



ENVIRONMENTAL • GEOTECHNICAL  
BUILDING SCIENCES • MATERIALS TESTING

**2018 VISUAL INSPECTION OF ASH POND EMBANKMENTS  
IPL PETERSBURG ASH POND SYSTEM**

IPL PETERSBURG GENERATING STATION  
6925 NORTH STATE ROAD 57  
PETERSBURG, INDIANA 47567

ATC PROJECT NO. 170LF00626

JANUARY 16, 2019

PREPARED FOR:

INDIANAPOLIS POWER & LIGHT COMPANY  
6925 NORTH STATE ROAD 57  
PETERSBURG, INDIANA 47567

ATTENTION: MR. WILL TEAGUE



January 16, 2019

Mr. Will Teague  
Senior Scientist  
Indianapolis Power and Light Company  
6925 North State Road 57  
Petersburg, Indiana 47567-0436

ATC Group Services LLC

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Indianapolis, IN 46256

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Fax +1 317 849 4278

[www.atcgroupservices.com](http://www.atcgroupservices.com)

**Re: 2018 Visual Inspection of Ash Pond Embankments**  
**IPL Petersburg Ash Basin Pond System**  
**Indianapolis Power and Light Company**  
Petersburg Generating Station  
Petersburg, Indiana  
ATC Project No. 170LF00626

Dear Mr. Teague:

ATC Group Services LLC (ATC) is pleased to present the findings of the December 6, 2018 Visual Site Inspection of the IPL Petersburg Generating Station Ash Pond Embankments. This visual inspection and report were done in accordance with guidelines established by the Coal Combustion Residuals (CCR) Rule published by the Environmental Protection Agency (EPA) on April 17, 2015.

The scope of this inspection was limited to an examination of readily observable surficial features of the ash pond embankments and its appurtenant structures, and a review of information that you provided. Please note that the inspection did not include any test drilling, testing of materials, precise physical measurements of ash pond system features, detailed calculations to verify slope stability or other engineering analyses. Although the inspection was conducted by competent personnel in accordance with generally accepted methods for ash pond systems, it should not be considered as a warranty or guaranty of the future performance/safety of the ash pond embankments.

The ash pond embankments inspection was completed by David Stelzer and Juan Carrizo of ATC Group Services LLC (ATC). The weather condition during the inspection was approximately 39°F and cloudy. Contained herein is a summary of the engineering observations of the ash pond embankments including condition of the pond side slopes, grading and erosion, vegetation, haul roads, perimeter ditches, down drain channels, riprap areas, culverts and other adjacent structures. The ash pond system features are highlighted on the attached Site Plan shown in Figures 2 and 3 of this report.

The IPL Petersburg Generating Station Ash Basin Pond System is located about four (4) miles north of the City of Petersburg in Pike County, Indiana west of State Road 57 (Figure 1). The ash pond system encompasses an area of approximately 157.9 acres (Figure 2).

The 2018 Annual Inspection was performed to address the standards and guidelines required by the CCR Rule instituted by the Environmental Protection Agency on April 17, 2015. As a result, CCR ash ponds are now required to meet the requirements of 40 C.F.R. §257 to conduct annual inspections of the landfill in accordance with 40 C.F.R. §257.83(b). Listed below are requirements specified within the CCR Rule and the observations made by David Stelzer and Juan Carrizo during the annual inspection:

- i. A review of available information regarding the status and condition of the CCR Unit;
- ii. A visual inspection of the CCR Unit to identify signs of distress or malfunction;
- iii. A visual inspection of any hydraulic structures underlying the base of the CCR unit;

## Inspection Summary

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A layout of the ash pond system for the IPL Petersburg station is presented in Figure 2. Ash Ponds A and A' are the only ponds with water in them, the area occupied by Ash Pond D has been repurposed with the construction of a wastewater treatment plant, and Ash Ponds B and C are in the closure process as in-place closure.

Engineering observations performed on December 6, 2018 are shown in Figure 3, 2018 Visual Site Inspection Grid Map. ATC visually inspected the embankments for Ash Ponds A, A', B, C, and D, and found no areas of instability or of concerns to the proper functioning of the ash basin system.

A description of the inspection findings are presented in sections below.

## Changes in Geometry of Ash Pond

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Observed geometry changes during the 2018 Petersburg ash basin embankment inspection consisted mainly of grading measures along the ash pond basins that are under closure procedures (Ash Ponds B and C) and for the area encompassing the Ash Pond D which has been repurposed for the construction a new wastewater treatment plant and site improvements.

The ash pond descriptions, observations, and recommendations are as follows:

### **Ash Pond A and A'**

Ash Pond A' is approximately 8.1 acres in size, and has a normal water elevation of 432.2. Based on topographic map of the site, the pond depth ranges from elevation 420 to 438. Pond A' discharges flows to Lick Creek via a concrete riser and culvert structure. The drainage basin to Ash Pond A is approximately 62 acres with approximately 49.7 acres of ponding area. The normal water level is approximately 433.60, and it discharges to Ash Pond A' via culverts. In general, this area has a good soil cover and is well-vegetated.

