



**ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING**

**2016 VISUAL SITE INSPECTION
IPL PETERSBURG RESTRICTED WASTE TYPE III LANDFILL**

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

ATC PROJECT NO. 170LF00279

DECEMBER 27, 2016

PREPARED FOR:

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

ATTENTION: MR. ERWIN A. LEIDOLF



December 27, 2016

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

ATC Group Services LLC

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Re: 2016 Visual Inspection
IPL Petersburg Restricted Waste Landfill
Indianapolis Power and Light Company
Petersburg Generating Station
Petersburg, Indiana
ATC Project No. 170LF00279

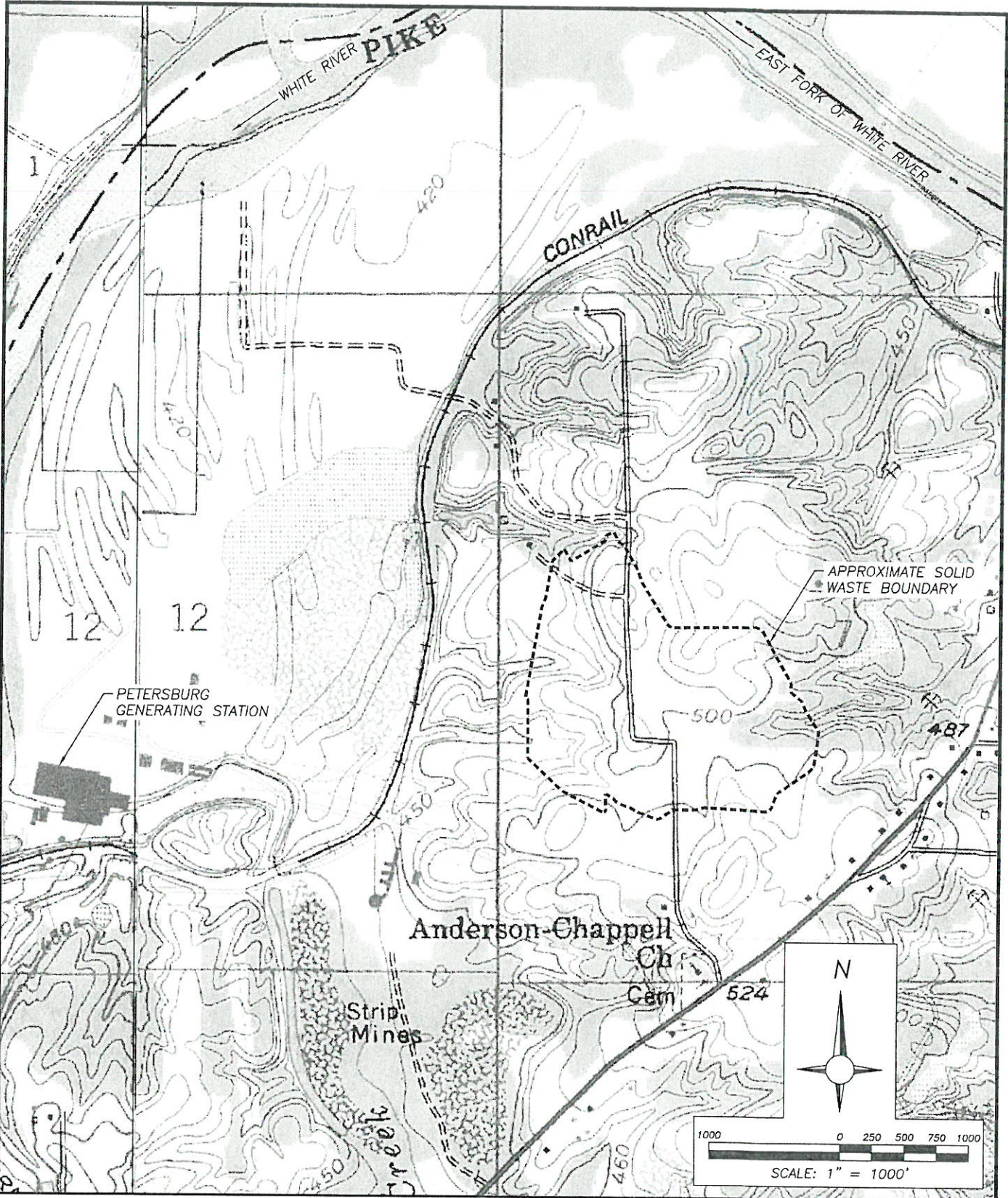
Dear Mr. Leidolf:

ATC Group Services LLC (ATC) is pleased to present the findings of the November 10, 2016 Visual Site Inspection of the IPL Petersburg Generating Station Type III Restricted Waste Landfill. 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 landfill 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 landfill 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 inspecting landfills, it should not be considered as a warranty or guaranty of the future performance/safety of the landfill.

The landfill inspection was completed by David Stelzer and Charles Dewes of ATC Group Services LLC (ATC). The weather conditions during the inspection were approximately 60°F and sunny. Contained herein is a summary of the engineering observations of the landfill including condition of the cover soils, grading and erosion, vegetation, haul roads, perimeter ditches, down drain channels, riprap areas, culverts and other adjacent structures. The landfill system features are highlighted on the attached Site Plan in Appendix A.

