



DYNEGY MIDWEST GENERATION, LLC
1500 East Port Plaza Drive
Collinsville, IL 62234

Via UPS

November 30, 2017

Mr. Richard Cobb, P.G.
Deputy Division Manager
Bureau of Water; Division of Public Water Supplies
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Dear Mr. Cobb:

**Re: Vermilion Site
Ash Pond Closures Options Report**

Enclosed please find the Vermilion site ash pond closure options report requested in your May 30, 2017 letter. Options are identified for the north, old east, and new east ash ponds at our former Vermilion power station site. The report was prepared by Stantec Consulting Services, Inc. (St. Louis, MO). It includes cost estimates for the various identified ash pond closure options and costs for associated river bank stabilization options. This report should be read in conjunction with the river bank stabilization options report submitted to you on November 6, 2017 and the groundwater flow and transport modeling report that will be submitted to you in October 2018.

The probable cost estimates are based on information available at this time and should not be viewed as exact cost determinations. The estimates are based upon numerous assumptions such as the viability of beneficial reuse, ability to obtain U.S. Army Corp of Engineers permits, availability and costs of materials, etc.

At this time, Dynergy Midwest Generation, LLC (DMG) is unable to make a recommendation as to the closure option that it would like to implement for each ash pond. DMG believes it must wait until the hydrogeologic studies are completed in October 2018 to make a recommendation.

In the meantime, DMG will proceed with Section 404 permitting with Army Corp of Engineers (Louisville, KY District) for implementing river bank stabilization along the north and old east ash ponds.

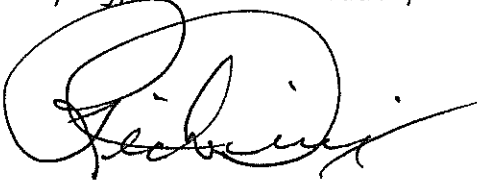
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DEC 01 2017

Div. of Public Water Supplies
Illinois EPA

We would be happy to meet with you to discuss the enclosed report. You should also feel free to call me at 618/343-7761 if you have questions about the report.

Sincerely,
Dynergy Midwest Generation, LLC by its agent Dynergy Operating Company

A handwritten signature in black ink, appearing to read "Rick Diericx", with a large, stylized initial "R" and a long horizontal flourish extending to the right.

Rick Diericx
Managing Director – Environmental Compliance

Enclosures



Stantec Consulting Services Inc.
1859 Bowles Avenue Suite 250, Fenton MO 63026-1944

November 27, 2017

File: let_vermilion_closure_IEPA_20171127

Attention: Mr. Victor Modeer, PE
Dynergy Midwest Generation, LLC
1500 Eastport Plaza Drive
Collinsville, Illinois 62234

**Reference: Closure Options
Ash Ponds Closure
Vermilion Site**

Dear Mr. Modeer,

Stantec Consulting Services Inc. (Stantec) has completed an evaluation of closure options for the North Ash Pond (NAP), Old East Ash Pond (OEAP), and New East Ash Pond (NEAP) at the Vermilion Site. For your use in responding to the letter from the Illinois Environmental Protection Agency (IEPA) to Dynergy Midwest Generation, LLC (DMG) dated May 30, 2017, please find attached a table that includes an opinion of probable cost, anticipated project duration, and a summary of each closure option evaluated. The attached figures are provided to illustrate each closure option. Details regarding the riverbank stabilization options along the North and Old East Ash Ponds are included in *Vermilion Site Riverbank Assessment* prepared by Stantec on November 2, 2017 and submitted to the IEPA by DMG on November 6, 2017. The riverbank improvements can be implemented prior to or in conjunction with closure construction.

Stantec appreciates the opportunity to support this project. If you have any questions or need additional information, please call.

STANTEC CONSULTING SERVICES INC.

