GEI Consultants

Consulting
Engineers and
Scientists

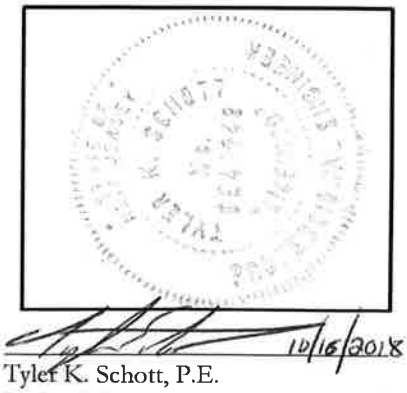
Annual CCR Inspection Report

Hudson Generating Station, Jersey City, New Jersey

Submitted to:
PSEG Fossil LLC
80 Park Plaza
Newark, NJ 07101

Submitted by:
GEI Consultants, Inc.
18000 Horizon Way, Suite 200
Mt. Laurel, New Jersey 08054

October 16, 2018
Project 1504710



Tyler K. Schott, P.E.
Project Manager
NJ PE #24GE04794800
Date:

Table of Contents

Figures

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1. Introduction

On behalf of PSEG Fossil (PSEG), GEI Consultants, Inc. (GEI) has prepared the 2018 Annual Inspection Report for the Coal Combustion Residuals (CCR) Surface Impoundments[1] (Impoundments) at the Hudson Generating Station. There are three inactive Impoundments:

- North Fly Ash Pond;
- South Fly Ash Pond; and
- Bottom Ash Pond.

This report was prepared to meet the requirements of 40 CFR 257.83.

1.1 Description of Impoundments

The site of the former Hudson Generating Station is owned by PSEG Power LLC and located north of the intersection of Duffield and Van Keuren Avenues in Jersey City, New Jersey. The facility has an inactive 6-acre North Fly Ash Pond, an inactive 6.6-acre South Fly Ash Pond and an inactive 3-acre Bottom Ash Pond that ceased receiving CCR prior to October 19, 2015. A Notice of Intent (NOI) to initiate closure of the inactive CCR Impoundment under 40 CFR Section 257.100 of the CCR Rule was posted on the PSEG CCR Rule Compliance Data and Information website on November 6, 2015. Though closure by removal of all CCR is no longer permitted under Section 257.100 of the CCR Rule, closure of these inactive CCR Impoundments is proceeding in accordance with Section 257.102 of the CCR Rule and the associated 547-day timeframe extension. As documented in a December 8, 2017 memo prepared by GEI, CCR removal was completed on November 16, 2017.

[1] CCR Surface Impoundment is defined at 40 CFR 257.53.

2. 2018 Annual Inspection

2.1 Annual Inspection

As required by 40 CFR 257.83(b), inspections of all CCR surface impoundments were performed by a qualified professional engineer (Tyler K. Schott, NJ P.E. #24GE04794800) on multiple occasions. The July 19, 2017 CCR inspection served as the initial annual inspection. As discussed above, the Impoundments are inactive and have been closed through removal of all CCR. The berms surrounding each Impoundment are still present and were inspected as part of the annual inspection conducted on July 30, 2018.

2.1.1 Review of Available Information

In accordance with 257.83(b)(i), a review of available information regarding the status and condition of the CCR unit is required. There were no available design documents or impoundment testing data to perform a quantitative analysis of the berm condition. Based on the visual observations of the impoundments during inspections, and the inactive/closed status of the Impoundments, quantitative evaluation of each impoundment was not necessary.

2.1.2 Visual Inspection of the CCR unit

In accordance with 257.83(b)(ii), a visual inspection of the CCR unit to identify signs of distress or malfunction is required. The Impoundments are inactive and have been closed. Based on the visual inspections, the berms are good condition and no signs of distress or malfunction were observed.

2.1.3 Visual Inspection of Hydraulic Structures

In accordance with 257.83(b)(iii), a visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit is required. The hydraulic control structures were inspected visually by facility personnel on a weekly basis and subject to frequent inspection by a licensed Professional Engineer. Throughout the process of closure by removal, the hydraulic control structures have remained intact, structurally sound, and unused. Discharge from the Hudson facility impoundments would require a significant volume of water and positive action from facility personnel to initiate discharge.

3. Annual Inspection Report

The following items are required to be inspected and included in the inspection report as stated in 40 CFR 257.83(2).

3.1 Changes in Geometry

No changes in geometry were noted. The Impoundments have undergone closure by removal.