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VICINITY MAP

IPL PETERSBURG GENERATING STATION
TYPE III RESTRICTED WASTE LANDFILL
PETERSBURG, INDIANA

Project Number: 170LF00274		Drn. By: WS
Drawing File: SEE LOWER LEFT		Ckd. By: CD
Date: 9/16	Scale: AS SHOWN	App'd By:



Figure:
1

The IPL Petersburg Generating Station Type III Restricted Waste Landfill is located about four (4) miles north of the City of Petersburg in Pike County, Indiana west of State Road 57 (Figure 1). The landfill encompasses an area of approximately 123.7 acres inside the Solid Waste Boundary. The Petersburg Type III RWS Landfill operates under Indiana Department of Environmental Management (IDEM) Permit Number 63-2.

The 2016 Annual Inspection addresses the following items outlined in CFR 257.84(b)(2):

- i. Any changes in geometry of the structure since the previous annual inspection;
- ii. The approximate volume of CCR contained in the unit at the time of inspection;
- iii. Any appearances of an actual or potential structural weakness of the CCR unit;
- iv. Any other change (s) which may have affected the stability or operation of the CCR Unit since the last annual inspection.

Changes in Structural Geometry

Observed geometry changes during the 2016 Petersburg landfill inspection were minor and consisted mainly of grading measures and vegetation improvements. Engineering observations were grouped into three inspection zones called out on the Site Map in Appendix A. The zone descriptions, observations and recommendations are as follows:

Zone A Partial Closure Area – North and West Sideslopes

A 33.8 acre area on the northern and western slopes of the landfill have received partial closure certification from the Indiana Department of Environmental Management (IDEM). In general, this area has a good soil cover and is well-vegetated. Since the time of the 2015 inspection additional improvements have been made to fill in ruts and overseed sparsely vegetated areas.

1. Good vegetation exists along the majority of the west and north slopes (Location 1).
2. A few areas along the west-central slope still have bare soil areas and/or ruts.
 - o Recommendation: Fill in ruts and overseed bare soil areas as needed (See Location 2).
3. An improvised access road at the northwest corner of the landfill has caused some minor rutting and erosion.
 - o Recommendation: Fill in ruts and overseed bare soil areas as needed (See Location 3).
4. Some culvert inlets passing through erosion control berms along downchute alignments have become partially blocked due to settlement of riprap and debris accumulation (See Location 4). One culvert on the northeast corner of the landfill has been damaged. (See Location 5).
 - o Recommendation: Establish a regular visual inspection and maintenance program for all culverts along downchute paths and perimeter ditches. Remove blockage and repair damaged culverts to restore proper flow.

Zone B Intermediate Cover Area – Top and East Sideslope

The IDEM permit conditions include the use of fixated scrubber sludge as an alternative intermediate cover. In accordance with those permit conditions the majority of the intermediate cover on the top and east sideslope of the landfill consists of fixated scrubber sludge. It is our understanding that plans are being made to apply a soil cover to this area during 2017.

1. At the time of inspection, the intermediate cover was well compacted with areas of minor erosion noted (See Locations 6, 7, and 8).
 - Recommendation: Repair erosion features and control transport of eroded material until soil cover is applied.
2. Downcutting has occurred along the left side (oriented facing uphill) of the haul road leading to the top of the slope (See Location 9).
 - Recommendation: Fill in the downcutting channel, place erosion protection and overseed the bare soil.

Zone C Intermediate Cover Area – South Sideslope

The southern slope of the Petersburg landfill is generally well vegetated and carries traffic from the main haul road leading to the top of landfill.

1. Good vegetation exists along the majority of the south slope and southeast corner (Locations 10 and 11).
2. An area of sparse vegetation was noted near the convergence of haul roads on the south sideslope (See Location 12).
 - Recommendation: Overseed the bare soil surface.
3. Gully erosion has formed along the left overbank (oriented facing downstream) of the riprap downchute channel at the southwest corner of the landfill. Flow is bypassing the channel at the base and creating a separate overland flow channel which undermines the soil cover for that area (See Location 13).
 - Recommendation: Fill in the erosion gully and regrade soil along the bank to slope towards channel center. Overseed the area and utilize an erosion control mat until vegetation is established.
4. Downcutting has occurred in ditches along both sides of the haul road leading up to the top of the landfill (See Location 14).

- Recommendation: Fill in undercut areas in channels adjacent to the haul road and repair vegetative cover. Utilize erosion control mat until vegetation is established.
5. The perimeter ditch near the haul road entrance at the northeast corner of the landfill has erosion along the overbank (Location 15).
- Place erosion control protection along the side of the channel bank where erosion has occurred and revegetate.

CCR Volume

There is an approved 43 acre expansion area east of the existing landfill however that area has had no development at this time. Currently, landfill operations are limited to the original landfill footprint.

Based on IPL surveying information at the time of the inspection, there is approximately 7,043,808 cubic yards of CCR material placed in the landfill unit.

Structural Integrity

Slopes appear to be stable and no signs of sloughing or subsidence were detected during this visual inspection.

Stability and Operation

The landfill is generally in good condition and well vegetated in most places. No significant deficiencies were noted and operation of the landfill unit at this time is not expected to be adversely affected by any items detected during the 2016 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



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



Charles Dewes, E.I., CFM ^{DB}
Project Engineer

Copies: Erv Liedolf (3)

Appendix A: Site Plan



LEGEND:
 --- PERMITTED LANDFALL BOUNDARY
 - - - PARTIAL CLOSURE AREA - ZONE A
 [Hatched Box] INTERMEDIATE COVER AREA - ZONE B
 [Dotted Box] INTERMEDIATE COVER AREA - ZONE C

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 Drawing Title:
 2016 LANDFILL INSPECTION
 IFL PETERSBURG GENERATING STATION



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DATE	TIME	BY	REVISION