Matthew Hoy, PE
Project Manager/Senior Associate
Matthew.Hoy@Stantec.com

Matt Vaughan, PE
Senior Associate
Matt.Vaughan@Stantec.com

cel/

Attachments: Table 1 – Closure Options Summary
Figure 1 – Close in Place (Option 1)
Figure 2 – Closure by Removal (Option 2)

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November 27, 2017
Mr. Victor Modeer, PE
Page 2 of 2

Figure 3 – Beneficial Re-use (Option 3)
Figure 4 – Consolidate OEAP to NAP/NEAP (Option 4)
Figure 5 – Consolidate NEAP and OEAP Layback to NAP (Option 5)

Cc. Matt Ballance



Client Dynegy Midwest Generation, LLC
 Project Name Vermilion Ash Ponds Closure
 Location Danville, IL
 Facility Vermilion Site
 Date 11/27/2017

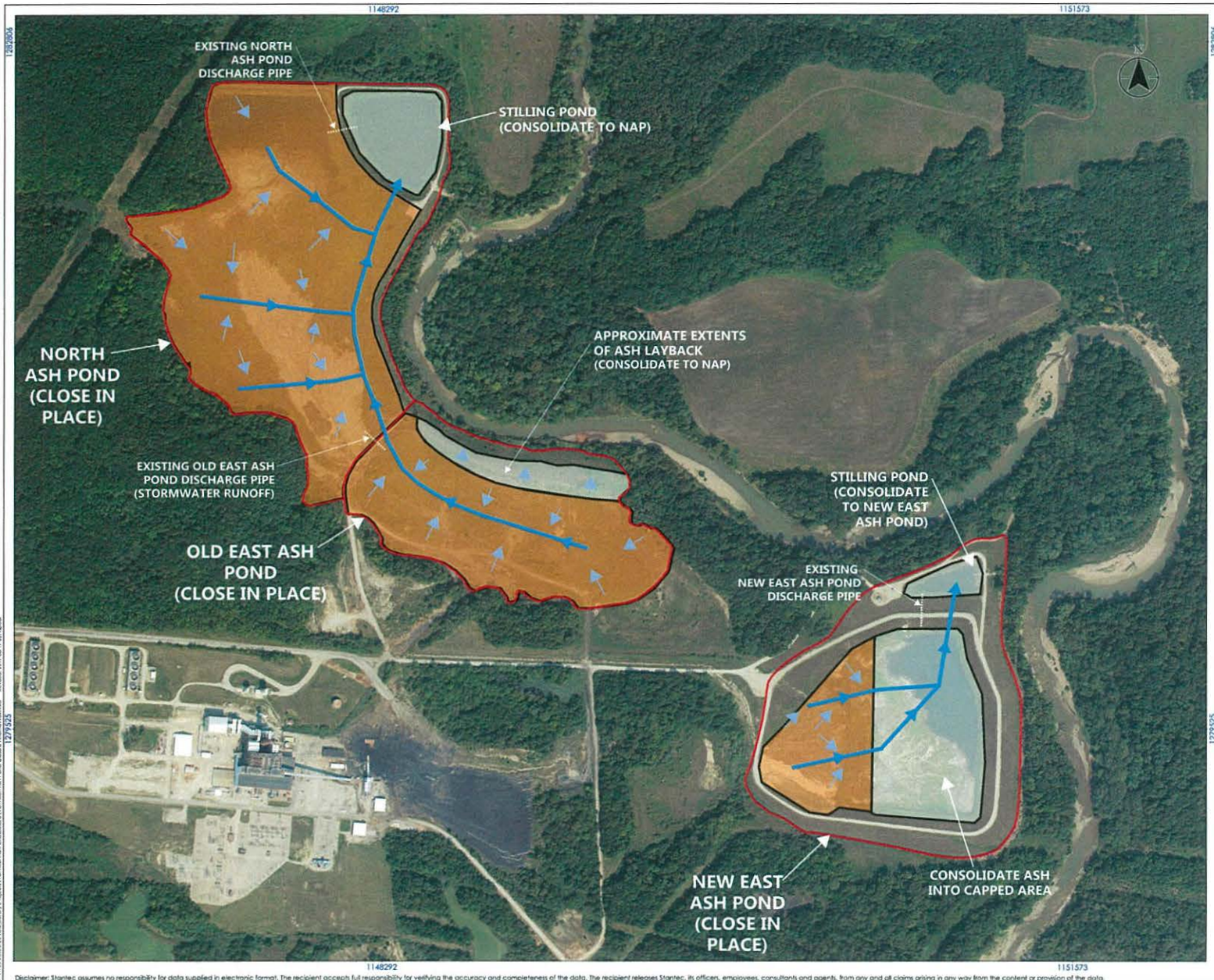
Table 1 - Closure Options Summary

	Option 1: Close in place (NAP, OEAP); Consolidate ash and close in place (NEAP) ¹	Option 2: Closure by removal (NAP, OEAP, NEAP)	Option 3: Beneficial Re-use (NAP, OEAP, NEAP)	Option 4: Consolidate OEAP to NAP/NEAP, close NAP and NEAP in place	Option 5: Consolidate NEAP and OEAP layback to NAP, close OEAP and NAP in place
Considerations					
Opinion of Probable Cost (Closure)	\$29M	\$192M	\$33M - \$145M ³	\$43M	\$32M
Anticipated Project Duration (Closure)²	2 years	5 to 10 years	10 to 20 years	3 to 5 years	2 to 3 years
Opinion of Probable Cost (Riverbank)	\$3M to \$3.5M	\$3M to \$3.5M	\$3M to \$3.5M	\$3M to \$3.5M	\$3M to \$3.5M
Anticipated Project Duration (Riverbank)²	6-12 Months	6-12 Months	6-12 Months	6-12 Months	6-12 Months
Summary	<p>Since the NAP and OEAP will remain in place, stabilize the riverbank along the OEAP and NAP, as necessary, with rock toe with live branch layering and/or a buried riprap trench.</p> <p>Contour the ash to promote positive drainage.</p> <p>Consolidate ash in NEAP to a smaller footprint on the west side prior to capping.</p> <p>The OEAP slope along the riverbank will be laid back to provide access for inspections, maintenance and installation of riverbank stabilization.</p> <p>Construct an engineered cap system over the three ash ponds.</p> <p>Drainage of post-closure surface runoff will generally be consistent with existing drainage patterns.</p>	<p>Since closure by removal will require 5-10 years, stabilize the riverbank along the OEAP and NAP, as necessary, with rock toe with live branch layering and/or a buried riprap trench.</p> <p>Moisture condition the ash, as needed, prior to loading into trucks and hauling offsite.