeds one or more of those health-based standards. At all of the Indiana power plants with monitoring, the groundwater has been rendered unfit for human consumption. Of the 15 power plants,

- 80% have contamination with molybdenum, half of which exceed the molybdenum health advisory by 20-fold or more
- 80% have contamination with sulfate, the highest being 30 times the health advisory
- 73% have contamination with boron, 80% of those exceed the health advisory for boron by 3-fold or more
- Two-thirds have arsenic levels that exceed the drinking water standard by 2-fold or more
- Half of them have contamination with lithium
- One third have contamination with cobalt and one third with radioactive radium
- On average, each power plant has 5 contaminants that exceed safe levels (Table 1)

***Table 1. Contaminants exceeding a drinking water or health standard in groundwater monitoring at Indiana coal ash disposal sites***

	# Groundwater Reports	# of GW contaminants exceeding a drinking water or health standard	Contaminants exceeding a drinking water or health standard
Bailly	4	4	As, Cd, Li, Mo
Brown	3	7	As, B, Co, Li, Mo, Ra, sulfate
Cayuga	4	6	Sb, As, B, Pb, Mo, sulfate
Clifty Creek	1	7	As, B, Co, Li, Mo, Ra, sulfate
Culley	1	7	As, B, Co, Pb, Li, Mo, sulfate
Eagle Valley	1	5	As, B, Pb, Mo, sulfate
Gallagher	3	5	As, B, Pb, Mo, sulfate
Gibson	2	5	As, B, Pb, Mo, sulfate
Harding Street	1	6	Sb, As, B, Li, Mo, sulfate
Merom	1	1	Pb
Michigan City	1	4	As, Li, sulfate, Tl
Petersburg	1	9	Sb, As, B, Cd, Co, Li, Mo, Ra, sulfate
Rockport	2	2	As, Ra
Schahfer	3	6	As, B, Li, Mo, Ra, sulfate
Wabash	1	7	As, B, Co, Pb, Li, Mo, sulfate

<sup>8</sup> U.S. EPA, 2012 Edition of the Drinking Water Standards and Health Advisories

<sup>9</sup> U.S.EPA Regional Screening Level (RSL) Residential Tapwater Table, November 2017

See Appendix A for a table with details of the groundwater exceedances. It shows the ranges of concentrations above the standard or health advisory that were detected in groundwater at each coal ash disposal site.

We already have four locations in Indiana where the utilities are replacing drinking water for people whose wells were contaminated by coal ash: more than 260 private wells in the town of Pines<sup>10</sup>, private wells near Duke Energy's Cayuga and Gibson power plants<sup>11</sup>, and private wells near the Noblesville power plant<sup>12</sup>. There may be more when the rest of the nearby private wells are tested.

Indiana's registry of private wells, housed with the Indiana Department of Natural Resources<sup>13</sup>, lists private wells registered with the state. It is not complete and some of the wells listed may no longer be in use. However, it is the best data available for locating private wells in Indiana. In the well registry we identified 487 private wells around the state that are within one mile of coal ash (Table 2), many of which have not been tested for coal ash contaminants, yet. Given the groundwater contamination already documented at Indiana's coal ash disposal sites, requirements for groundwater protection must be maintained and not weakened.

**Table 4. Private wells identified within one mile of coal ash disposal**

<b>Power Plant</b>	<b>Private wells within 1 mile</b>
Bailly	67
Brown	0
Cayuga	3
Clifty Creek	0
Culley	14
Eagle Valley	9
Edwardsport	6
Gallagher	9
Harding Street	216
Merom	4
Michigan City	10
Dean H. Mitchell	1
Petersburg	9
Frank E. Ratts	5
Rockport	3
Schahfer	61
Tanner's Creek	2
Wabash	68
<b>TOTAL</b>	<b>487</b>

<sup>10</sup> U.S. EPA, Superfund Site: Town of Pines Groundwater Plume

<sup>11</sup> Bowman, S. "These Toxic coal Ash Pits are Leaking into Indiana's Water", Indianapolis Star, 24 Sept 2017

<sup>12</sup> Personal communication from Citizens Action Coalition

<sup>13</sup> Indiana Department of Natural Resources, Water Well Record Database, <https://www.in.gov/dnr/water/3595.htm>

## Groundwater protection standards - alternative standards

In this rulemaking, the EPA is considering revising how groundwater is protected at coal ash disposal sites, in particular, the groundwater protection standards, which are the concentrations of contaminants that will trigger corrective action.

This rulemaking proposes to allow either a state agency or a technical expert paid by the industry to calculate 'alternative groundwater protection standards' for constituents that do not have a Maximum Contaminant Level (MCL) under the Safe Drinking Water Act. From a health perspective, calculating alternative standards in different states or at different power plants makes no sense. People in one location don't have different physiologic reactions to these chemicals than people at another location. The chemicals have the same toxic properties regardless of location.

If technical experts are hired by the utilities to calculate alternative groundwater protection standards, they enter a situation that is fraught with conflict of interest. In the 2015 rule, EPA correctly determined that allowing alternative groundwater protection standards to be set by the utility was inappropriate because "it was unlikely that a facility would have the scientific expertise necessary to conduct a risk assessment, and was too susceptible to potential abuse"<sup>14</sup>.

Indiana could have implemented its own groundwater protection standards for coal ash sites during all the decades prior to 2015 and chose not to. Now with encouragement to write 'alternative' standards from EPA, the Indiana Department of Environmental Management (IDEM) would be faced with a daunting technical process. On top of that, IDEM would face pressure from the Indiana utilities of the sort they have always faced when it comes to environmental regulation. In Indiana, the electric utilities wield such a degree of political influence that we are concerned that this provision could be abused to the detriment of Indiana's water resources. We are strongly opposed to allowing states and utilities to establish alternative groundwater protection standards. The people of Indiana will be better served by national minima for groundwater at coal ash disposal sites as established in the 2015 CCR Rule.

Calculating 'alternative' groundwater protection standards is also an unnecessary expenditure of time, effort and expense. The US already has standards that would be protective of human health. We urge the EPA to use the EPA's own Drinking Water Standards and Health Advisories<sup>15</sup> and the Tapwater Screening Levels<sup>16</sup> for groundwater protection standards. These are health based levels that have been carefully derived in a manner consistent with Agency guidelines using scientifically valid studies by scientists who do not have a conflict of interest. Groundwater protection standards set in this way would achieve the statutory standard: "no reasonable probability of adverse effects on health or the environment".

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<sup>14</sup> 80 Federal Register at 21405 (April 17, 2015)

<sup>15</sup> U.S. EPA, 2012 Edition of the Drinking Water Standards and Health Advisories

<sup>16</sup> U.S.EPA Regional Screening Level (RSL) Residential Tapwater Table, November 2017

## Groundwater protection standards - background

In some situations background concentrations are used as the groundwater protection standard<sup>17</sup>. As the agency considers revision of groundwater protection standards, including continued use of background levels, we urge revision of the definition of background so that groundwater only qualifies as background if it is not impacted by coal ash.

Ten out of Indiana's 15 power plants subject to the CCR Rule have wells designated 'background' that are impacted by coal ash. All ten have background wells immediately adjacent to coal ash landfills or ponds. Nine of the ten have typical coal ash contaminants in the background wells at concentrations that exceed drinking water standards or health advisories, and seven of them have water elevations downgradient or level with the water elevations in monitoring wells (see Appendix B). Only 5 of the 15 power plants are using background wells that appear to be entirely appropriate with locations sufficiently distant from coal ash, lacking contamination, and having water elevations upgradient from the monitoring wells.

There are wells in Indiana designated background that have boron 7 times the Drinking Water Health Advisory, molybdenum at 5 times, and sulfate 3 times the Health Advisory, and lithium at 3 times the Tapwater Screening Level. Indiana even has wells called background that were drilled through 7 feet of coal ash, but because that ash was called "fill" and wasn't in a designated "coal ash unit", the well met the current definition of "background"<sup>18</sup>.

The current definition of background at 40 CFR 257.91(a)(1) is "... groundwater that has not been affected by leakage from a CCR unit". The problem in the definition is the phrase 'leakage from a CCR unit'. We recommend changing 40 CFR 257.91(a)(1) to read "... groundwater that has not been affected by CCR." There is a tremendous amount of coal ash at power plants that is not in CCR units, but is just as likely to contaminate groundwater. Indiana's power plants, and likely power plants in other locations, have used CCR as fill on their properties for decades. The utilities' properties also have old CCR disposal units that have not been used since long before the 2015 CCR Rule. These old CCR disposal units and areas of CCR fill must be avoided when locating wells for measuring background concentrations of coal ash contaminants in groundwater.