1. Good vegetation exists along the majority of the west and north slopes of the partial closure area as shown in Figure 3, grid locations H23, H22, I21, I20, I18, I15, J14, J13, J12, I11, G11, E11, E12, A13, B13, A14, B14, A17, B19, B20, L23, L22, K19, M15, and M14.

## **Ash Pond B**

Ash Pond B is under closure procedures and does not receive ash sluicing anymore. The pond area is approximately 33.1 acres. In general, this area is has a good soil cover and is well-vegetated along the side slopes and top of the former ash pond basin.

1. Good vegetation exists along the majority of the basin, including the top of basin, and side slopes as shown in Figure 3, grid locations B14, A13, B10, C12, D12, E11, and G5.
2. At the side slopes along the western, south-eastern, and north there were erosion rills and gullies observed at certain locations as shown in grid A12, E12, C8, C13, B11, B9, D5, and E5.
  - Recommendation: Repair the soil cover and install erosion control mats in areas affected by erosion rills and gullies. Overseed these areas to establish a protective grass cover.

## **Ash Pond C**

Ash Pond C is under closure procedures and does not receive ash sluicing anymore. The pond area is approximately 45.7 acres. In general, this area is has a good soil cover and is well-vegetated along the side slopes.

1. Good vegetation exists along the side slopes of the basin as shown in Figure 3, grid locations I9, J9, P2, P3, G4, and G3.
2. At the side slopes along the western, and north there were erosion rills and gullies observed at certain locations as shown in grid G3, G4, G5, I7, I8, H4, H5, H6, H3, and H2.
  - Recommendation: Repair the soil cover and install erosion control mats in areas affected by erosion rills and gullies. Overseed these areas to establish a protective grass cover.

## **Ash Pond D**

The area for Ash Pond D has been repurposed and does not receive ash sluicing anymore. In general, this area is now entirely occupied by a wastewater treatment plant and a parking facility.

## Minimum and Maximum Depth of Ash Pond System

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According to site topographic map, the minimum depth for Ash Ponds A and A' is approximately elevation 420.0 and the maximum depth is elevation 440.0,

## Ash Pond System Storage Volume

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Ash Ponds A and A' have a combined storage capacity of approximately 410 acre-feet.

## Structural Integrity

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All ash pond embankment slopes appear to be stable with no visual indications or signs of sloughing or subsidence were detected during the 2018 visual inspection.

## Stability and Operation

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The ash pond embankments are generally in good condition and the slopes are well vegetated in most places. No significant deficiencies were noted and operation of the ash pond system at this time is not expected to be adversely affected by any items detected during the 2018 inspection.

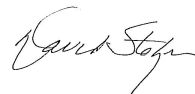
We appreciate the opportunity to assist you with this project. If you have any questions concerning information contained in this report, please do not hesitate to call either of the undersigned at 317.849.4990.

Sincerely,

### ATC Group Services LLC



Juan D. Carrizo, P.E., CFM, CPM  
Senior Project Engineer



David Stelzer, P.E., PhD.  
Senior Project Engineer

Copies: Will Teague (1)  
Erwin Leidolf (1)