</p> <p>Excavate the ash from the three ash ponds and dispose of it at an offsite landfill.</p> <p>Once all the ash has been removed, soil material from the existing dikes will be used to fill the bottom of the three ponds to promote positive drainage. The site will be left in a condition that will not impound water.</p>	<p>Since excavation for beneficial reuse will require 10-20 years, stabilize the riverbank along the OEAP and NAP, as necessary, with rock toe with live branch layering and/or a buried riprap trench.</p> <p>Excavate the ash from the three ash ponds, if necessary, condition it onsite, and then haul it to an offsite facility for beneficial reuse.</p> <p>Ash that does not conform to the requirements of beneficial reuse will be consolidated and capped with an engineered cap system on-site or disposed of at an offsite landfill.</p> <p>Once all the ash has been removed or consolidated, soil material from the existing dikes will be used to fill the bottom of the three ponds to promote positive drainage. The site will be left in a condition that will not impound water.</p> <p>Note: Quantity, cost, and schedule for this option may vary based on market conditions and quality of the material.</p>	<p>Since excavation for consolidation and closure will require 3-5 years, stabilize the riverbank along the OEAP and NAP, as necessary, with rock toe with live branch layering and/or a buried riprap trench.</p> <p>Excavate ash from the OEAP and place it in the NAP/NEAP.</p> <p>Consolidate ash in NEAP to a smaller footprint on the west side prior to capping.</p> <p>The NAP/NEAP will be closed in place with an engineered cap system.</p> <p>Soil fill will be placed in the bottom of the OEAP to promote positive drainage. The OEAP will be left in a condition that will not impound water.</p>	<p>Since excavation for consolidation and closure will require 2-3 years, stabilize the riverbank along the OEAP and NAP, as necessary, with rock toe with live branch layering and/or a buried riprap trench.</p> <p>Excavate ash from the NEAP and place it in the NAP.</p> <p>Lay back the OEAP slope along the riverbank to provide access for inspections, maintenance and installation of riverbank stabilization.</p> <p>Construct an engineered cap system over the NAP and OEAP.</p> <p>Once the ash is removed from the NEAP, soil fill will be placed in the bottom of the NEAP to promote positive drainage. The NEAP will be left in a condition that will not impound water.</p>
Figure	1	2	3	4	5