If background levels are still going to be used as groundwater protection standards, then the definition of background must be changed so that groundwater only qualifies as background if it is not impacted by coal ash, regardless of whether that ash is in a disposal unit, an old disposal unit, or an area of fill.

## Groundwater protection standards - potential receptors

This rulemaking proposes to allow calculation of groundwater protection standards for "potential receptors" instead of for the "human population" (page 11599 of the Federal Register notice on March 15, 2018). This means the industry could claim that there are no current 'receptors', meaning no one currently using that groundwater for drinking water, so they wouldn't need as protective a groundwater standard.

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<sup>17</sup> 40 C.F.R. § 257.95(h)

<sup>18</sup> Sargent & Lundy (July 28, 2016). Indianapolis Power and Light Harding Street Generating Station Ash Pond System Closure and Post-Closure Plan, page 130 soil boring log for MW-4s.

We urge the EPA not to use the ‘potential receptors’ language and to keep the requirement for health-based standards at all coal ash disposal sites regardless of how the local groundwater is currently being used. If coal ash has contaminated the groundwater so that it is unfit for human consumption, there should be consequences. Even if there is an aquifer that no one is currently drinking from, we should not just write off that resource. It is not possible to predict whether that aquifer will be needed in the future. Coal ash is a non-biodegradable material that can go on contaminating groundwater for hundreds of years. It is irresponsible to leave that contamination behind for future generations.

### Groundwater at unregulated disposal sites

The 2015 CCR Rule was written to exempt certain power plants and coal ash disposal sites that had ceased operation. There are five Indiana power plants that are exempt: Noblesville, Dean H. Mitchell, Tanner’s Creek, Warrick, and Frank E. Ratts. Individual disposal units at some other power plants are also exempt, for example the North Ash Pond at the Wabash River Generating Station.

The coal ash at these exempt sites is just as likely to contaminate groundwater as the coal ash at the regulated sites. In the 2017 annual groundwater monitoring reports submitted by 15 Indiana power plants, it was clear that every location that has coal ash without a liner under it has contaminated groundwater. In fact, groundwater monitoring is occurring at one of the exempt power plants, Frank E. Ratts, under other regulations, and the groundwater there is contaminated with boron as high as 19.2 mg/L, manganese as high as 8.58, and sulfate as high as 1360 mg/L<sup>19</sup> confirming that the unregulated sites also threaten groundwater. Approximately one fourth of the coal ash disposal sites in Indiana are currently exempt from the CCR Rule, so Indiana has a significant number of threatened groundwater resources going unaddressed. The signatory organizations feel that every coal ash disposal site should be required to monitor groundwater and take corrective action if there is contamination. While the rule is undergoing revision, we urge EPA to extend protection of groundwater to all coal ash disposal sites.

### Modification to corrective action remedy

This part of the current EPA proposal would allow state directors to decide that cleanup of coal ash contaminated groundwater is not required under certain circumstances. We are opposed to this provision. Indiana had the flexibility to make this type of decision prior to 2015, and it chose to allow coal ash contamination of groundwater to proceed unchecked at coal ash impoundments. The 2015 CCR Rule set nationwide criteria for when corrective action is needed, and those criteria must be maintained.

This proposed revision would allow a decision not to require cleanup if “the groundwater is contaminated by multiple sources”<sup>20</sup>. We have already seen situations in Indiana where coal ash fill is referred to as a different source of groundwater contamination just because it was not within the boundaries of a designated landfill or impoundment. At the Harding Street Generating Station, there is a well designated background despite the fact that it was installed by drilling through 7 feet of overlying coal ash fill. Since that ash was not in a coal ash unit

<sup>19</sup> 2010 - 2017 Semi Annual Groundwater Data and Statistics, Hoosier Energy REC: Frank E Ratts Generating Station

<sup>20</sup> 83 Federal Register at 11600 (March 15, 2018)

(an impoundment or landfill), the utility is claiming that the groundwater at that site represents background. The contamination with typical coal ash contaminants in that well is claimed to be from another source, even though that other source is the utility's own coal ash.

There has been extensive use of coal ash as fill on the power plant properties in Indiana, and many Indiana power plants have abandoned CCR disposal units, as well, so it will be possible at many of them to point to groundwater contamination from fill or abandoned disposal units and claim it did not come from the coal ash landfill or impoundment, i.e. that it came from another source. We are concerned that this will serve as a way of exempting many Indiana sites from corrective action for groundwater cleanup and that adds to our opposition to this proposed revision.

This proposed revision would also allow a decision not to require cleanup if “the contaminated groundwater is not a current or potential source of drinking water”<sup>21</sup>. We urge the EPA not to use this provision and to keep the requirement for corrective action where there has been groundwater contamination regardless of how the local groundwater is currently being used. If coal ash has contaminated the groundwater so that it is unfit for human consumption, there should be consequences. Even if there is an aquifer that no one is currently drinking from, we should not just write off that resource. It is not possible to predict whether that aquifer will be needed in the future. Coal ash is a non-biodegradable material that can go on contaminating groundwater for hundreds of years. It is irresponsible to leave that contamination behind for future generations.

Where there is contamination of groundwater by coal ash beyond Drinking Water Standards or Health Advisories or beyond EPA's Tapwater Screening Levels, we are opposed to the states, or EPA as the permitting authority in a nonparticipating state, or a facility directly implementing the requirements and subject to EPA oversight having the discretion not to require or perform source control measures, including closure of impoundments or landfills. Instead, the requirements for corrective action as written in the 2015 CCR Rule should be retained.

### Length of post-closure care period

This proposal would revise 40 CFR 257.104 of the 2015 CCR Rule to allow state agency directors to shorten the period of required post-closure care for coal ash units. The period is currently set at 30 years. To shorten it the state agency director would be required to determine that the shortened period would be adequate to protect human health and the environment and the proposed revision directs them to take into consideration certain site-specific conditions.

In Indiana, the electric utilities wield such a degree of political influence and our state agency director is a political appointee that we are concerned that this provision could be abused to the detriment of communities near coal ash. Coal ash is a non-biodegradable material with the potential to contaminate water in perpetuity, and some coal ash contaminants can move slowly into groundwater in some soil conditions, so detection of a release might not happen until well into the closure period. Most of Indiana's coal ash disposal sites were built more than 30 years ago, many are more than 50 years old, so 30 years is not a long time to maintain safe

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<sup>21</sup> *ibid*



functioning of the disposal unit. Even a 30-year post-closure period is flawed, as described by geologist Mark Hutson:

Over time, the processes of cap erosion and decomposition, animal burrowing, and/or anthropogenic activities will invariably result in increased infiltration of water into the waste and leaching of contamination into groundwater. Even more problematic is that the monitoring program may have been discontinued by the time these processes manifest themselves in deteriorating water quality<sup>22</sup>.

For these reasons, we oppose the proposed change and support the retention of the 30-year nation-wide minimum for post-closure care.

### Requiring utilities to respond immediately to coal ash spills

EPA is proposing to change the release response requirements in § 257.90(d) and add new language in § 257.99.

This existing rule at § 257.90(d) is critically important and should be retained. This requirement serves to limit the extent of damage from a release, including keeping the spill or release from causing direct harm to people, property, public health and the environment. In the event a spill or release is likely to leave the owner or operator's property, it is essential that the measures taken include immediately notifying local emergency responders – police, fire and public health departments – along with the appropriate state agencies, which in Indiana would include the Department of Environmental Management, the Department of Natural Resources, and the Department of Homeland Security.

Besides the well-known coal ash spill catastrophes in Kingston, Tennessee, and at the Dan River power plant, North Carolina, there were two major spills in Indiana in 2007 and 2008. In both instances, the same embankment at Indianapolis Power & Light's Eagle Valley power plant failed (the second time was a failure of the repair work after the first spill). A total of 60 million gallons of coal ash sludge was released to the West Fork of the White River<sup>23</sup>. The spilled ash was never recovered<sup>24</sup>.

The inundation maps required by the CCR rule provide a clear indication of the possible scope and scale of an uncontrolled release of coal ash from one or more of Indiana's 86 coal ash impoundments<sup>25</sup>. This prospect of dramatic injury and harm requires nothing less than an immediate and comprehensive response from an impoundment owner.