3.2 Location and Type of Instrumentation

Historically, there was no instrumentation used to evaluate the status and condition of the berms associated with facility CCR impoundments. Due to the closure of the Impoundments, no new instrumentation is required for monitoring.

3.3 Depths and Elevations

Evaluation of the minimum, maximum and present depth and elevation of the impounded water is required as part of the inspection report. The CCR has been fully removed and therefore this portion of the annual inspection is not applicable.

3.4 Storage Capacity

The Impoundments have undergone closure and therefore have no storage capacity available for CCR.

3.5 Volumes

The CCR has been fully removed and therefore this portion of the annual inspection is not applicable.

3.6 Structural Weakness

The Impoundments have undergone closure. The berms surrounding the Impoundments remain unchanged. There were no observed structural weaknesses in the Impoundments.

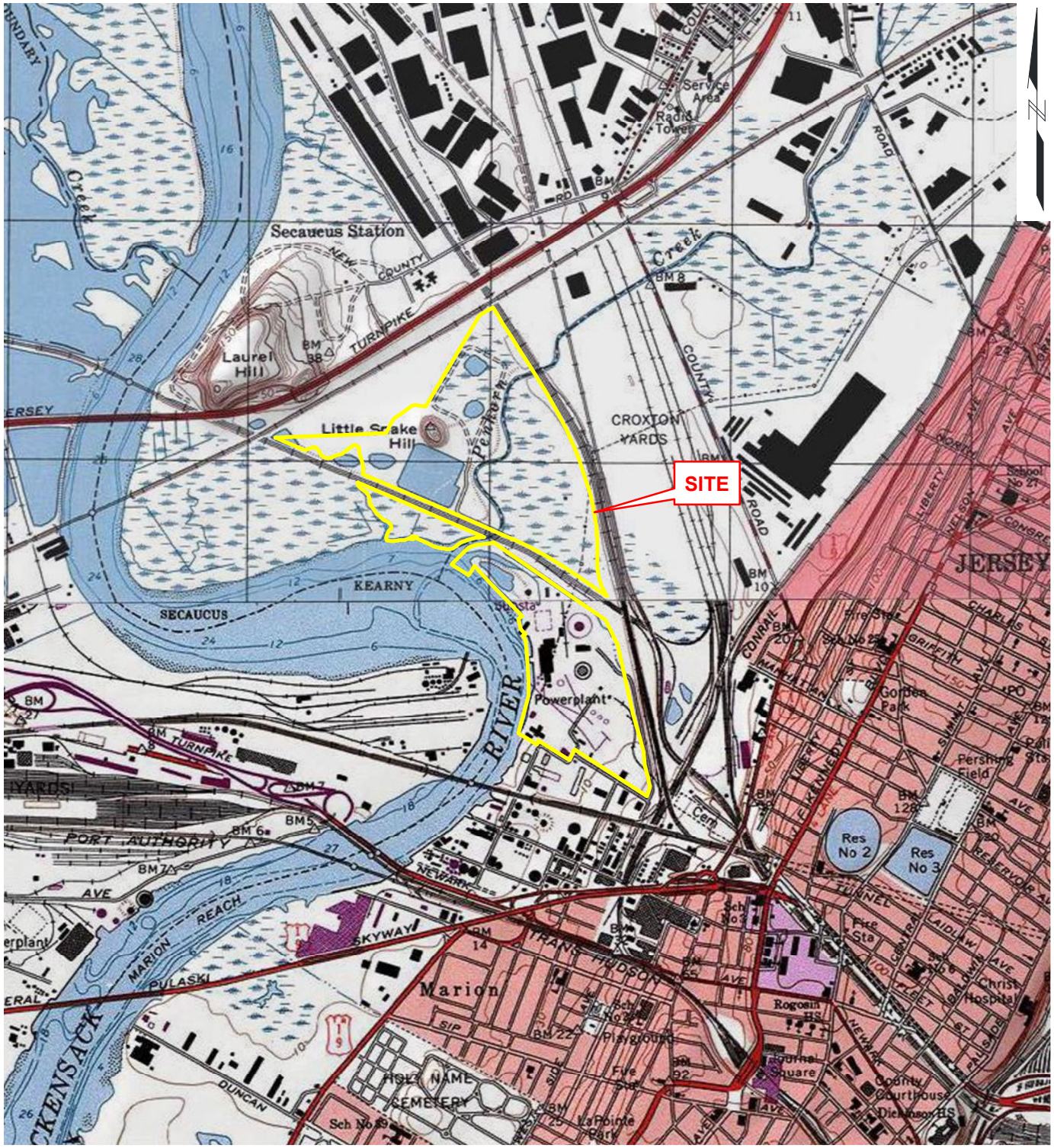
3.7 Other Noted Changes

As discussed throughout, the Impoundments are closed. Many of the inspection items required by 40 CFR 257.83(2) and discussed above are not applicable as the CCR has been removed.