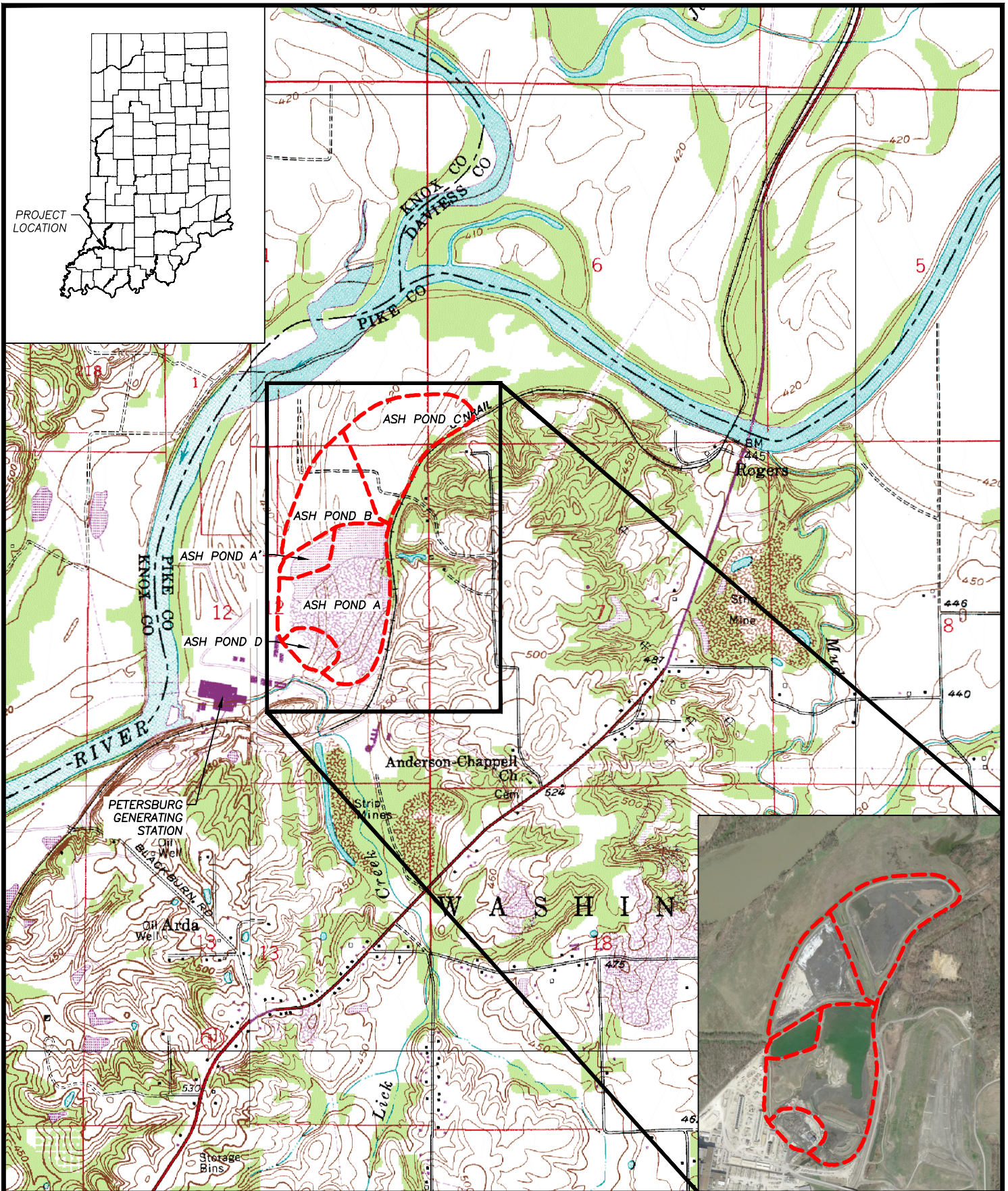
Attachments:

- Figure 1      Vicinity Map
- Figure 2      CCR Disposal Facilities
- Figure 3      Visual Site Inspection Grid Map

Attachment A: Dam Inspection Report



H:\2018\PL\PETERSBURG\170LF00626-170LF00626-VIC LIMITS ASH POND.DWG, SITE



## VICINITY MAP

IPL PETERSBURG ASH POND SYSTEM  
INDIANAPOLIS POWER AND LIGHT COMPANY  
6925 NORTH STATE ROAD 57  
PETERSBURG, INDIANA

Project Number:  
170GC00626

Drawing File:  
SEE LOWER LEFT

Date:  
1/19

Scale:  
AS SHOWN

Drn. By:  
DH

Ckd. By:  
JC

App'd By:

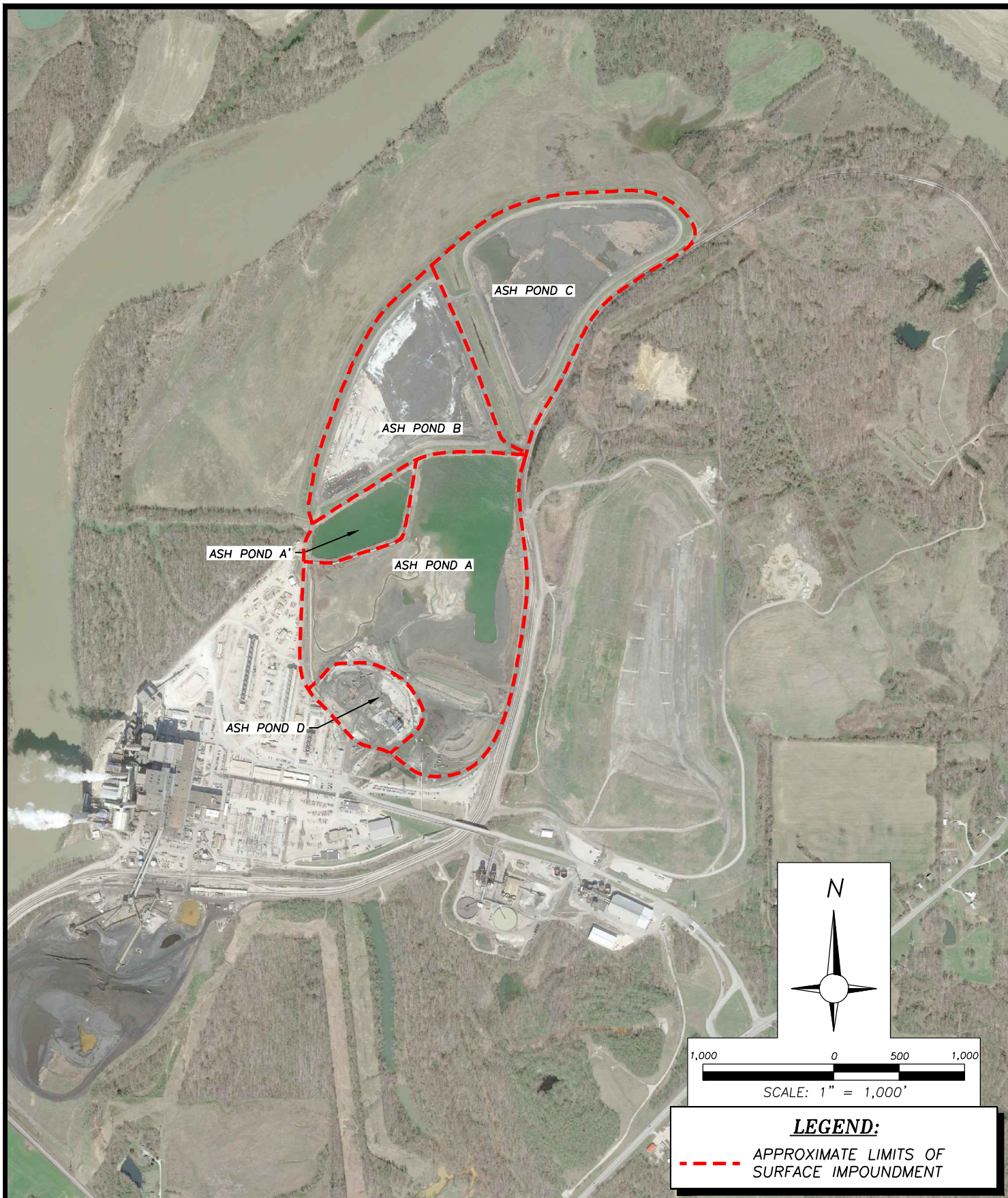
Figure:

1

**ATC**



H:\2018\IPL\PETERSBURG\170LF00626\170LF00626--FACILITY ASH POND.DWG, SITE



## CCR ASH POND SYSTEM CCR ASH POND EMBANKMENT ANNUAL INSPECTION REPORT

IPL PETERSBURG ASH POND SYSTEM  
INDIANAPOLIS POWER AND LIGHT COMPANY  
6925 NORTH STATE ROAD 57  
PETERSBURG, INDIANA

Project Number:  
170GC00626

Drawing File:  
SEE LOWER LEFT

Date:  
1/19

Scale:  
AS SHOWN

Drn. By:  
DH

Ckd. By:  
JC

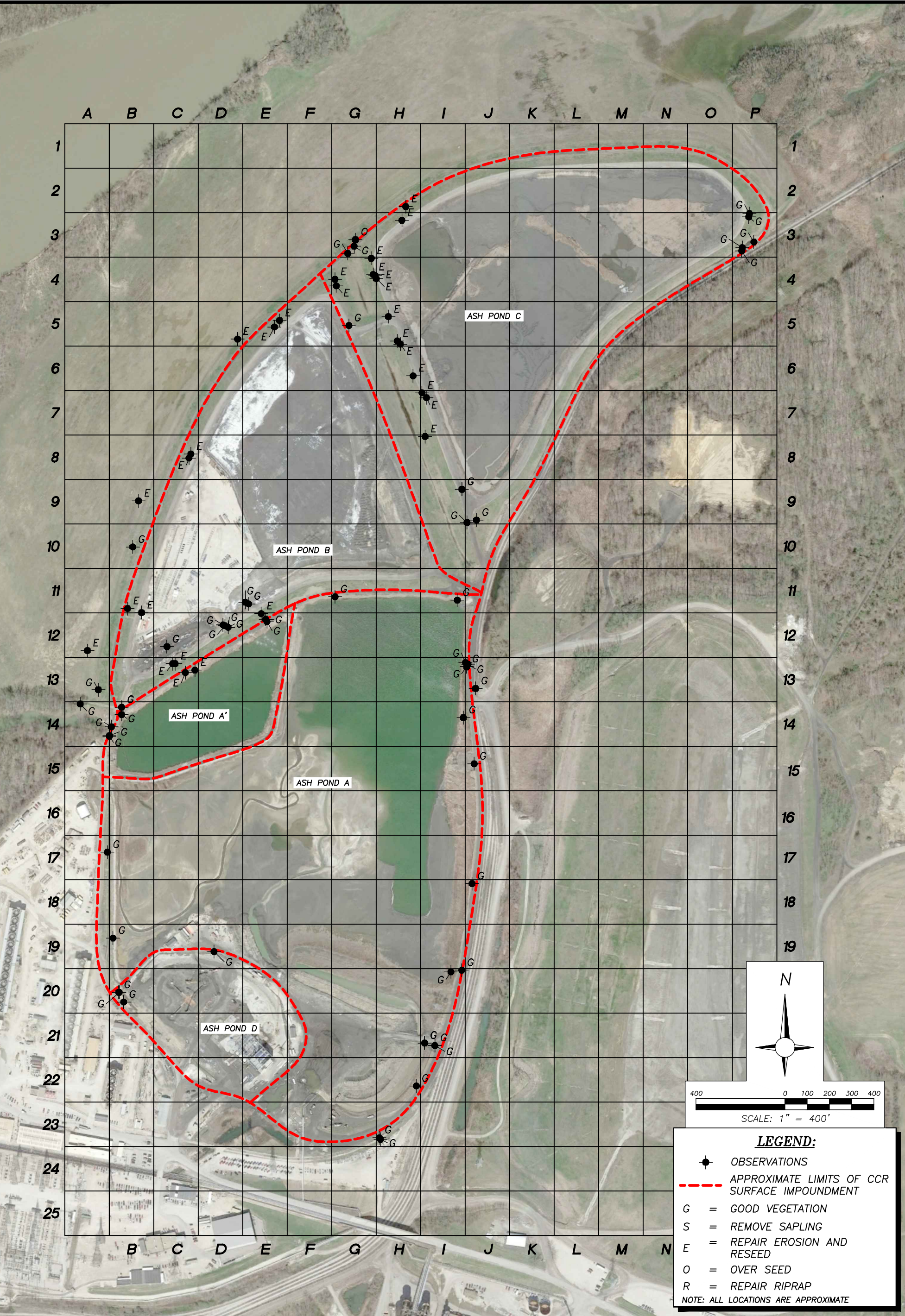
App'd By:

Figure:

**ATC**

**2**







## **Attachment A: Dam Inspection Report**

# DAM INSPECTION REPORT (Refer to pages 5 and 6 for instructions.)

Name of Professional Conducting Inspection <i>David Stelzer</i>	Professional License No. (Indiana) <i>910144</i>
Business Address <i>7988 Centerpoint, Indianapolis, IN</i>	Phone: (day) <i>317-579-4071</i> (evening) <i>317-579-4071</i>

Company Name <i>ATC Group Services</i>
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INSPECTION PREPARATION: Reviewed all pertinent technical documentation related to this dam and site in the State's and the Owner's files:  
 Yes ☒ No ☐ Comment \_\_\_\_\_

MULTIDISCIPLINARY: I am experienced in the technical disciplines or I am working with other professionals experienced in the technical disciplines to properly inspect this dam and appurtenant works. Technical disciplines, in addition to the general civil engineering, may include geotechnical, geological, hydrologic, structural, and mechanical. Yes ☒ No ☐ Comment \_\_\_\_\_

Dam Name <i>IPL Petersburg Ash Pond A</i>		Quad. <i>Petersburg</i>	Date of Inspection <i>12/6/2018</i>	
State Dam ID <i>NA</i>	Permit (if unapproved see pg. 6) <i>NA</i>	County <i>Wke</i>	Sec. T. R. <i>12 1 N. 8 W</i>	Last Inspection <i>11/17/2017</i>
Owners Name <i>Indianapolis Power and Light</i>			Owner's Phone <i>(812) 601-7115</i>	
Address/Zip Code <i>6925 North State Rd. 57 Petersburg IN 47567</i>				
Contact's Name <i>Will Teague</i>		Contact's Phone (day) <i>812-601-7115</i> (evening) <i>812-582-9797</i>		Spillway Width Top <i>50</i> Bot. <i>50</i> Ft. FBD. <i>N/A</i>
Hazard <i>Low</i>	Drainage Area <i>0.16</i> MI <sup>2</sup>	Surface Area <i>81</i> AC	Height <i>20</i> FT	Crest Length <i>6900</i> FT
			Crest Width <i>20</i> FT	Inlet Below Crest <i>10</i> FT
				Slope: Up <i>2.5:1</i> Down <i>2.5:1</i>

FIELD CONDITIONS OBSERVED		DRAWDOWN STRUCTURE	
Water Level - Below Dam Crest <i>20</i> Ft.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> None	
Ground Moisture Condition: Dry <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Snowcover <input type="checkbox"/> Other _____		Comment _____	

MONITORING <input checked="" type="checkbox"/> Yes <input type="checkbox"/> None <input checked="" type="checkbox"/> Gage Rod <input type="checkbox"/> Piezometers <input type="checkbox"/> Seepage Weirs <input type="checkbox"/> Survey Monuments <input type="checkbox"/> Other _____
Comments _____