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<sup>22</sup> Geo-Hydro, Inc. Review of Ash Pond System Closure and Post-Closure Plan, Indianapolis Power and Light Company Harding Street Generating Station. Dec 5, 2016

<sup>23</sup> Commissioner of Indiana Department of Environmental Management v. Indianapolis Power & Light Co., Case No. 2007-16780-W, 2008-17593-W, Agreed Order, Indiana Department of Environmental Management, April 18, 2008

<sup>24</sup> Response to U.S. EPA 104(e) Information Request to Indianapolis Power & Light Company ("IPL") - Eagle Valley Generating Station, Indianapolis Power & Light, May 13, 2009

<sup>25</sup> For example, see Wabash River Inundation Maps, Duke Energy Wabash River Generating Station, January 25, 2018, <https://www.duke-energy.com/media/pdfs/our-company/ash-management/wr-inundation-map.pdf?la=en>

## Requirement to close coal ash ponds that fail safety standards

EPA is seeking comment on whether a State or EPA as the permitting authority in a nonparticipating state, or a facility directly implementing the requirements of this rule and subject to EPA oversight and public notice, should have discretion not to require or perform source control measures, including closure, (as triggered by § 257.101(a)–(c)) in certain situations, e.g., where there is no reasonable probability of adverse effect to human health or the environment. This proposal would include discretion to waive the requirement in § 257.101 (b)(2) to close a surface impoundment or landfill if the facility fails to comply with the safety standards.

Compliance with the CCR rule’s vital safety standards is essential to protect public safety and the environment, and to avoid catastrophic events like that at Kingston, Tennessee. In Indiana, several coal ash surface impoundments have been identified as failing the CCR rule structural safety standards. For example, at Duke’s Cayuga Generating Station coal ash ponds, Duke’s own consultants found that the dikes for the lined ash disposal area and primary ash settling pond were well below the acceptable factor of safety for liquefaction risk<sup>26</sup>. At Duke’s Gibson Generating Station, the assessment for the dikes for the north ash pond revealed these dikes to be well below the liquefaction factor of safety as well<sup>27</sup>. The primary pond at Duke’s Gallagher Generating Station also does not achieve the minimum factor of safety<sup>28</sup>. Another facility that does not achieve minimum factors of safety is IPL’s Petersburg Generating Station’s ash ponds<sup>29</sup>. We therefore urge EPA to retain the existing requirements.

## Allowing coal ash dumps to continue to operate in dangerous locations

EPA is proposing alternative, risk-based location restrictions in lieu of the existing location restrictions in § 257.60- 257.64. EPA is also proposing to delay the compliance deadline of October 17, 2018 for the location restrictions.

The signatory organizations object to both proposed changes and urge EPA to keep the existing location restrictions and compliance deadline. The specific location restrictions established in § 257.60 are intended to reduce or eliminate the likelihood of coal ash coming into contact with surface or groundwater, and thus prevent the contamination that results when water interacts with coal ash. The restrictions are common sense requirements: making sure the ash is fully separated from the top of the underlying groundwater, with no hydraulic connection; keeping coal ash out of wetlands; keeping coal ash sites away from fault zones and out of seismic impact zones; and not locating ash impoundments and landfills in other unstable areas.

In Indiana, there is ample evidence that demonstrates that poor siting of coal ash impoundments and landfills creates public safety risks and causes water contamination. For example, at numerous sites including Duke

<sup>26</sup> See [https://www.duke-energy.com/\\_media/pdfs/our-company/ash-management/ccr-cay-safetyfactor-lad.pdf?la=en](https://www.duke-energy.com/_media/pdfs/our-company/ash-management/ccr-cay-safetyfactor-lad.pdf?la=en), at

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<sup>27</sup> See [https://www.duke-energy.com/\\_media/pdfs/our-company/ash-management/ccr-gib-safetyfactor-nap.pdf?la=en](https://www.duke-energy.com/_media/pdfs/our-company/ash-management/ccr-gib-safetyfactor-nap.pdf?la=en), at

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<sup>28</sup> See [https://www.duke-energy.com/\\_media/pdfs/our-company/ash-management/ccr-gal-safetyfactor-pp.pdf?la=en](https://www.duke-energy.com/_media/pdfs/our-company/ash-management/ccr-gal-safetyfactor-pp.pdf?la=en)

<sup>29</sup> See [http://s2.q4cdn.com/025921988/files/doc\\_downloads/impoundment/Safety-Factor-Assessment.pdf](http://s2.q4cdn.com/025921988/files/doc_downloads/impoundment/Safety-Factor-Assessment.pdf)

Energy's Gallagher, Cayuga, Gibson and Wabash River power plants, coal ash in unlined impoundments adjacent to major waterways is sitting in the underlying aquifer<sup>30</sup>. At other sites, like IPL's Harding Street Generating Station, the ash is less than two feet above the top of the underlying groundwater and vulnerable to resaturation as the aquifer rises and falls due to water level fluctuations in the adjacent White River<sup>31</sup>. Duke Energy's Gibson Generating Station coal ash impoundments are located in a seismic impact zone—with a hazard rating of 30% to 40% of g<sup>32</sup>. In September 2017, there were two seismic events reported, with a 3.8 magnitude earthquake felt at the facility<sup>33, 34</sup>. Most of the coal ash impoundments and landfills in Indiana are located in or directly adjacent to floodplains (see Appendix C), which should be considered unstable areas given the frequency of significant flood events which inundate these floodplains<sup>35</sup>.

Disposing of coal ash in the floodplain is also risky because Indiana rivers are susceptible to significant shifts in their courses over time. In 2013 the US Geological Survey published a report on channel migration rates for 38 of the largest streams in Indiana<sup>36</sup> that shows that rivers in west-central and east-central Indiana have had significant channel migration in recent years, particularly the lower Wabash River and lower White River which had among the highest migration rates. The lower Wabash and lower White River are home to coal ash disposal units at six major power plants. Where coal ash is disposed of adjacent to rivers, channel migration could erode into the ash over time causing release of the ash into the river. The image below illustrates channel migration. It is from the cover of the USGS report, and shows migration of the White River near Centerton, IN. The blue arrows point to utility poles.

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<sup>30</sup> Duke Gallagher Generating Station Ash Pond System Closure & Post Closure Plan, December 16, 2016; Duke Cayuga Generating Station Ash Pond System Modified Closure & Post Closure Plan, December 16, 2016; Duke Wabash River Generating Station Ash Pond System Closure & Post Closure Plan, December 16, 2016; Duke Gibson Generating Station North and South Ash Basin System Modified Closure & Post Closure Plans, December 16, 2016

<sup>31</sup> ATC, CCR Annual Groundwater Monitoring and Corrective Action Report, Indianapolis Power & Light Company, Harding Street Generating Station, January 31, 2018; Sargent & Lundy (July 28, 2016). Indianapolis Power and Light Harding Street Generating Station Ash Pond System Closure and Post-Closure Plan, page 25.

<sup>32</sup> U.S. Geological Survey, 2014 Seismic Hazard Map, Indiana, <https://earthquake.usgs.gov/earthquakes/byregion/indiana-haz.php>

<sup>33</sup> [https://www.duke-energy.com/\\_/media/pdfs/our-company/ash-management/eap/gib-eap-lvl-003-091017.pdf?la=en](https://www.duke-energy.com/_/media/pdfs/our-company/ash-management/eap/gib-eap-lvl-003-091017.pdf?la=en)

<sup>34</sup> [https://www.duke-energy.com/\\_/media/pdfs/our-company/ash-management/eap/gib-eap-lvl-003-091917.pdf?la=en](https://www.duke-energy.com/_/media/pdfs/our-company/ash-management/eap/gib-eap-lvl-003-091917.pdf?la=en)

<sup>35</sup> Indiana Coal Ash Disposal in the 100-year floodplain, unpublished spreadsheet, Hoosier Environmental Council, April 2018

<sup>36</sup> US Geological Survey, *Recent (circa 1998 to 2011) Channel-Migration Rates of Selected Streams in Indiana*, Report 2013-5168



Finally, the health and environmental risks that have been present at these sites for several decades, which are exacerbated by their inappropriate locations, will not have any greater likelihood of being adequately resolved by extension of the existing compliance deadline. Indiana’s unlined coal ash impoundments and some of the coal ash landfills are known to be causing contamination, should be closed in an expeditious manner, and the ash removed to a safe, lined landfill on high ground or recycled in an appropriate, encapsulated reuse.

### Publicly accessible CCR websites

We support the continued requirement of the CCR websites under 40 CFR 257.107 and support two of the proposed additions<sup>37</sup>: requiring posting of the discovery of non-groundwater releases, and requiring posting of the report documenting completion of the corrective action.

### Executive orders

On page 11610 of the Federal Register (Volume 83, March 15, 2018), the EPA argues that the proposed changes to the CCR Rule “will not have substantial direct effects on one or more Indian tribes” and therefore consultation with tribal governments is not required under Executive Order 13175. Representatives of the Moapa in Nevada, the Navaho in New Mexico, and the Cherokee in Oklahoma testified to EPA on April 24, 2018, about the impact of coal ash disposal on their tribes. Since this rule will alter coal ash disposal and lessen requirements for control

<sup>37</sup> 83 Federal Register at 11616

of pollution from coal ash, it would impact Indian tribes if it goes forward. Though Indiana is not home to an Indian reservation, the signatory organizations would like to lend our voices and support to US policies that treat indigenous peoples with respect and fairness, so we urge the EPA to consult with the Indian tribes whose reservations include or are near coal ash disposal in considering these proposed rule changes.