3.8 Deficiency Identified

No deficiencies were observed as part of the annual inspection activities for the Impoundments.

Figures



SOURCE:

1. USGS TOPOGRAPHIC MAP ACCESSED VIA ARCGISONLINE.COM

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SCALE: 1" = 2000'

Annual CCR Inspection Report PSEG - Hudson Jersey City, New Jersey	GEI Consultants	SITE LOCATION MAP
PSEG Power, LLC New Jersey	Project 1504710	August 2017 Fig. 1

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SOURCE:
1. AERIAL FROM ESRI WORLD IMAGERY - 2017.

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SCALE: 1" = 800'

Annual CCR Inspection Report
PSEG - Hudson
Jersey City, New Jersey

PSEG Power, LLC
New Jersey

GEI Consultants

SITE PLAN

Project 1504710 | October 2018 | Fig. 2

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FORMER NORTH FLY ASH POND

FORMER SOUTH FLY ASH POND

AS-BUILT CONTOUR

PENHORN CREEK

CONRAIL

(NEW YORK AND GREENWOOD LAKE BRANCH)

FLY ASH DISCHARGE PIPE

LEGEND

▲ BM–1	SURVEY CONTROL MONUMENT
PL	PROPERTY LINE (APPROXIMATE)
50	EXISTING GROUND SURFACE CONTOUR
	ROAD
X X X	FENCE
	BUILDINGS
PIPE	PIPE
TOWER	ELECTRIC TOWER
	RAILROAD TRACKS
OH	OVERHEAD ELECTRIC
7	PROPOSED RESTORATION CONTOUR

NOTES:

1. HORIZONTAL DATUM BASED ON NEW JERSEY STATE PLANE COORDINATES, NAD 83.
2. VERTICAL DATUM BASED ON NAVD 88.
3. SITE CONTOURS BASED ON HACKENSACK MEADOWLANDS LIDAR DATASET FROM APRIL 11, 2014.
4. FULL TONE AS-BUILT CONTOURS ARE BASED ON AS-BUILT SURVEY DATA FROM HUDSON GENERATING STATION, WASTE WATER TREATMENT SYSTEM, ASH PONDS, CONSTRUCTION OF SLURRY TRENCH CUTOFF BY WOODWARD-CLYDE CONSULTANTS DATED 1982.

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SCALE: 1" = 60'