¹ Acronyms/Abbreviations used in the table: M (million), NAP (North Ash Pond), NEAP (New East Ash Pond), OEAP (Old East Ash Pond).

² Anticipated project duration only includes construction and does not account for design and permitting.

³ The cost range depicts the volatility of the beneficial reuse market and the differential in cost associated with capping non-conformance materials on-site vs off-site disposal at a landfill.



LEGEND

- ASH POND BORDER
 - PROPOSED DITCH
 - OVERLAND FLOW DIRECTION
 - LIMITS OF CLOSURE CAP
 - CLOSURE BY CONSOLIDATION
- 0 500 1,000
Feet

Notes

1. Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
2. Orthomogery: ESRI Online.



Project Location
Danville, IL

Prepared by T. Lawrence
Reviewed by M. Vaughan

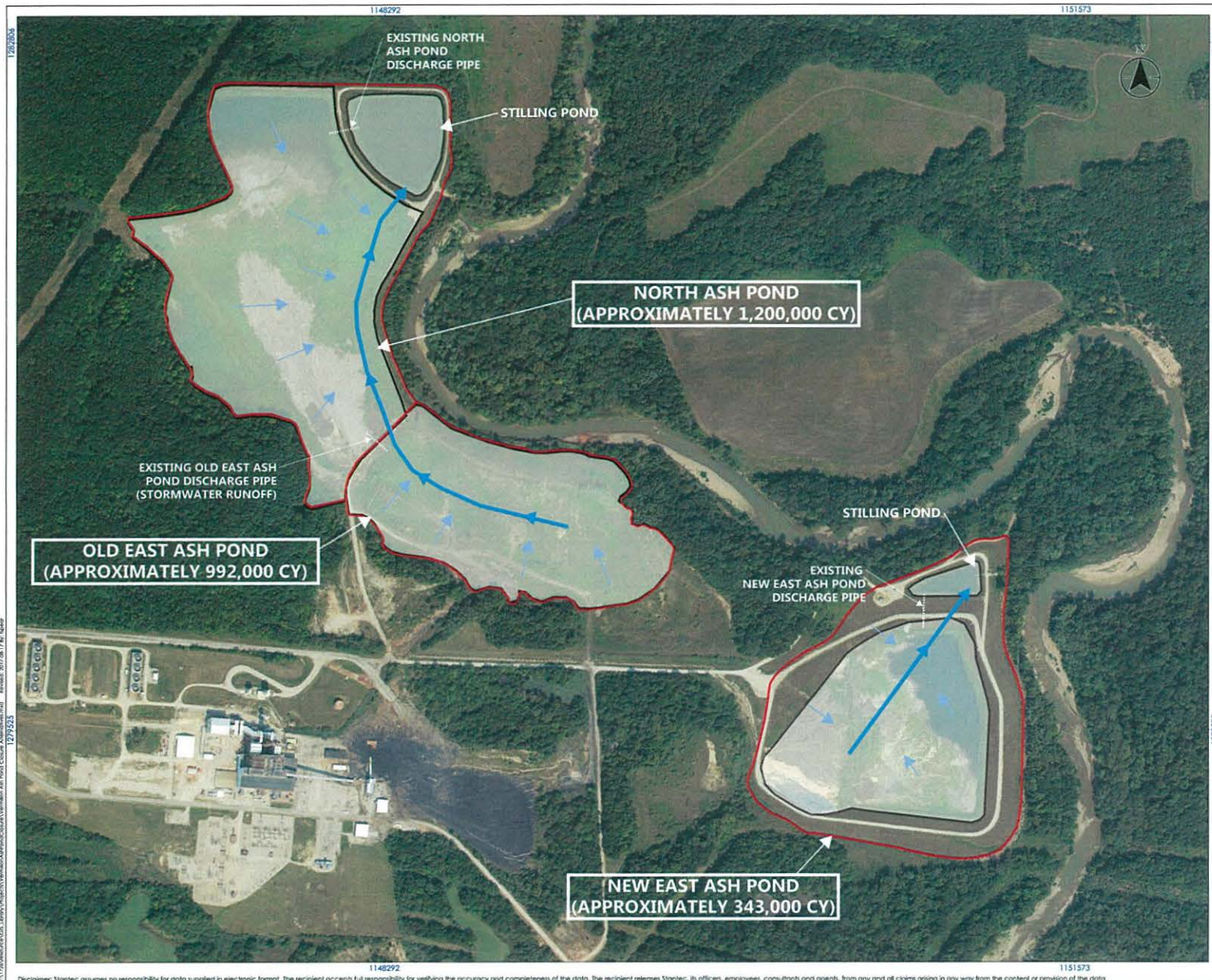
Client/Project
Client: Dynegy Midwest Generation, LLC
Title: Vermilion Site
Project: Ash Ponds Closure