Also on page 11610 of the Federal Register notice, the EPA argues that this proposed rule revision “does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898” (the executive order on environmental justice). We disagree with EPA’s assessment. If the standards for coal ash disposal are relaxed as proposed, the native peoples listed above will be impacted, as well as minority and low income communities nation-wide. In 2016 the US Commission on Civil Rights stated that “Whether coal ash facilities are disproportionately located in low-income and minority communities depends on how the comparison is done, but the EPA did find the percentage of minorities and low income individuals living within the catchment area of coal ash disposal facilities is disproportionately high when compared to the national average.” The Commission went on to recommend, “EPA should provide technical assistance to minority, tribal, and low-income communities to help enforce the Coal Ash Rule”.

## Conclusion

The undersigned organizations appreciate the opportunity to comment on the proposed revisions to the 2015 Coal Ash Rule. We are opposed to any changes that weaken protections for groundwater or surface water, reduce structural or safety requirements, allow coal ash disposal in hazardous locations, reduce post-closure care, reduce spill response requirements, or reduce transparency. We support inclusion of boron in Appendix IV of 40 CFR 257, revision of the definition of background, inclusion of all coal ash disposal sites in groundwater protection requirements, consultation with tribal governments, and consideration of environmental justice in the regulation of coal ash. Thank you for your consideration of the concerns raised in these comments.

Sincerely,

Indra Frank, MD, MPH  
Director of Environmental Health and Water Policy  
Hoosier Environmental Council

Tim Maloney  
Senior Policy Director  
Hoosier Environmental Council

Jason Flickner  
Director and Waterkeeper  
Lower Ohio River Waterkeeper

Richard Hill  
Chair, Hoosier Chapter Sierra Club

Kerwin Olson  
Executive Director  
Citizens Action Coalition

## Appendix A

Groundwater contamination at Indiana coal ash impoundments.

The table below was compiled from the Indiana utilities' 2017 annual groundwater monitoring reports. Concentrations are in mg/L. Ranges are listed for the results that exceeded a safe drinking water or health standard in the downgradient wells. The drinking water or health standard for each chemical is in parenthesis after the chemical name.

References for Appendix A:

1. Golder Associates (2018): CCR Annual Groundwater Monitoring and Corrective Action Report: NIPSCO Bailly Boiler Slag Pond
2. Golder Associates (2018): CCR Annual Groundwater Monitoring and Corrective Action Report: NIPSCO Bailly Primary Settling Pond 1 (Primary 1)
3. Golder Associates (2018): CCR Annual Groundwater Monitoring and Corrective Action Report: NIPSCO Bailly Primary Settling Pond 2 (Primary 2)
4. Golder Associates (2018): CCR Annual Groundwater Monitoring and Corrective Action Report: NIPSCO Bailly Secondary Settling Pond 1
5. Haley & Aldrich (2018): 2017 Annual Groundwater Monitoring and Corrective Action Report: A.B. Brown Generating Station - Landfill
6. Haley & Aldrich (2018): 2017 Annual Groundwater Monitoring and Corrective Action Report: A.B. Brown Generating Station - Ash Pond
7. Haley & Aldrich (2018): 2017 Annual Groundwater Monitoring and Corrective Action Report: A.B. Brown Generating Station - Sedimentation Pond
8. ATC Group Services (2017). CCR Annual Groundwater Monitoring and Corrective Action Report: Cayuga Landfill RWS Type I FP #83-12 Cayuga Generating Station
9. ATC Group Services (2017). CCR Annual Groundwater Monitoring and Corrective Action Report: Lined Ash Disposal Area Cayuga Generating Station
10. ATC Group Services (2017). CCR Annual Groundwater Monitoring and Corrective Action Report: Secondary Ash Settling Pond Cayuga Generating Station
11. ATC Group Services (2017). CCR Annual Groundwater Monitoring and Corrective Action Report: Primary Ash Settling Pond Cayuga Generating Station
12. Applied Geology and Environmental Science, Inc (Jan 2018). Col Combustion residuals Regulation Groundwater Monitoring and Corrective Action Report Indiana-Kentucky Electric Corporation, Clifty Creek Station.
13. Haley & Aldrich (2018): 2017 Annual Groundwater Monitoring and Corrective Action Report: F.B. Culley Generating Station - East Ash Pond
14. ATC (2018): CCR Annual Grounwater Monitoring and Corrective Action Report: IPL Eagle Valley Generating Station
15. ATC Group Services (2018). CCR Annual Groundwater Monitoring and Corrective Action Report: Ash Pond A Gallagher Generating Station
16. ATC Group Services (2018). CCR Annual Groundwater Monitoring and Corrective Action Report: Restricted Waste Site Type I Landfill FP #22-01 Gallagher Generating Station

17. ATC Group Services (2018). CCR Annual Groundwater Monitoring and Corrective Action Report: Primary Pond Gallagher Generating Station
18. ATC Group Services (2018). CCR Annual Groundwater Monitoring and Corrective Action Report: North Ash Basin System Gibson Generating Station
19. ATC Group Services (2018). CCR Annual Groundwater Monitoring and Corrective Action Report: RWS Type I South Landfill FP# 26-06 Gibson Generating Station
20. ATC (2018): CCR Annual Grounwater Monitoring and Corrective Action Report: IPL Harding Street Generating Station
21. Golder Associates (2018): CCR Annual Groundwater Monitoring and Corrective Action Report: NIPSCO Michigan City Boiler Slag Pond
22. ATC Group Services (2018). CCR Annual Groundwater Monitoring and Corrective Action Report: Merom Generating Station - Area 3 Landfill CCR Monitoring System
23. ATC (2018): CCR Annual Grounwater Monitoring and Corrective Action Report: IPL Petersburg Generating Station
24. AEP Service Corporation (2018): Annual Groundwater Monitoring Report Indiana Michigan Power Company: Bottom Ash Pond CCR Management Units - Rockport, Indiana
25. AEP Service Corporation (2018): Annual Groundwater Monitoring Report Indiana Michigan Power Company: Landfill CCR Management Units - Rockport, Indiana
26. Golder Associates (2018): CCR Annual Groundwater Monitoring and Corrective Action Report: NIPSCO RM Schahfer Landfill Phase V and VI
27. Golder Associates (2018): Annual Groundwater Monitoring and Corrective Action Report: NIPSCO RM Schahfer CCR Management Unit Referred to as Schahfer Material Storage Runoff Basin, Metal Cleaning Waste Basin, and Drying Area
28. Golder Associates (2018): Annual Groundwater Monitoring and Corrective Action Report: NIPSCO RM Schahfer CCR Management Unit Referred to as Schahfer Waste Disposal Area
29. ATC Group Services LLC (Dec 2017) CCR Annual Groundwater Monitoring and Corrective Action Report, Ash Pond System Wabash River Generating Station



Appendix A: Groundwater monitoring at Indiana coal ash sites										
This table below was compiled from the utilities' 2017 annual groundwater monitoring reports. Concentrations are in mg/L										
Ranges are listed for the results that exceeded a safe drinking water or health standard in a downgradient well.										
The drinking water or health standard for each chemical is after the chemical name.										
	antimony 0.006 mg/L		arsenic 0.010 mg/L		boron 3.0 mg/L		cadmium 0.005 mg/L		cobalt 0.006 mg/L	
Power Plant	range	#wells	range	#wells	range	#wells	range	#wells	range	#wells
Bailly										
Boiler slag pond	No constituents exceeded drinking water or health standards									
Primary settling pond 1										
Primary settling pond 2			0.012 - 0.018	1						
Secondary settling pond							0.005 - 0.02	1		
Brown										
Ash Pond					3.4 - 16	5			0.0077 - 0.011	2
Landfill			0.011 - 0.03	2	3.4 - 5.3	1			0.0067 - 0.014	1
Sedimentation Pond			0.012 - 0.043	1						
Cayuga										
Primary ash settling pond	0.006-0.013	3			0.082-4.6	1				
Secondary ash settling pond			0.016	1						
Lined Ash Pond			0.01 - 0.016	2	3.2 - 10.4	3				
Landfill			0.015-0.017	2						
Clifty Creek			0.012 - 0.079	4	3.49 - 10.9	3			0.0009 - 0.00686	3
Culley			0.017 - 0.11	5	7.8 - 68	2			0.0061 - 0.038	6
Eagle Valley			0.0122-0.146	4	3.09-10.1	12				
Gallagher										
Ash Pond A	0.002-0.005	1	0.016-0.091	1	10.2-17.4	2				
Type 1 Landfill					7.3-16.6	3				
Primary Pond			0.026-0.046	1	8.8-21.6	2				
Gibson										
North Ash Basin Annual			0.01 -0.028	12	3.0 - 28.7	19				
South Landfill Annual			0.011 - 0.21	6						
Harding Street	0.0077 - 0.149	3	0.011 - 0.545	12	3.06 - 40.3	15				
Merom										
Area 3 landfill										
Michigan City										
Boiler slag pond 2			0.011 - 0.04	3						
Petersburg	0.0074	1	0.01 - 0.012	1	3.0 - 29	11	0.0068 - 0.018	1	0.29 - 0.50	1
Rockport										
Landfill			0.0202 - 0.0279	1						
Ashponds			0.0102 - 0.0273	8						
Schahfer										
Landfill			0.011 - 0.12	3	3.2 - 26	8				
Surface impoundments			0.011 - 0.012	2	3.2 - 25	7				
Waste Disposal Area			0.01 - 0.039	3	3 - 3.4	1				
Wabash			0.01 - 0.016	2	3 - 47.4	20			0.0097 (1)	1