<b>A UPSTREAM SLOPE</b> GOOD <input checked="" type="checkbox"/> ACCEPTABLE <input type="checkbox"/> DEFICIENT <input type="checkbox"/> POOR <input type="checkbox"/>	PROBLEMS NOTED: <input checked="" type="checkbox"/> (A-1) None <input type="checkbox"/> (A-2) Riprap - Missing, Sparse, Displaced, Weathered <input type="checkbox"/> (A-3) Wave Erosion-with Scarps <input type="checkbox"/> (A-4) Cracks-with Displacement <input type="checkbox"/> (A-5) Sinkhole <input type="checkbox"/> (A-6) Appears Too Steep <input type="checkbox"/> (A-7) Depressions or Bulges <input type="checkbox"/> (A-8) Slides <input type="checkbox"/> (A-9) Animal Burrows <input type="checkbox"/> (A-10) Trees, Brush, Briars <input type="checkbox"/> (A-11) Other _____ Comments: _____
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<b>B CREST</b> GOOD <input type="checkbox"/> ACCEPTABLE <input checked="" type="checkbox"/> DEFICIENT <input type="checkbox"/> POOR <input type="checkbox"/>	PROBLEMS NOTED: <input type="checkbox"/> (B-1) None <input type="checkbox"/> (B-2) Ruts or Puddles <input checked="" type="checkbox"/> (B-3) Erosion <input type="checkbox"/> (B-4) Cracks with Displacement <input type="checkbox"/> (B-5) Sinkholes <input type="checkbox"/> (B-6) Not Wide Enough <input type="checkbox"/> (B-7) Low Area <input type="checkbox"/> (B-8) Misalignment <input type="checkbox"/> (B-9) Inadequate Surface Drainage <input type="checkbox"/> (B-10) Trees, Brush, Briars <input type="checkbox"/> (B-11) Other _____ Comments: _____
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*Spillway Width* refers to the open channel (typically the emergency or auxiliary spillway) at the control section.  
*Ft. FBD.* refers to the vertical distance from the emergency (auxiliary) spillway control section to the lowest point of the crest of the dam.  
*Inlet Below Crest* refers to the vertical distance from the inlet of the principal spillway to the crest of the dam.

DAM NAME

IPL Petersburg Ash Pond A

STATE DAM I.D.

N.A.

DATE

1/15/2019

**C DOWNSTREAM SLOPE**

GOOD	<input type="checkbox"/>
ACCEPTABLE	<input checked="" type="checkbox"/>
DEFICIENT	<input type="checkbox"/>
POOR	<input type="checkbox"/>

PROBLEMS NOTED: ☐ (C-1) None ☐ (C-2) Livestock Damage ☒ (C-3) Erosion or Gullies ☐ (C-4) Cracks with Displacement ☐ (C-5) Sinkholes ☐ (C-6) Appears too Steep ☐ (C-7) Depression or Bulges ☐ (C-8) Slide ☐ (C-9) Soft Areas ☐ (C-10) Trees, Brush, Briars ☐ (C-11) Animal Burrows ☐ (C-12) Other \_\_\_\_\_

Comments:

**D SEEPAGE**

GOOD (NONE)	<input checked="" type="checkbox"/>
ACCEPTABLE	<input type="checkbox"/>
DEFICIENT	<input type="checkbox"/>
POOR	<input type="checkbox"/>

PROBLEMS NOTED: ☒ (D-1) None ☐ (D-2) Saturated Embankment Area ☐ (D-3) Seepage Exits on Embankment ☐ (D-4) Seepage Exits at Point Source ☐ (D-5) Seepage Area at Toe ☐ (D-6) Flow Adjacent to Outlet ☐ (D-7) Seepage Clear/Muddy

[DRAIN OUTFALLS SEEN \_\_\_\_\_ No \_\_\_\_\_ Yes ☐ (D-8) Flow Clear/Muddy ☐ (D-9) Dry/Obstructed]

☐ (D-10) Other \_\_\_\_\_ Describe location of drains and indicate amount and quality of discharge.

Comments:

**E PRINCIPAL SPILLWAY**

GOOD	<input checked="" type="checkbox"/>
ACCEPTABLE	<input type="checkbox"/>
DEFICIENT	<input type="checkbox"/>
POOR	<input type="checkbox"/>

DESCRIPTION:

PROBLEMS NOTED: ☒ (E-1) None ☐ (E-2) Deterioration ☐ (E-3) Separation ☐ (E-4) Cracking ☐ (E-5) Inlet, Outlet Deficiency ☐ (E-6) Stilling Basin Inadequacies ☐ (E-7) Trash Rack ☐ (E-8) Other \_\_\_\_\_

Comments:

**F AUXILIARY SPILLWAY**

GOOD	<input type="checkbox"/>
ACCEPTABLE	<input type="checkbox"/>
DEFICIENT	<input type="checkbox"/>
POOR	<input type="checkbox"/>

DESCRIPTION:

PROBLEMS NOTED: ☐ (F-1) None ☒ (F-2) No Auxiliary Spillway Found ☐ (F-3) Erosion-with Backcutting ☐ (F-4) Crack with Displacement ☐ (F-5) Appears to be Structurally Inadequate ☐ (F-6) Appears too Small ☐ (F-7) Inadequate Freeboard ☐ (F-8) Flow Obstructed ☐ (F-9) Concrete Deteriorated/Undermined ☐ (F-10) Other \_\_\_\_\_

Comments:

**G MAINTENANCE AND REPAIRS**

GOOD	<input checked="" type="checkbox"/>
ACCEPTABLE	<input type="checkbox"/>
DEFICIENT	<input type="checkbox"/>
POOR	<input type="checkbox"/>