April 2018 CCR Report
PSEG - Hudson
Jersey City, New Jersey

PSEG Power, LLC
New Jersey

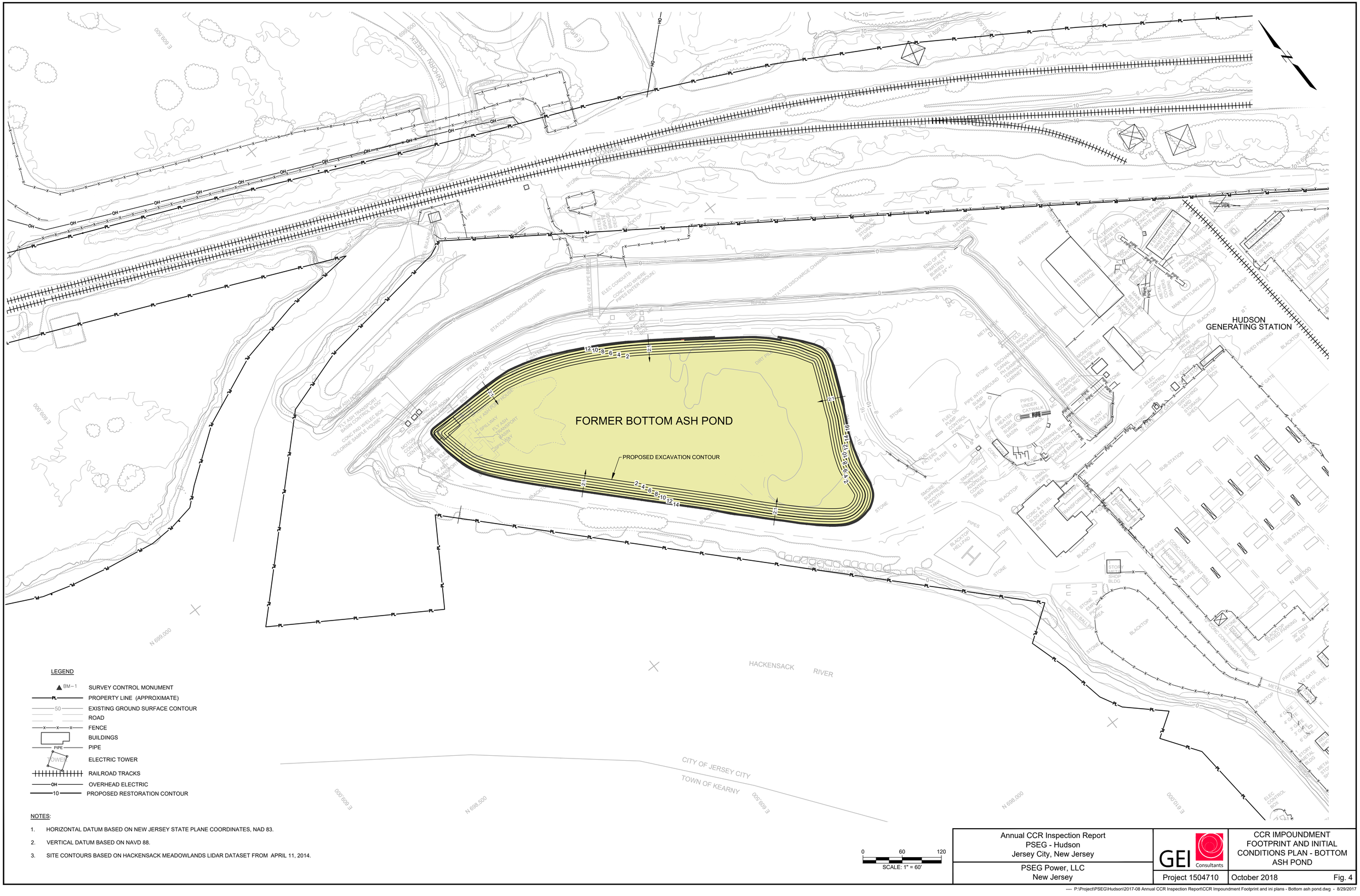
GEI Consultants

Project 1504710

CCR IMPOUNDMENT FOOTPRINT AND INTIAL CONDITIONS PLAN - NORTH AND SOUTH FLY ASH PONDS

October 2018 Fig. 3

---- P:\Project\PSEG\Hudson\2017-08 Annual CCR Inspection Report\CCR Impoundment Footprint and ini plans - ash ponds.dwg - 8/29/2017



LEGEND

- BM–1 — SURVEY CONTROL MONUMENT
- PL — PROPERTY LINE (APPROXIMATE)
- 50 — EXISTING GROUND SURFACE CONTOUR
- ROAD
- FENCE
- BUILDINGS
- PIPE — PIPE
- TOWER — ELECTRIC TOWER
- RAILROAD TRACKS
- OH — OVERHEAD ELECTRIC
- 10 — PROPOSED RESTORATION CONTOUR

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SCALE: 1" = 60'

Annual CCR Inspection Report
PSEG - Hudson
Jersey City, New Jersey

PSEG Power, LLC
New Jersey

GEI Consultants

CCR IMPOUNDMENT FOOTPRINT AND INITIAL CONDITIONS PLAN - BOTTOM ASH POND

Project 1504710 | October 2018 | Fig. 4

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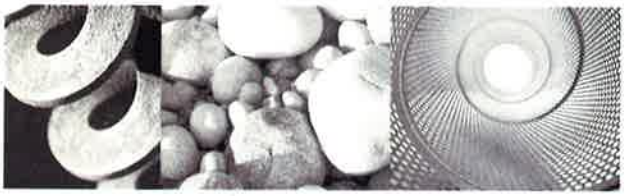

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Hudson Generating Station, Hudson, New Jersey

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80 Park Plaza
Newark, NJ 07101

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GEI Consultants, Inc.
18000 Horizon Way, Suite 200
Mt. Laurel, New Jersey 08054

October 27, 2017
Project 1504710

Tyler K. Schott, P.E.
Project Manager
NJ PE #24GE04794800
Date: October 27, 2017

Table of Contents

Figures

AUTHOR INITIALS:admin initials

Document1

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On behalf of PSEG Fossil (PSEG), GEI Consultants, Inc. (GEI) has prepared the 2017 Annual Inspection Report for the Coal Combustion Residuals (CCR) Surface Impoundments[1] (Impoundments) at the Hudson Generating Station. There are three inactive Impoundments:

- North Fly Ash Pond;
- South Fly Ash Pond; and
- Bottom Ash Pond.