APPENDIX A: Groundwater monitoring at Indiana coal ash sites												
This table below was compiled from the utilities' 2017 annual groundwater monitoring reports. Concentrations are in mg/L												
Ranges are listed for the results that exceeded a safe drinking water or health standard in a downgradient well.												
The drinking water or health standard for each chemical is after the chemical name.												
	lead 0.015 mg/L		lithium 0.04 mg/L		molybdenum 0.08 mg/L		Radium 226 + 228 5 pCi/L		sulfate 500 mg/L		thallium 0.002 mg/L	
Power Plant	range	#wells	range	#wells	range	#wells	range	#wells	range	#wells	range	#wells
Bailly												
Boiler slag pond												
Primary settling pond 1					0.11	2						
Primary settling pond 2			0.063 - 0.077	1	0.08 - 0.17	1						
Secondary settling pond			0.049 - 0.063	1	0.081 - 0.091	1						
Brown												
Ash Pond			0.054 - 0.067	3	0.04 - 1.8	4	7.93	1	880 - 6900	6		
Landfill			0.078 - 0.012	1			0.12 - 8.14	1	580 - 15,000	6		
Sedimentation Pond												
Cayuga												
Primary ash settling pond												
Secondary ash settling pond					0.11-0.22	2			839-1380	1		
Lined Ash Pond					0.094 - 0.14	1						
Landfill	0.024-0.043	3										
Clifty Creek			0.001 - 0.086	1	0.003 - 0.150	2	0.02 - 15.3	3				
Culley	0.016 - 0.051	1	0.099 - 0.15	1	0.21 - 0.41	1			510 - 1900	2		
Eagle Valley	0.01-0.035	2			0.083-0.334	13			513	1		
Gallagher												
Ash Pond A	0.018	1			1.1-3.1	1			570-617	1		
Type 1 Landfill									633-737	1		
Primary Pond					0.095-0.14	1			512-847	2		
Gibson												
North Ash Basin Annual	0.02	1			0.081 - 1.5	16			511 - 1710	19		
South Landfill Annual					0.66 - 2.7	2			509 - 1180	4		
Harding Street			0.051 - 0.662	15	0.0807 - 0.704	15			445 - 2160	15		
Merom												
Area 3 landfill	0.0161-0.0227	2										
Michigan City												
Boiler slag pond 2			0.022 - 0.1	2					500 - 930	2	0015 - 0.0	1
Petersburg			0.1 - 0.12	1	0.11 - 3.0	7	0.59 - 6.9	1	520 - 1700	12		
Rockport												
Landfill							0.0316 - 7.3	1				
Ashponds												
Schahfer												
Landfill			0.043 - 0.35	3	0.087 - 3.9	6	0.364 - 10.5	2	530 - 9000	8		
Surface impoundments				5	0.083 - 0.18	2			500 - 1400	8		
Waste Disposal Area									780 - 1200	1		
Wabash	0.015 - 0.02	2	0.04 - 0.28	5	0.12 - 1.6	5			500 - 1600	8		

APPENDIX B: Wells designated background			
Source: 2017 annual groundwater monitoring reports			
Power Plant	location distant/close to coal ash landfill or pond	water level up/down gradient from monitoring wells	elevated levels of CCR contaminants
Bailly	close		no
Brown	distant		no
Cayuga			
Primary ash settling pond	close		boron, molybdenum, antimony
Secondary ash settling pond	close	well A28 is downgradient from one monitoring well	boron, molybdenum, antimony
Lined Ash Pond	close		no
Landfill	close		no
Clifty Creek	close	CF-15-05 & -06 are downgradient from ash pond	boron, chromium, lithium
Culley	distant		no
Eagle Valley	close	no difference in water elevation	boron, molybdenum
Gallagher			
Ash Pond A	A315 distant A306 close	A306 is downgradient from Settling Pond	boron, molybdenum
Type 1 Landfill	A315 distant A202 close	A202 is downgradient of Ash Pond A	boron
Primary Pond	A315 distant A316 close		boron
Gibson			
North Ash Basin Annual	distant	upgradient	no
South Landfill Annual	distant	upgradient	no
Harding Street	close	upgradient' wells are on 3 sides of ash ponds. MW-8 is downgradient from some monitoring wells.	boron, arsenic, lithium, molybdenum
Merom	close		boron, arsenic, lead, chromium
Michigan City	close		arsenic, lithium, molybdenum, sulfate
Petersburg	close	wells 2, 3, and 4 are downgradient from the ash landfill and have been used to monitor the landfill since early 1990s.	boron, lithium, molybdenum, sulfate
Rockport			
Landfill	distant		no
Ashponds	distant		no
Schahfer			
Landfill	close		molybdenum, arsenic
Surface impoundments	close		boron, arsenic, sulfate
Waste Disposal Area	close		arsenic, cobalt
Wabash	distant		no

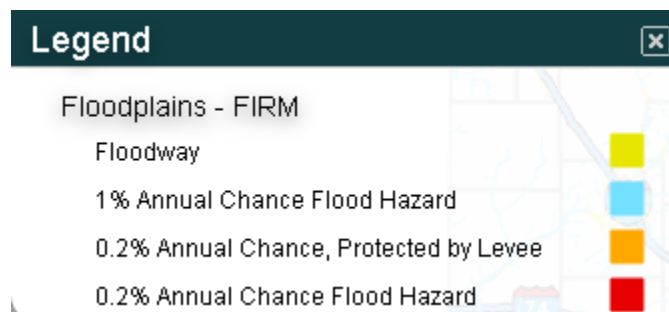
## Appendix C

### Floodplain maps at Indiana coal ash disposal sites

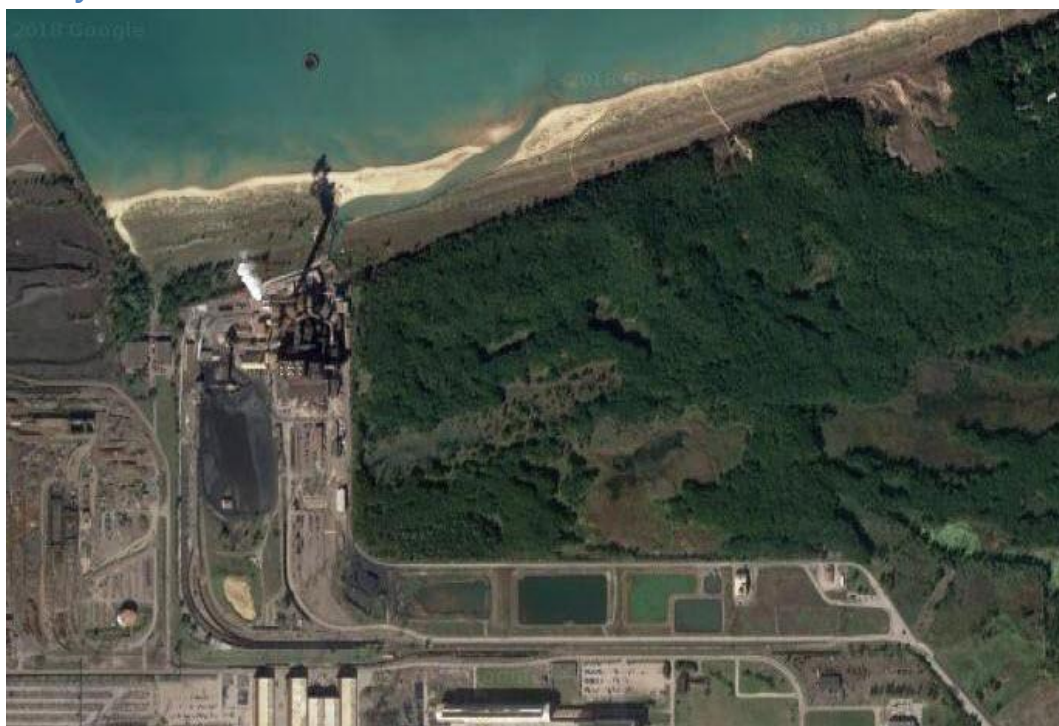
Indiana power generating stations and whether they have coal ash disposal in the 100-year floodplain

Bailly	No
Brown	No
Cayuga	Yes
Clifty Creek	Yes
Culley/Warrick	In floodplain, but berms exceed the height of the estimated 100-year flood
Eagle Valley	Yes
Gallagher	Yes
Gibson	Yes
Harding Street	In floodplain, but berms exceed the height of the estimated 100-year flood
Merom	No
Michigan City	Yes
Petersburg	Yes
Ratts	Yes
Rockport	Yes
Schahfer	Yes
Wabash	Yes

The following satellite images were obtained from FEMA Flood Rate Insurance Maps, 20170320, accessed at [maps.Indiana.edu](http://maps.Indiana.edu) using screen capture.