Figure No.

1

Title
Option 1: Close in place (NAP, OEAP); Consolidate ash and close in place (NEAP)

ATTORNEY-CLIENT PRIVILEGED AND CONFIDENTIAL



LEGEND

- ASH POND BORDER
 - PROPOSED DITCH
 - OVERLAND FLOW DIRECTION
 - LIMITS OF ASH REMOVAL
- 0 500 1,000 Feet

Notes

1. Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
2. Orthorectified: ESRI Online.



Project Location
Danville, IL

Prepared by I. Lawrence
Reviewed by M. Vaughan

Client/Project:

Client: Dynegy Midwest Generation, LLC
Title: Vermilion Site
Project: Ash Ponds Closure

Figure No.

2

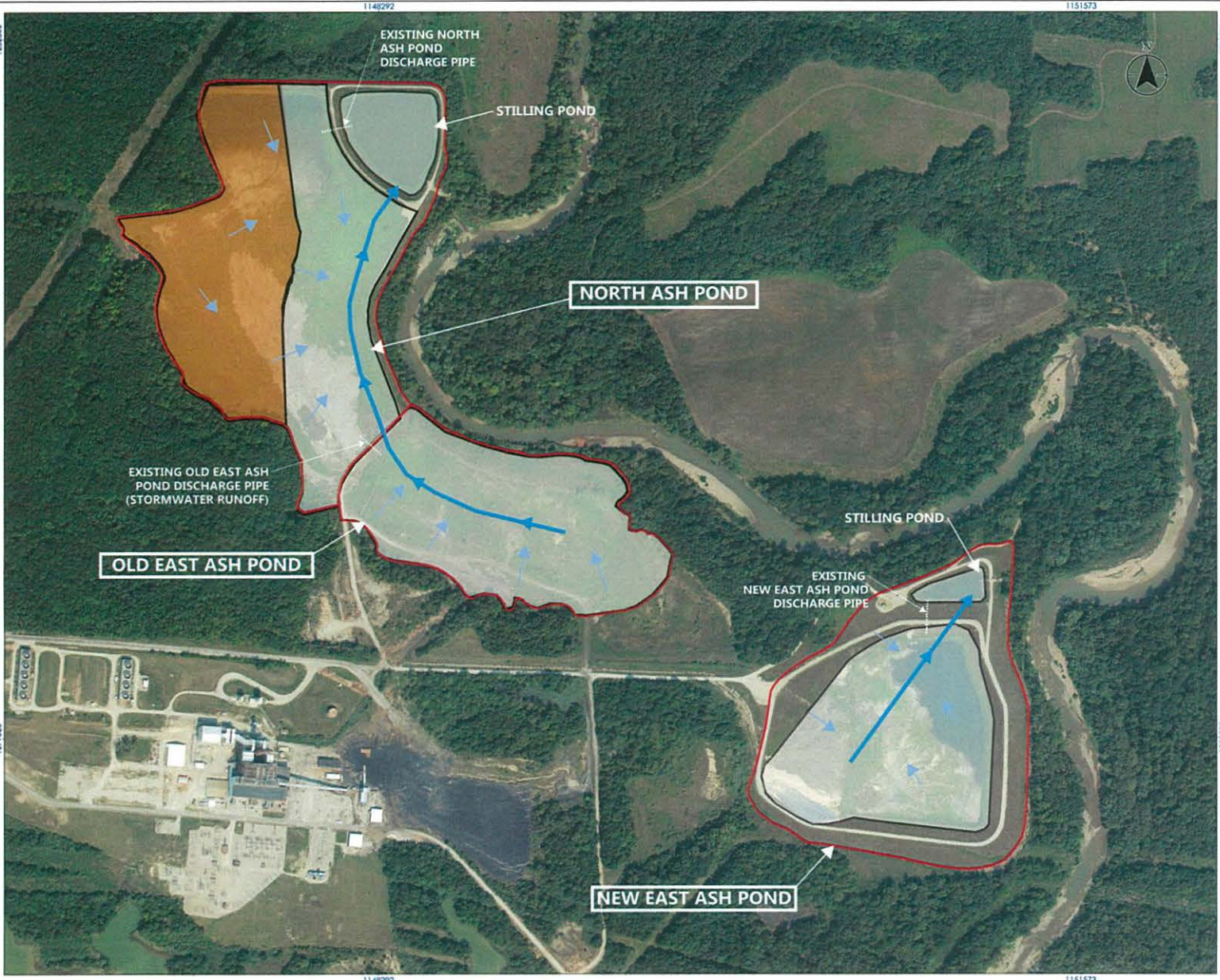
Title

Option 2: Closure by Removal (NAP, OEAP, NEAP)

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LEGEND

- ASH POND BORDER
 - PROPOSED DITCH
 - OVERLAND FLOW DIRECTION
 - LIMITS OF ASH REMOVAL
 - LIMITS OF CAPPED NON-CONFORMANT CCR MATERIAL
- 0 500 1,000 Feet

Notes

1. Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
2. Orthorectified; ESRI Online.