This report was prepared to meet the requirements of 40 CFR 257.83.

1.1 Description of Impoundments

The Hudson Generating Station is owned by PSEG Power and located north of the intersection of Duffield and Van Keuren Avenues in Jersey City, New Jersey. The facility maintains a 6-acre North Fly Ash Pond, a 6.6-acre South Fly Ash Pond and a 3-acre Bottom Ash Pond that ceased receiving CCR prior to October 19, 2015. A Notice of Intent (NOI) to initiate closure of the CCR impoundment under Section 257.100 of the CCR Rule was posted on the PSEG CCR Rule Compliance Data and Information website on November 6, 2015 and the Impoundments are currently undergoing closure by removal of CCR. Though closure by removal of all CCR is no longer permitted under Section 257.100 of the CCR, Closure of these CCR impoundments are proceeding in accordance with Section 257.102 of the CCR rule and the associated 547-day timeframe extension.

[1] CCR Surface Impoundment is defined at 40 CFR 257.53.

2. 2017 Annual Inspection

2.1 Annual Inspection

As required by 40 CFR 257.83(b), inspections of all CCR surface impoundments were performed by a qualified professional engineer (Tyler K. Schott, NJ P.E. #24GE04794800) on multiple occasions. The July 19, 2017 CCR inspection served as the initial annual inspection. As discussed above, the Impoundments are inactive and in the process of closure by removal. The berms surrounding each Impoundment are still present and were inspected as part of the annual inspection.

2.1.1 Review of Available Information

In accordance with 257.83(b)(i), a review of available information regarding the status and condition of the CCR unit is required. There were no available design documents or impoundment testing data to perform a quantitative analysis of the berm condition. Based on the visual observations of the impoundments during weekly inspections, a review of historical aerial photographs depicting the impoundment area, the inactive status of the impoundments and the advancement of the closure process to date, quantitative evaluation of each impoundment was not necessary.

2.1.2 Visual Inspection of the CCR unit

In accordance with 257.83(b)(ii), a visual inspection of the CCR unit to identify signs of distress or malfunction is required. The Impoundments are inactive and in the process of closure. Based on the visual inspections, the berms are good condition and no signs of distress or malfunction were observed.

2.1.3 Visual Inspection of Hydraulic Structures

In accordance with 257.83(b)(iii), a visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit is required. The hydraulic control structures were inspected visually by facility personnel on a weekly basis and subject to frequent inspection by a licensed Professional Engineer. Throughout the process of closure by removal, the hydraulic control structures have remained intact, structurally sound, and unused. Discharge from the Hudson facility impoundments requires significant volumes of water to accumulate in the impoundments and positive action from facility personnel to initiate discharge.

3. Annual Inspection Report

The following items are required to be inspected and included in the inspection report as stated in 40 CFR 257.83(2).

3.1 Changes in Geometry

No changes in geometry were noted. The Impoundments are undergoing closure by removal and excavation activities are on-going. Throughout CCR closure, the berms surrounding the Impoundments continue to be effective at preventing discharges of accumulated storm water and CCR.

3.2 Location and Type of Instrumentation

Historically, there was no instrumentation used to evaluate the status and condition of the berms associated with facility CCR impoundments. Due to the in-progress closure of the Impoundments, no new instrumentation is required for monitoring.

3.3 Depths and Elevations

Evaluation of the minimum, maximum and current depth and elevation of the impounded water is required as part of the inspection report. The water is currently being managed as part of closure activities. No more than one to two feet of water is present at any given time. Water levels are maintained at over 25 feet below the top of berm elevation in the Bottom Ash Pond and approximately 13 feet below the top of berm elevation in the North and South Fly Ash Ponds.

Due to progress of CCR closure, the amount of CCR present in the impoundments is variable. Below is a table with the berm height and area, with the maximum volume for potential CCR. Although, as discussed, the ponds are inactive and undergoing closure and the CCR is being managed as part of that process.

Impoundment	**CCR Impound Information**		
	Berm Height (ft. above sea level)	Area (sq. ft.)	Maximum Volume (cu. yd.)
North/South Ash Ponds	16	384,500	142,400
Bottom Ash	14	102,100	90,755

ft. – feet
sq. ft. – square feet
cu. yd. – cubic yard

3.4 Storage Capacity

The Impoundments are inactive and undergoing closure. CCR removal is approximately 90% complete. Though the collective storage capacity in the Hudson Generating Station impoundments is 233,155 cubic yards, 0 cubic yards are maintained for CCR storage.