PROBLEMS NOTED: ☒ (G-1) None ☐ (G-2) Access Road Needs Maintenance ☐ (G-3) Cattle Damage ☐ (G-4) Spillway Obstruction ☐ (G-5) Brush, Weeds, Tall Grass, on Upstream Slope, Crest, Downstream Slope, Toe ☐ (G-6) Trees on Upstream Slope, Crest, Downstream Slope ☐ (G-7) Rodent Activity on Upstream Slope, Crest, Downstream Slope, Toe ☐ (G-8) Deteriorated Concrete-Facing, Outlet, Spillway ☐ (G-9) Gate and/or Drawdown Need Repair ☐ (G-10) Other \_\_\_\_\_

Comments:

**H OVERALL CONDITIONS**

Based on this inspection and recent file review, the overall surficial condition is determined to be:

☐ (H-3) Conditionally Poor ☐ (H-4) Poor ☐ (H-5) Unsatisfactory

☒ (H-1) Satisfactory ☐ (H-2) Fair

IMPORTANT: IF THIS RATING IS DIFFERENT THAN PREVIOUS IDNR RATING, PLEASE ATTACH EXPLANATION AND REASONS FOR CHANGE ON PAGE 4.



DAM NAME

IPL Petersburg Ash Pond A'

STATE DAM I.D.

N.A.

DATE

1/15/2019

RECOMMENDATIONS AND ITEMS REQUIRING ACTION BY OWNER  
TO IMPROVE THE SAFETY OF THE DAM

## MAINTENANCE-MINOR REPAIR-MONITORING

☒ (1) Provide Additional Erosion Protection:

Crest and Downstream Slope

☐ (2) Mow:☐ (3) Clear Trees and/or Brush From:☐ (4) Initiate Rodent Control Program and Properly Backfill Existing Holes:☐ (5) Repair:☐ (6) Provide Surface Drainage For:☐ (7) Monitor:☐ (8) Other:☐ (9) Other:

## ENGINEERING-EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO:

(Plans &amp; Specifications must be approved by State prior to construction.)

☐ (10) Prepare Plans and Specifications for the Rehabilitation of the Dam:☐ (11) Prepare As-Built Drawings of:☐ (12) Perform a Geotechnical Investigation to Evaluate the Stability of the Dam:☐ (13) Perform a Hydrologic Study to Determine Required Spillway Size:☐ (14) Prepare Plans and Specifications for an Adequate Spillway:☐ (15) Set up a Monitoring Program:☐ (16) Refer to Unapproved Status of Dam:☐ (17) Develop an Emergency Action Plan:☐ (18) Other:☐ (19) Other:

Recommended schedule for upgrades/comments (Please prioritize and note importance of each item.)

(1) As soon as possible.

Photographs ☐ Attachments ☐ENGINEER'S INSTRUCTION Instructed owner on the safety concerns with the structure and how to monitor and inspect the dam and appurtenant works in the interim period between the regulatory two-year inspections. Yes ☒ No ☐

Comment

Professional Engineer's Signature

David Steyer

Date

1/14/2019

Reviewed By

Date

Owner/Owner's Representative

**EXPLANATION FOR CHANGE IN RATINGS** ( Describe all repairs, upgrades or improvements made if dam conditions and rating have improved since the last inspection. Describe deteriorating conditions if ratings have worsened.)

REASONS FOR RATING CHANGE: No change

**PREVIOUS RECOMMENDATIONS FOR MAINTENANCE, REPAIRS, AND UPGRADES:**

HAVE THEY BEEN PERFORMED ☒ YES ☐ NO (If no, please explain:)

**Supporting Documentation**

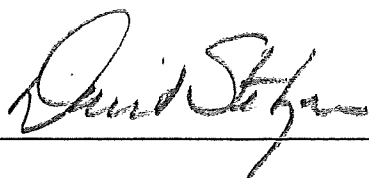
Photographs ☐ Attachments ☐ Calculations ☐ Drawings ☐ Other ☐

Comments:

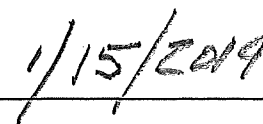
## INSTRUCTIONS FOR COMPLETING DAM VISUAL INSPECTION REPORT

1. Complete all items that are applicable; if not applicable, write in "N/A". For concrete dams, complete all applicable items and use "comments" section to cover items not included in the check boxes. Also indicate that the dam is concrete in the comments section.
2. Use page 6 to determine ratings of each dam component (items A through G) and for Overall Conditions (Item H).
3. Please write legibly and concisely.
4. Inspector must be knowledgeable with the type of dam, materials, and components being inspected. If not, qualified assistance shall be engaged.
5. The inspector shall review the dam owner's and IDNR project files prior to the inspection. Previous inspection reports shall be closely reviewed for previous problems and deficiencies.
6. If the ratings of the components (items A through G) or the Overall Conditions (item H) of the dam have changed since the last inspection, please complete page 4. If a rating has improved, dam repairs, improvements, analyses, or maintenance must have been performed and documented on page 4.
7. For a dam to have a satisfactory "Overall Conditions" rating, it must have no existing or potential dam safety deficiencies recognized. Safe performance is expected under all anticipated loading conditions, including infrequent hydrologic events (PMP for high hazard dams) and seismic events. The dam owner's project files must contain hydrologic and hydraulic analyses of the dam and its spillways to verify performance. The files must also contain slope stability analyses to verify embankment stability under full reservoir conditions and rapid-draw down conditions. The dam and all of its components must meet current IDNR and design standards. "Normal" deficiencies such as minor erosion, minor seepage, or normal concrete aging may not make a dam unsatisfactory or unacceptable. For a satisfactory "Overall Conditions" rating to be assigned, items A through G generally should all have a "good" rating; however, in some cases an "acceptable" rating may be satisfactory if the "Problems Noted" are minor, or "normal" conditions, such as minor erosion rills, small puddles on crest, or if grass needs mowed, but is in good condition.
8. An inspection report form must be submitted to IDNR along with a formal technical inspection report as described in Chapter 4.0 of Part 3 of the Indiana Dam Safety Inspection Manual.
9. Please sign and date this page in the space below to verify that you have read and understand these instructions.

Inspector's Signature: \_\_\_\_\_



Date: \_\_\_\_\_



## GUIDELINES FOR DETERMINING CONDITIONS

### CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, PRINCIPAL SPILLWAY, AUXILIARY SPILLWAY

GOOD	ACCEPTABLE	DEFICIENT	POOR
In general, this part of the structure has a good appearance, and conditions observed in this area do not appear to threaten the safety of the dam.	Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.	Continued deterioration and/or unusual loading may threaten the safety of the dam.	Conditions observed in this area appear to threaten the safety of the dam. Conditions observed in this area are unacceptable.

### CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD (NONE)	ACCEPTABLE	DEFICIENT	POOR
No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.	Some seepage exists at areas other than the drain outfalls, or other designed drains. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.	Excessive seepage exists at areas other than drain outfalls and other designed drains. Seepage needs to be evaluated. Increased flow and/or continued deterioration in seepage conditions may threaten the safety of the dam.	Excessive seepage conditions observed appear to threaten the safety of the dam and is unacceptable. Examples: 1) Designed drain or seepage flows have increased without increase in reservoir level. 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples. 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

### CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD	ACCEPTABLE	DEFICIENT	POOR
Dam appears to receive effective on-going maintenance and repair, and only a few minor items may need to be addressed.	Dam appears to receive maintenance, but some maintenance items need to be addressed. No major repairs are required.	Level of maintenance of the dam needs significant improvement. Major repairs may be required. Continued neglect of maintenance may threaten the safety of the dam.	Dam does not receive adequate maintenance. One or more items needing maintenance or repair has begun to threaten the safety of the dam. Level of maintenance is unacceptable.

### OVERALL CONDITIONS

**SATISFACTORY** - No existing or potential dam safety deficiencies recognized. Safe performance is expected under all anticipated loading conditions, including such events as infrequent hydrologic and/or seismic events. Project Files contain necessary hydrologic, and other engineering calculations to verify dam safety and performance.

**FAIR** - No existing dam safety deficiencies are recognized for normal loading conditions. Infrequent hydrologic and/or

seismic events would probably result in a dam safety deficiency.

**CONDITIONALLY POOR** - A potential safety deficiency is recognized for unusual loading conditions which may realistically occur during the expected life of the structure. **CONDITIONALLY POOR** may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency; further investigations and studies are necessary.

**POOR** - A potential dam safety deficiency is clearly recognized for normal loading conditions. Immediate actions to resolve the deficiency are recommended; reservoir restrictions may be necessary until problem resolution.

**UNSATISFACTORY** - A dam safety deficiency exists for normal conditions. Immediate remedial action is required for problem resolution.

### HAZARD CLASSIFICATIONS OF DAMS (STRUCTURE)

**LOW HAZARD**- A structure the failure of which may damage farm buildings, agricultural land, or local roads

**SIGNIFICANT HAZARD**- A structure the failure of which may damage isolated homes and highways, or cause the temporary interruption of public utility services.

**HIGH HAZARD**-A structure the failure of which may cause the loss of life and serious damage to homes, industrial and commercial buildings, public utilities, major highways, or railroads.

## UNAPPROVED STATUS OF DAM

A dam that has been given an unapproved status (see entry for permit) means that plans, construction specifications, hydraulic analyses, and/or a geotechnical investigation on your dam, proving the safety of the structure, have not been received and approved by the Indiana Department of Natural Resources (IDNR). IDNR records indicate that no progress has been made to secure this approval. The fact that the dam is inspected under the Regulation of Dams Act (IC 14-27-7.5) in no way alters the illegal status of the structures.

If your dam is indicated to be unapproved, it is requested that your engineer contact the Indiana Department of Natural Resources,