## Bailly



## Bailly - 100-year floodplain





**AB Brown**



**AB Brown - 100-year floodplain**



## Cayuga



## Cayuga - 100-year floodplain

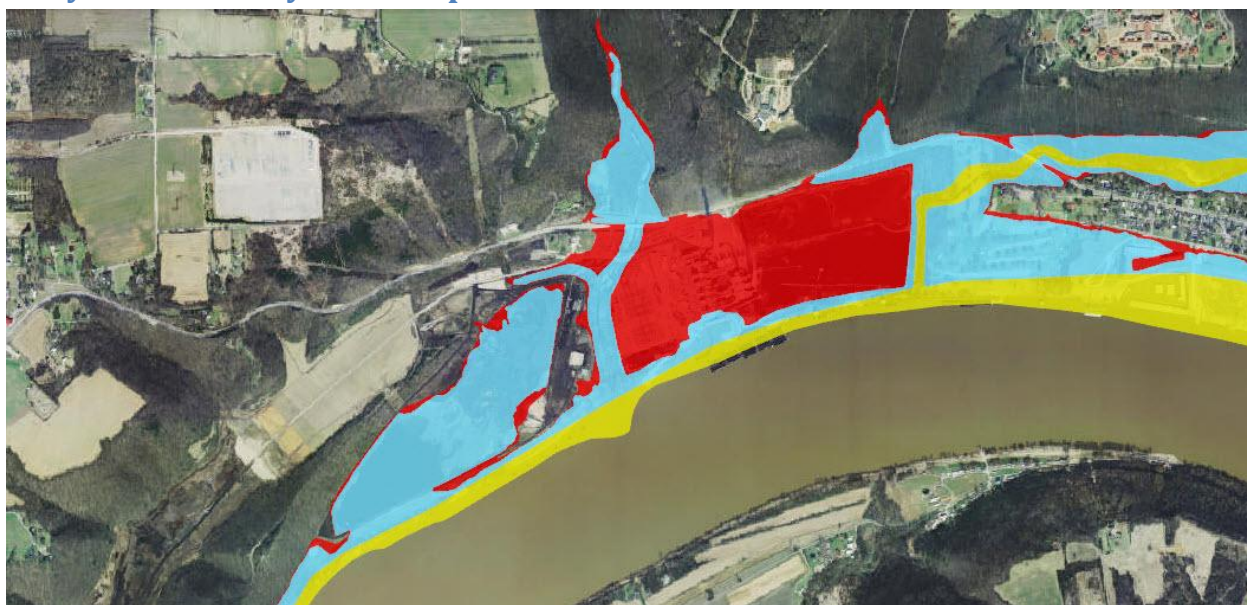




## Clifty Creek



## Clifty Creek - 100-year floodplain

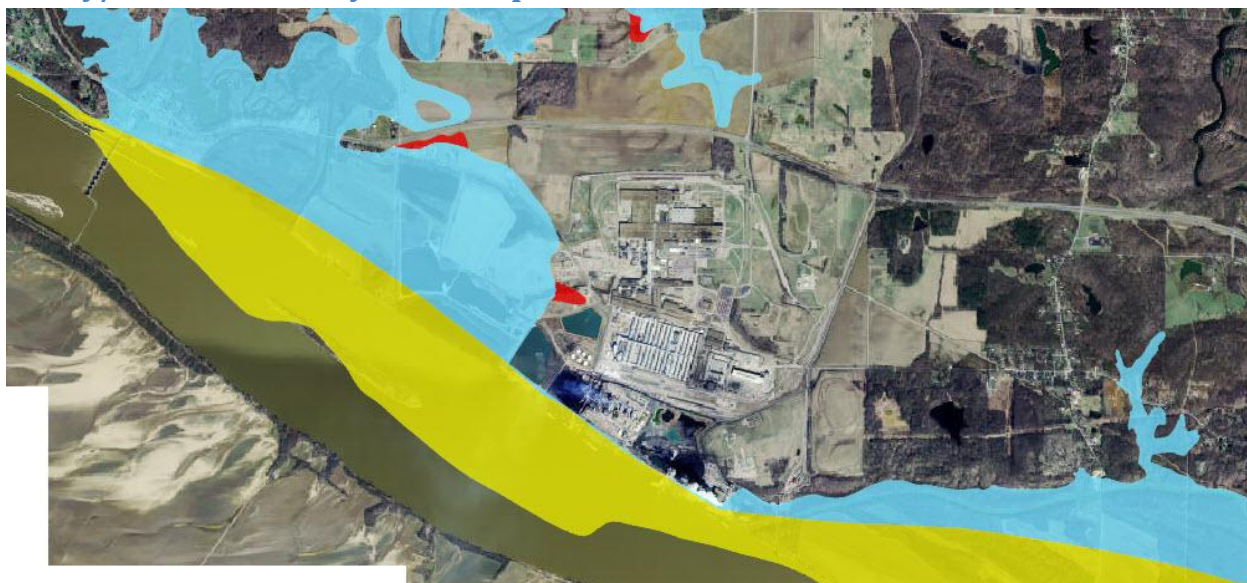




## Culley/Warrick



## Culley/Warrick - 100-year floodplain

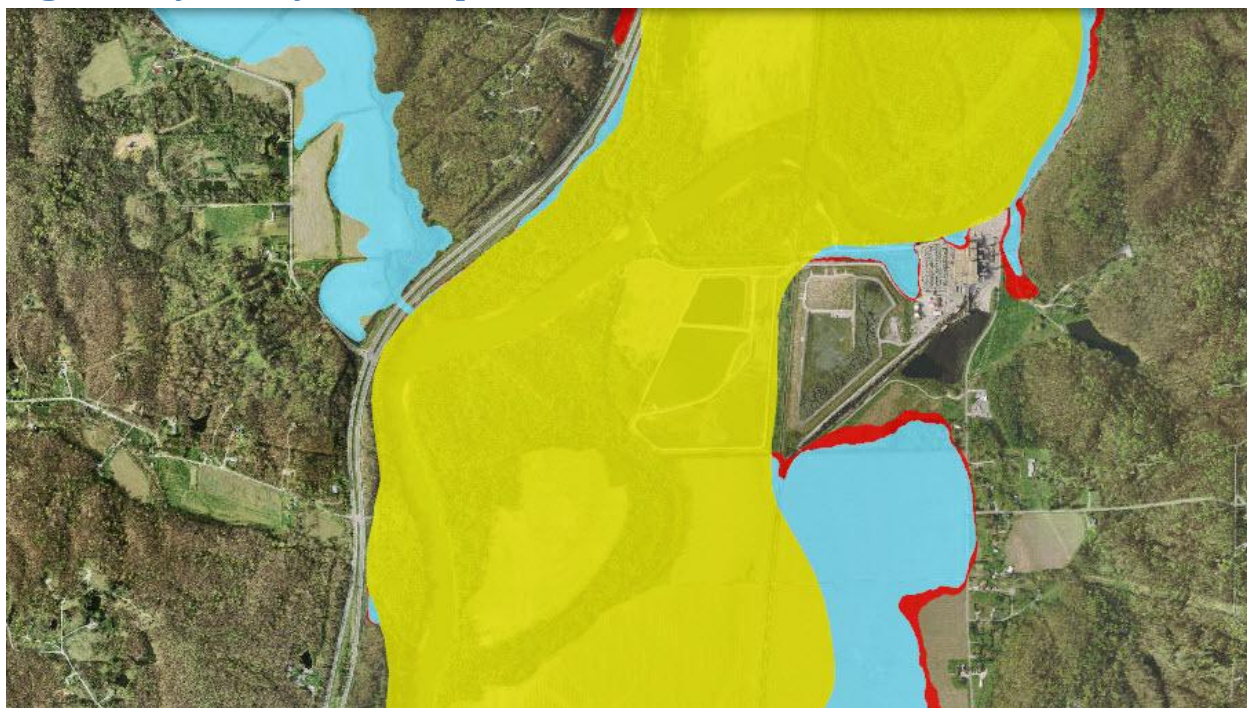