3.5 Volumes

As discussed above, the potential collective storage capacity in the Hudson Generating station impoundments is 233,155 cubic yards with 0 cubic yards being maintained for CCR storage.

3.6 Structural Weakness

The Impoundments are undergoing closure. The berms surrounding the Impoundments, including the top-of-berm invert elevation and the overall CCR footprint, remain unchanged. There were no observed structural weaknesses in the Impoundments.

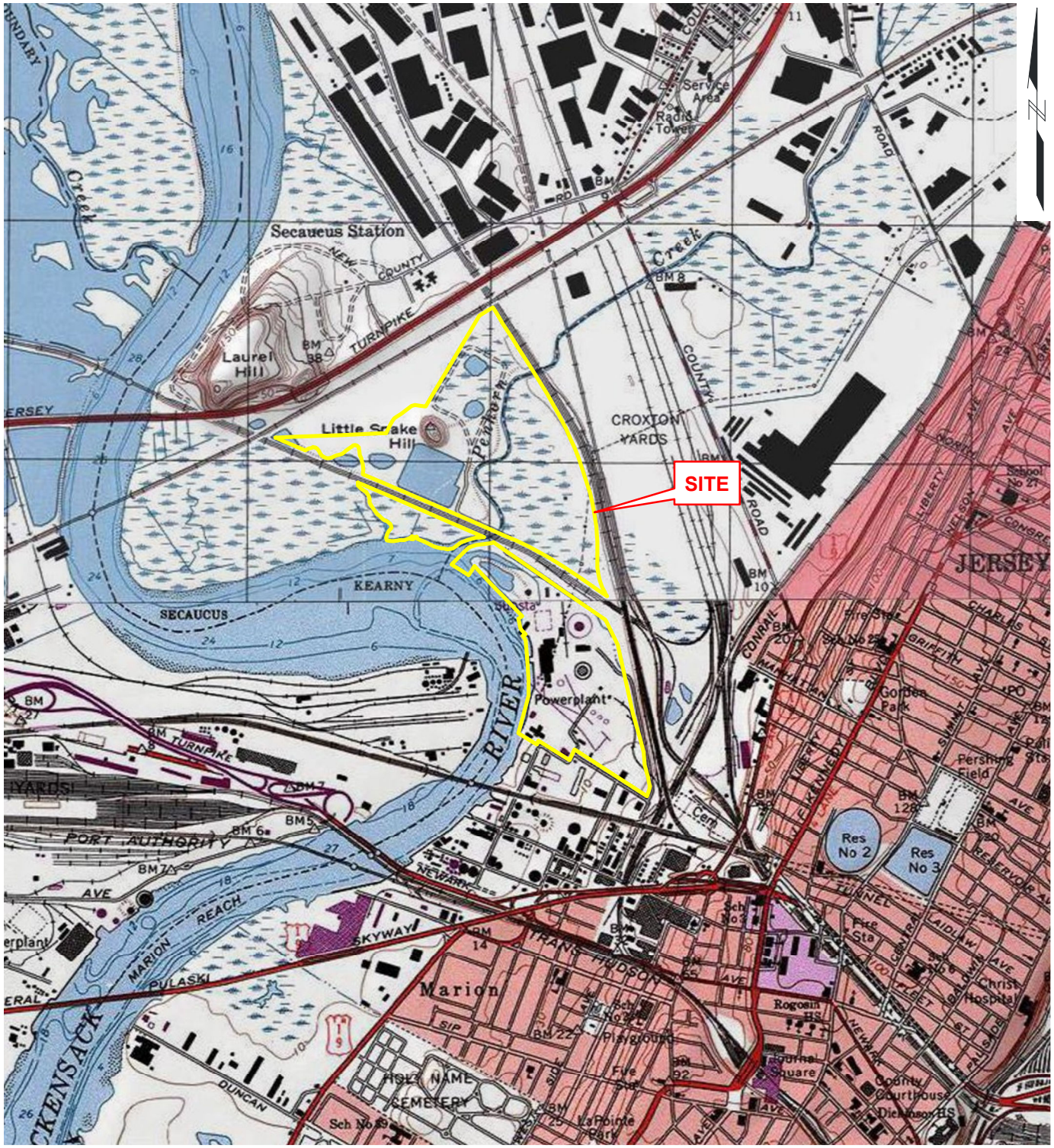
3.7 Other Noted Changes

As discussed throughout, the Impoundments are being closed. Many of the inspection items are not applicable as the CCR has been removed or is in the process of removal.