Project Location
Danville, IL

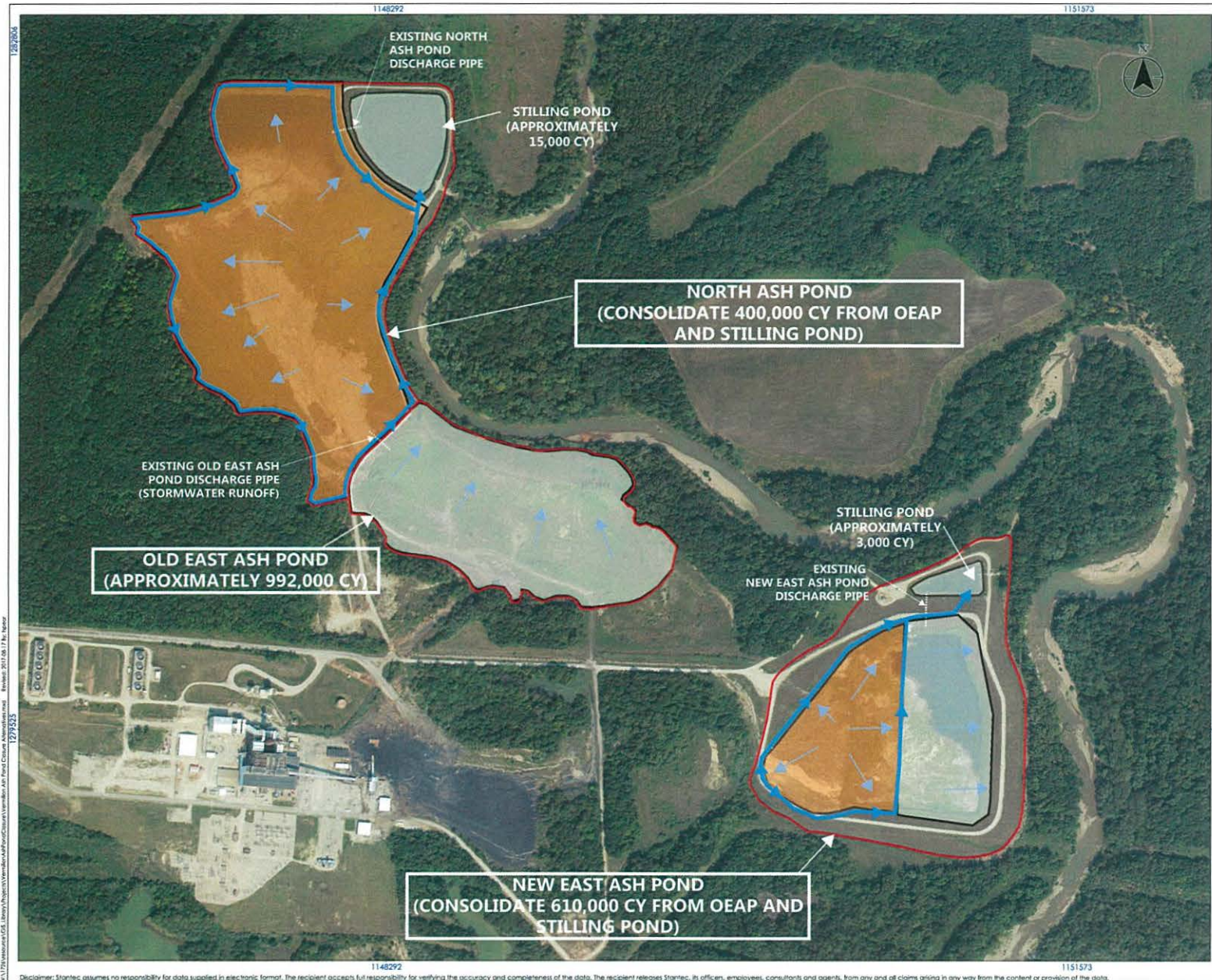
Prepared by I. Lawrence
Reviewed by M. Vaughan

Client/Project:
Client: Dynegy Midwest Generation, LLC
Title: Vermilion Site
Project: Ash Ponds Closure

Figure No.:
3
Title:
Option 3: Beneficial Re-use (NAP, OEAP, NEAP)

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LEGEND

- ASH POND BORDER
 - PROPOSED DITCH
 - OVERLAND FLOW DIRECTION
 - LIMITS OF CLOSURE CAP
 - CLOSURE BY CONSOLIDATION
- 0 500 1,000 Feet

Notes

1. Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
2. Orthomogery: ESRI Online.



Project Location
Danville, IL

Prepared by T. Lawrence
Reviewed by M. Vaughan

Client/Project
Client: Dynegy Midwest Generation, LLC
Title: Vermilion Site
Project: Ash Ponds Closure