## Eagle Valley



## Eagle Valley - 100-year floodplain





## Gallagher



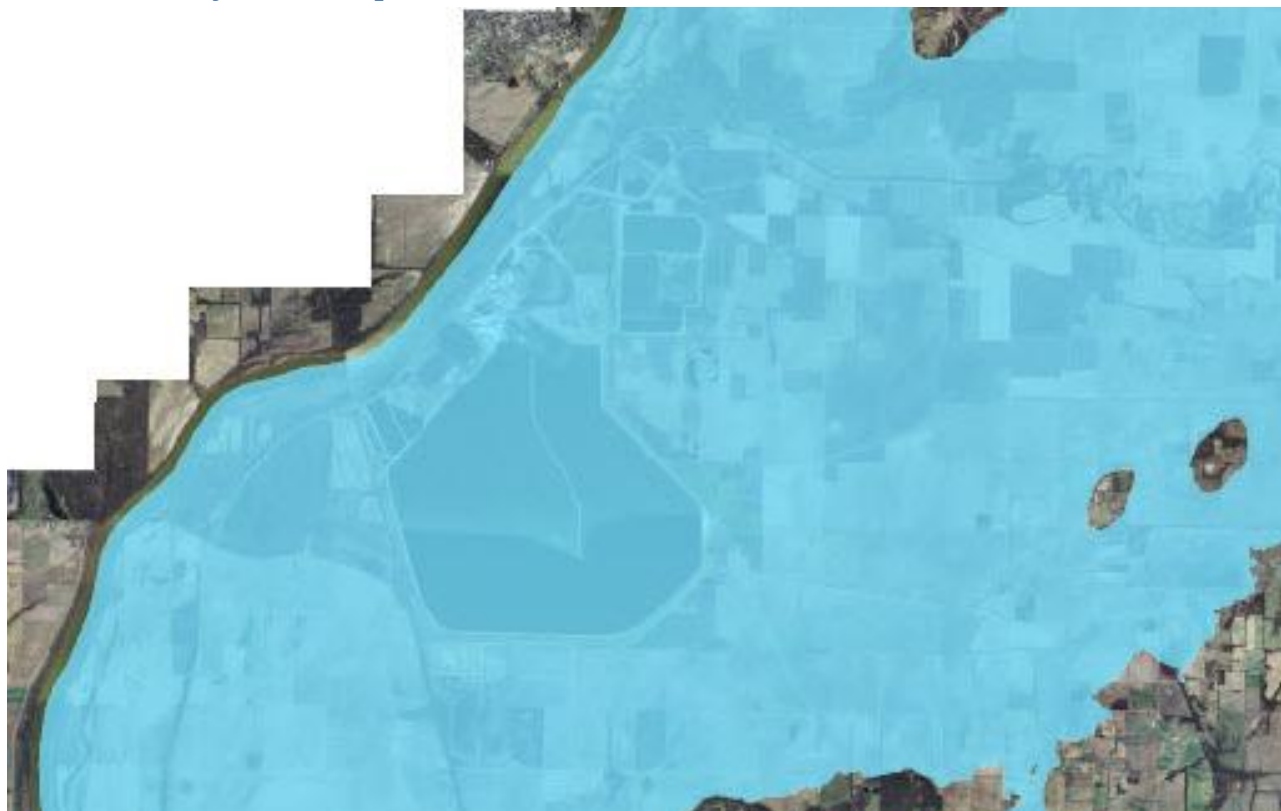
## Gallagher - 100-year floodplain



## Gibson



## Gibson - 100-year floodplain

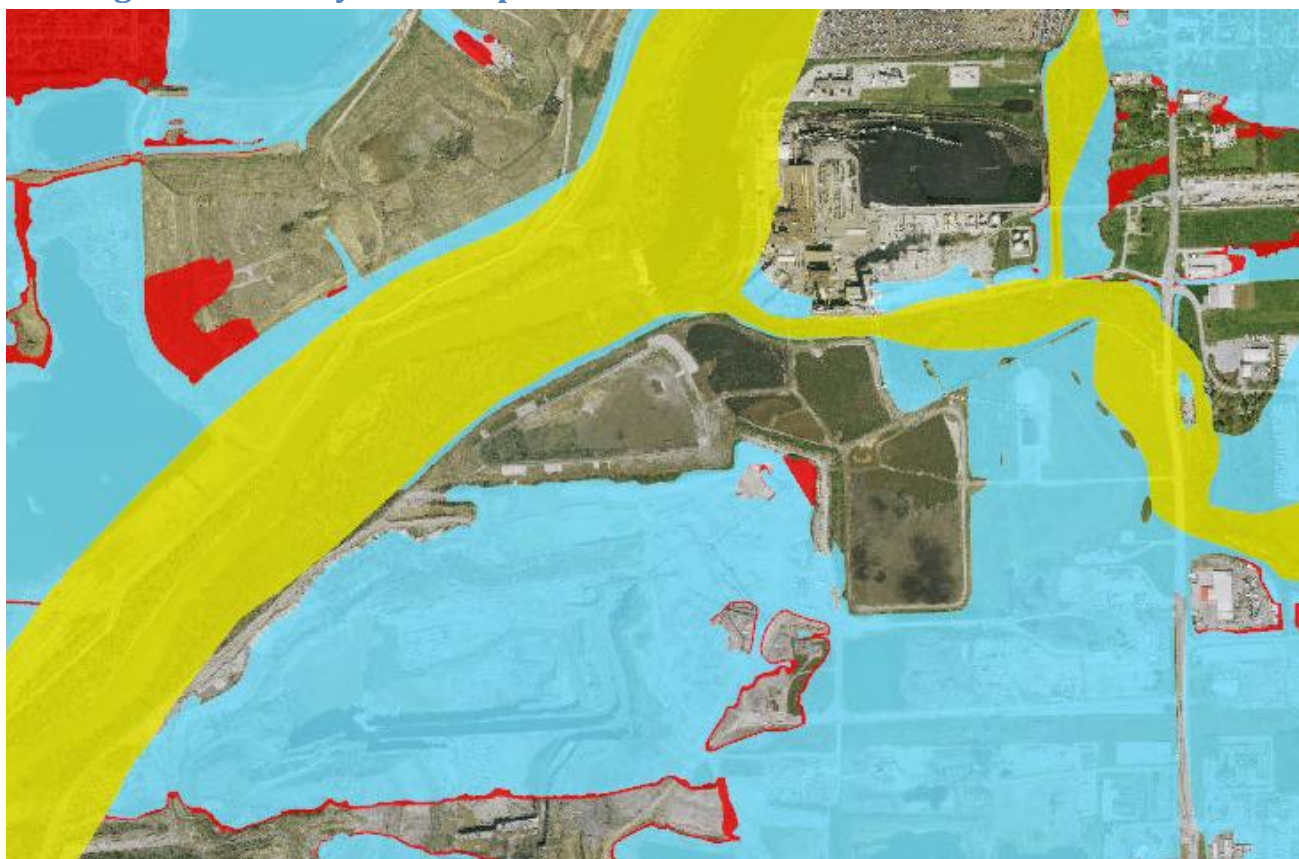




## Harding Street



## Harding Street - 100-year floodplain





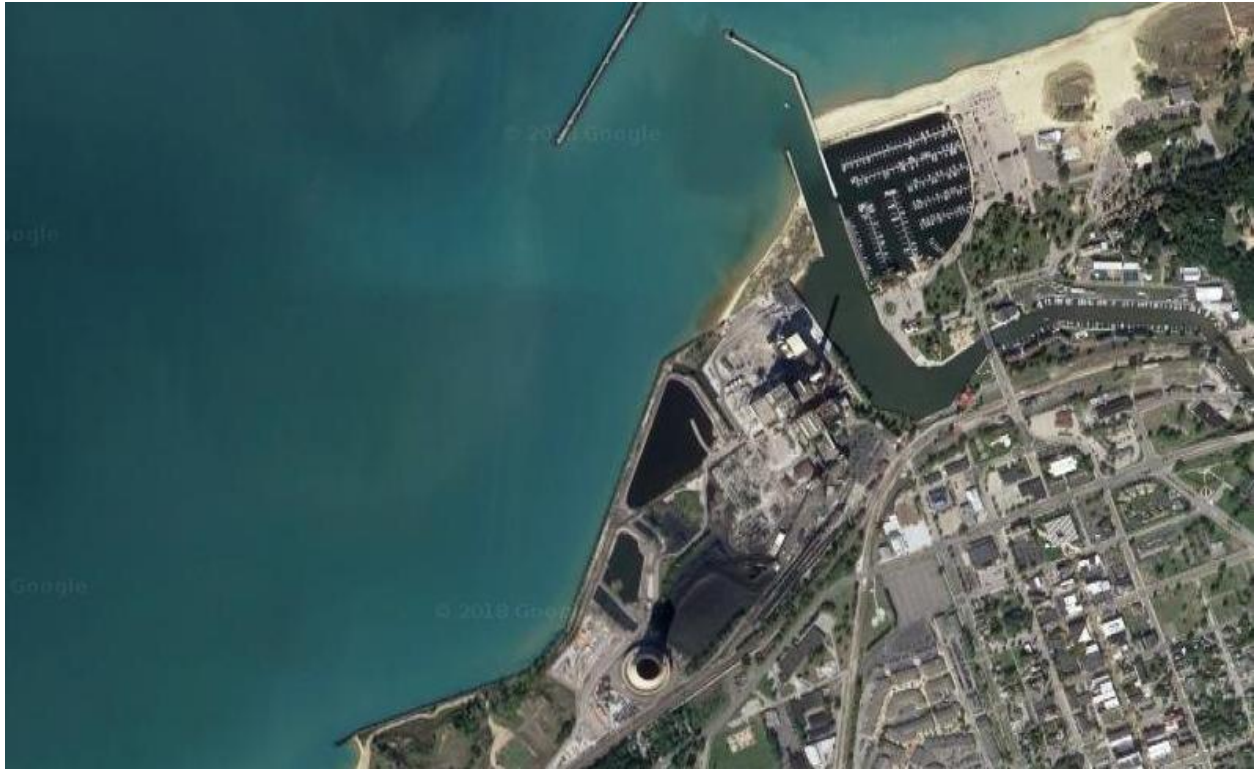