3.8 Deficiency Identified

No deficiencies were observed as part of the annual inspection activities for the Impoundments.

Figures



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1. USGS TOPOGRAPHIC MAP ACCESSED VIA ARCGISONLINE.COM

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Annual CCR Inspection Report PSEG - Hudson Jersey City, New Jersey	GEI Consultants	SITE LOCATION MAP
PSEG Power, LLC New Jersey	Project 1504710	August 2017 Fig. 1

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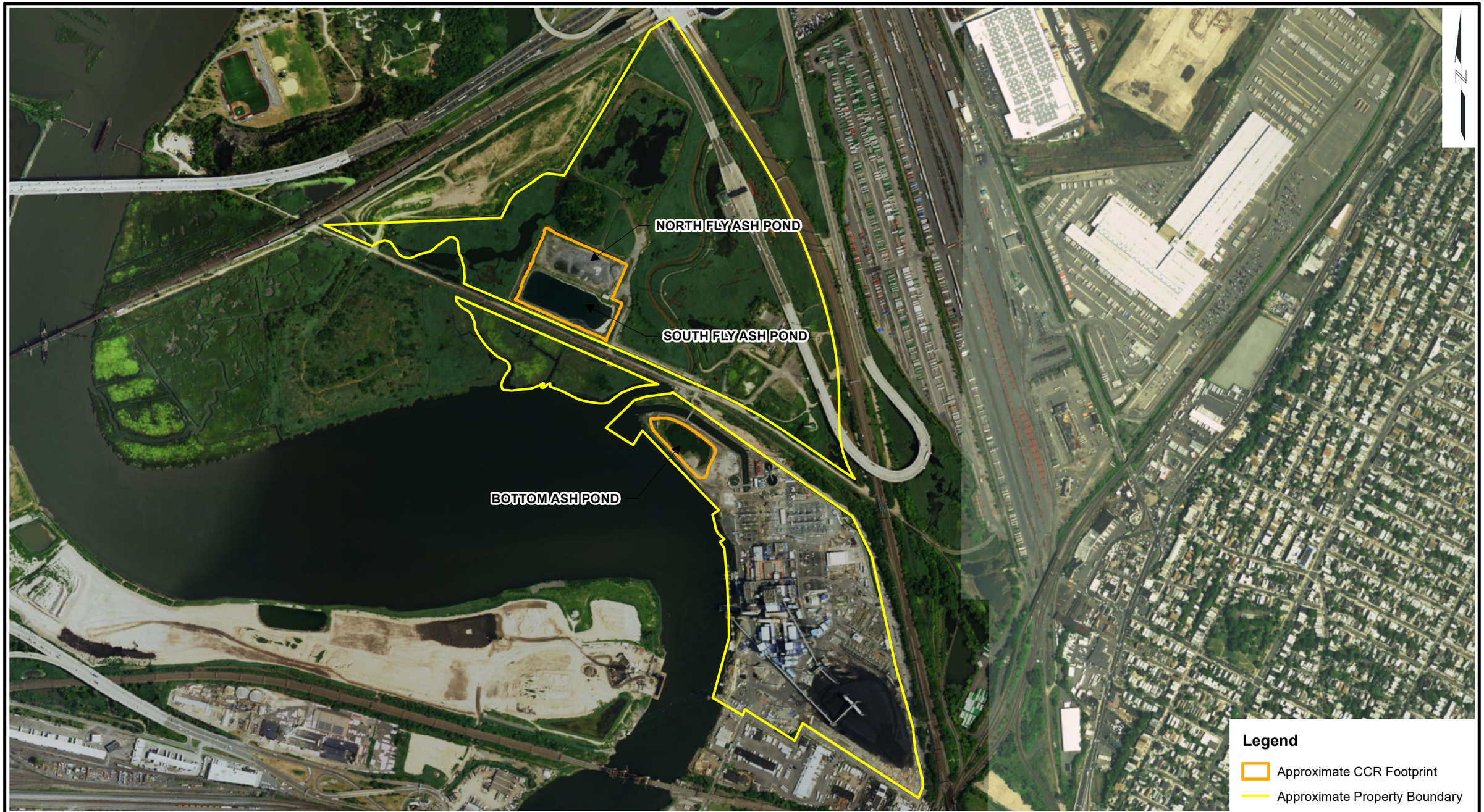

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Annual CCR Inspection Report
PSEG - Hudson
Jersey City, New Jersey

PSEG Power, LLC
New Jersey

GEI Consultants

SITE PLAN

Project 1504710 | October 2017 | Fig. 2

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NORTH FLY ASH POND

SOUTH FLY ASH POND

AS-BUILT CONTOUR

PENHORN CREEK

CONRAIL

(NEW YORK AND GREENWOOD LAKE BRANCH)

FLY ASH DISCHARGE PIPE

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CCR IMPOUNDMENT FOOTPRINT AND INITIAL CONDITIONS PLAN - NORTH AND SOUTH FLY ASH PONDS

Project 1504710 | October 2017 | Fig. 3

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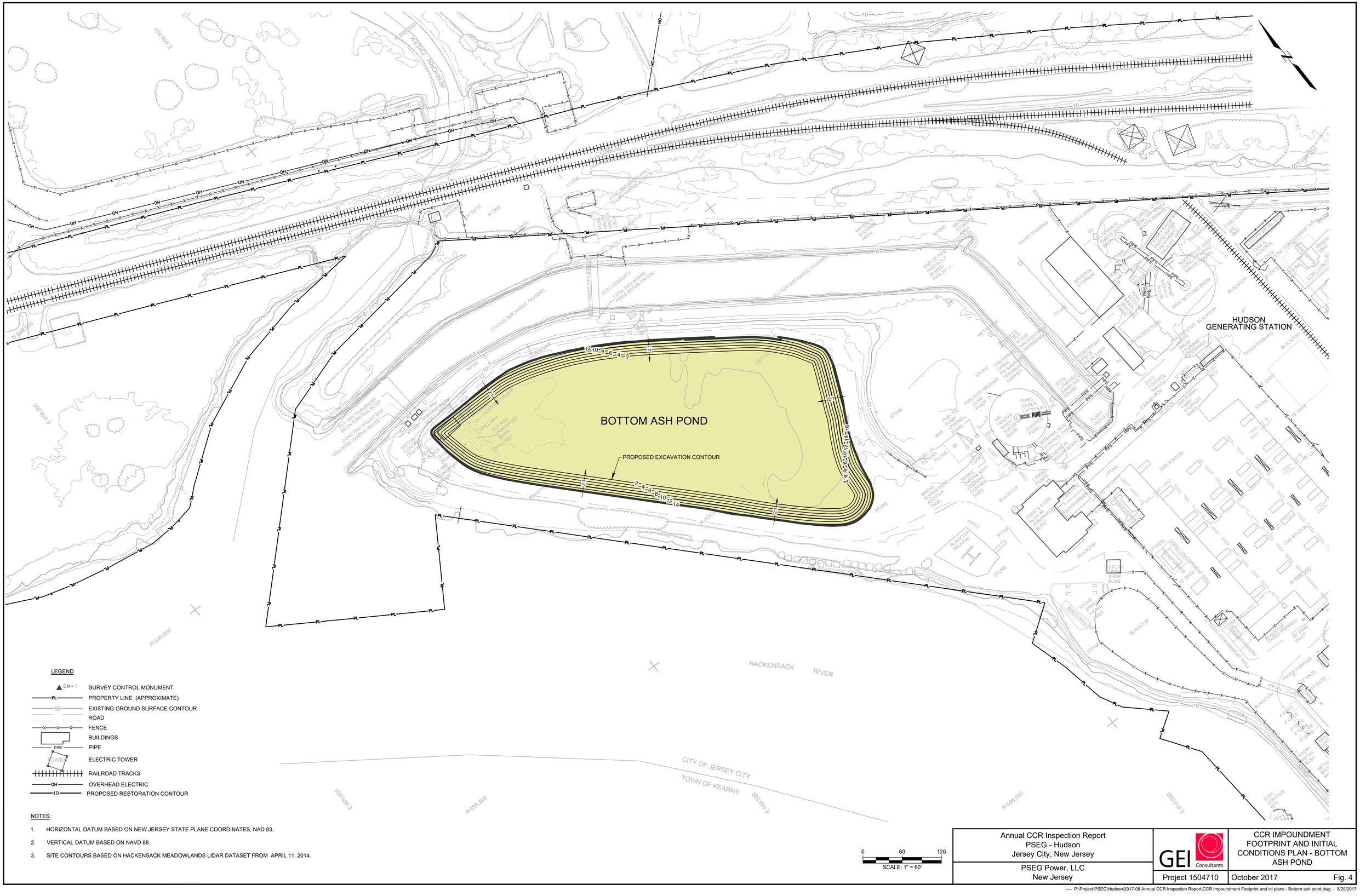

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PSEG Power, LLC New Jersey	Project 1504710	October 2017 Fig. 4

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