## Merom



## Merom - 100-year floodplain



## Michigan City



## Michigan City - 100-year floodplain

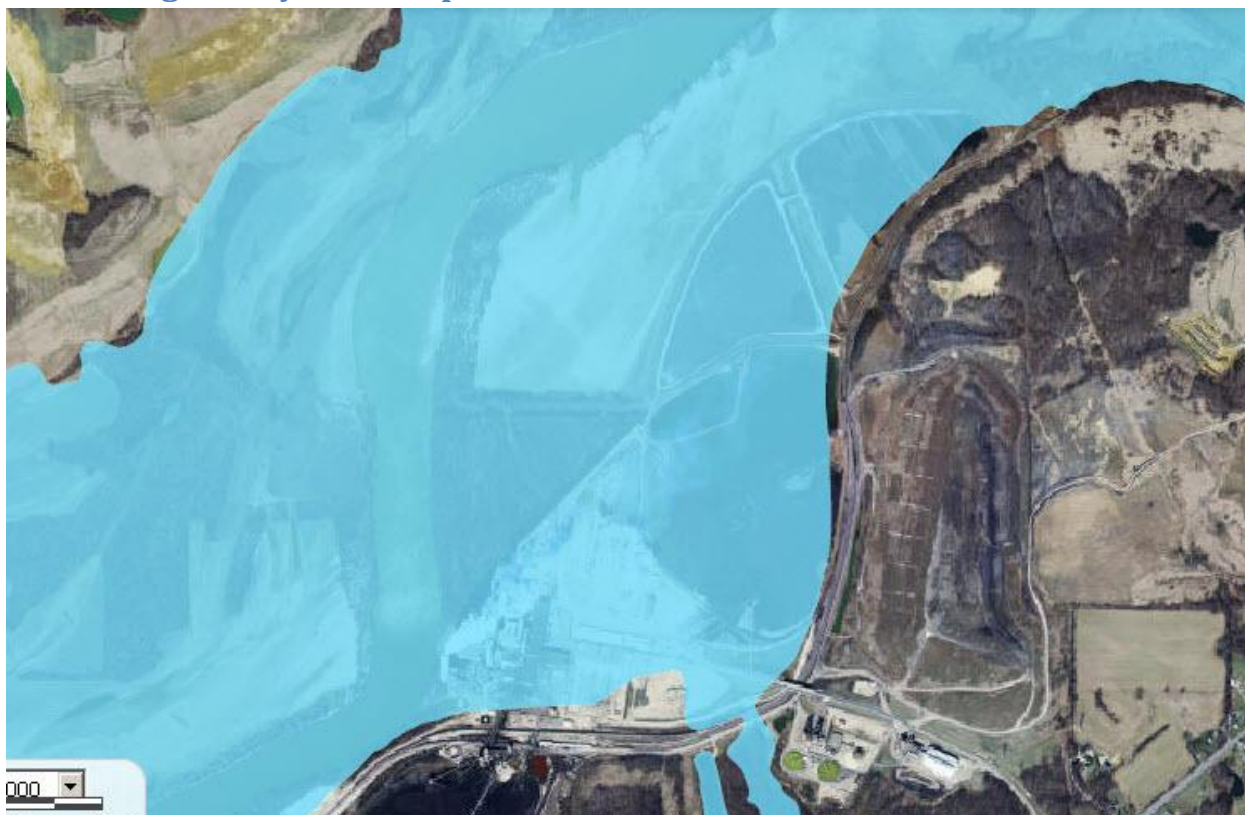




## Petersburg



## Petersburg - 100-year floodplain



Frank E. Ratts



Frank E. Ratts - 100-year floodplain





## Rockport



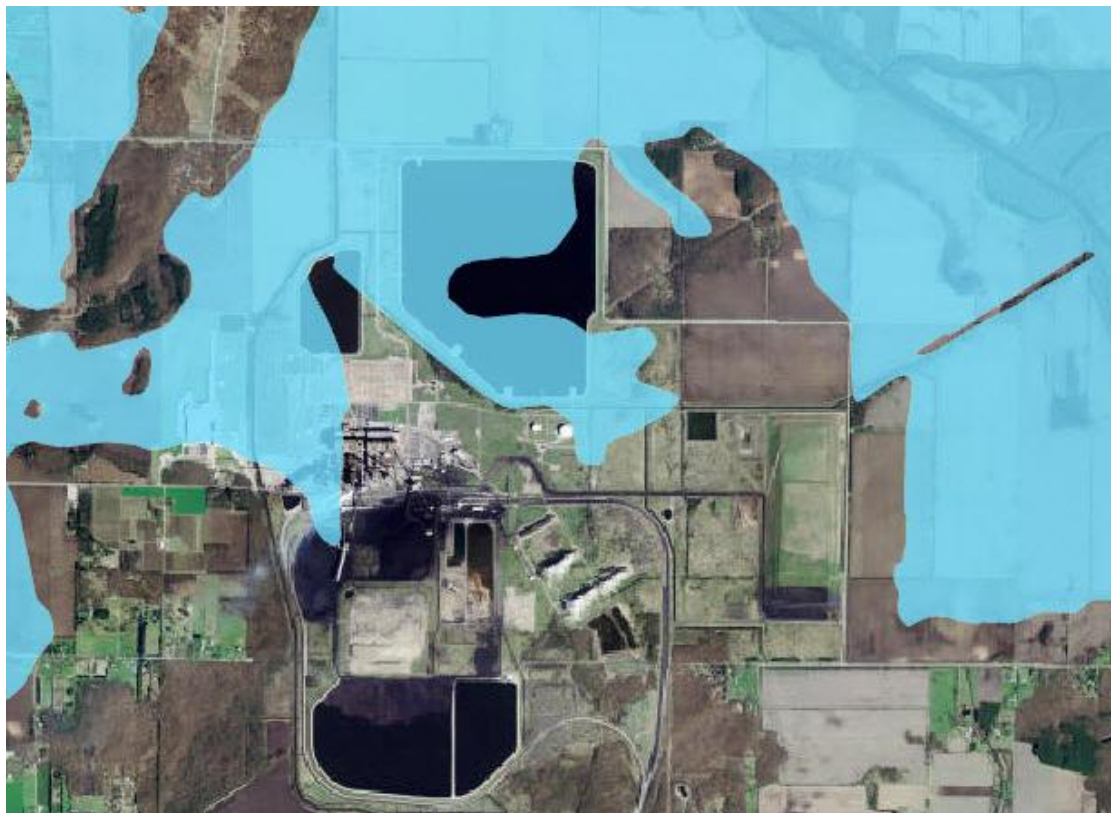
## Rockport - 100-year floodplain



## Schahfer



## Schahfer - 100-year floodplain





## Wabash



### Wabash - 100-year floodplain