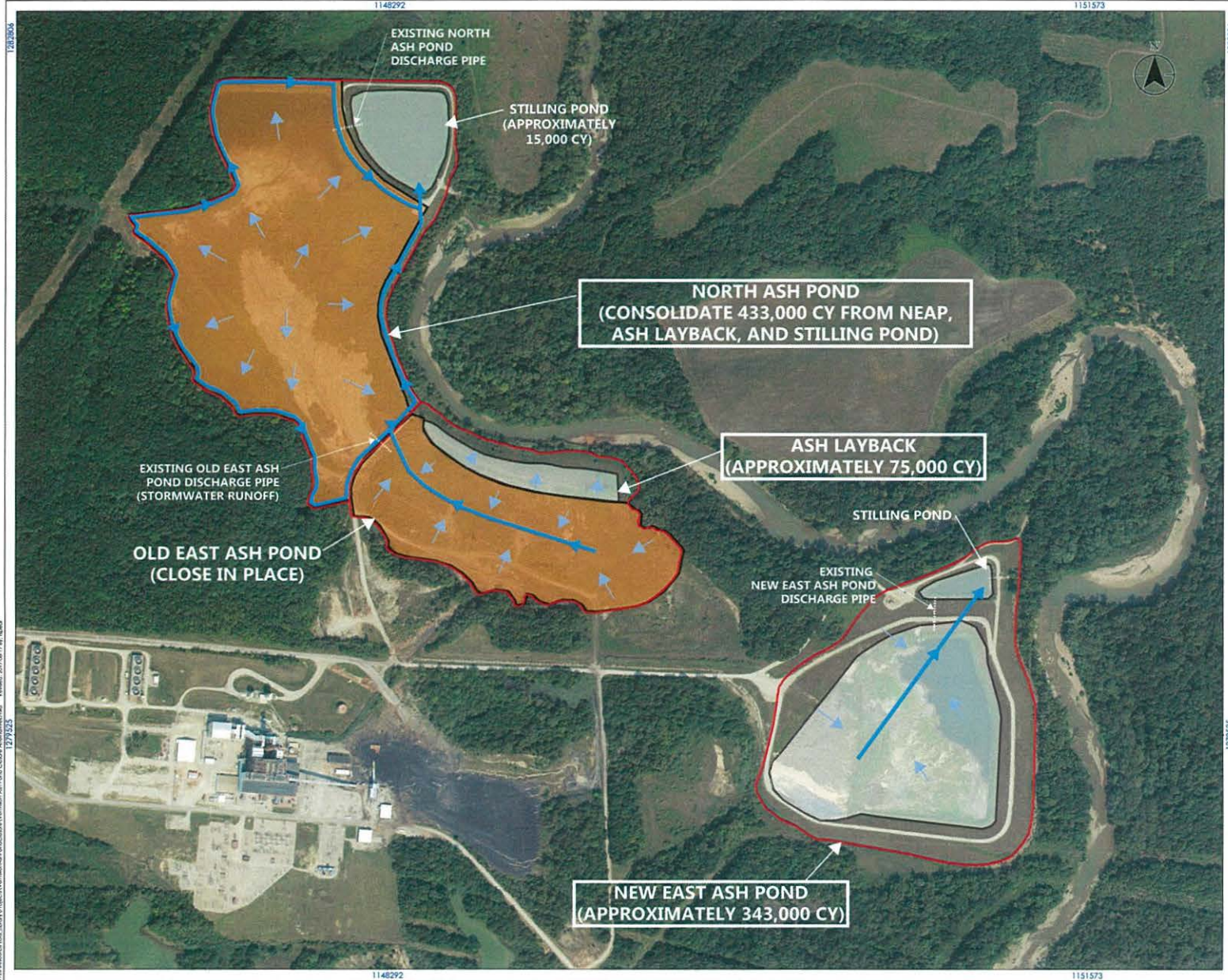
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4

Title
Option 4: Consolidate OEAP to NAP/NEAP, close NAP and NEAP in place.

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LEGEND

- ASH POND BORDER
 - PROPOSED DITCH
 - OVERLAND FLOW DIRECTION
 - LIMITS OF CLOSURE CAP
 - CLOSURE BY CONSOLIDATION
- 0 500 1,000 Feet

Notes
 1. Coordinate System: NAD 1983 StatePlane Illinois East FIPS 1201 Feet
 2. Orthorectification: ESRI Online



Project Location
 Danville, IL

Prepared by I. Lawrence
 Reviewed by M. Youghan

Client/Project
 Client: Dynegy Midwest Generation, LLC
 Title: Vermilion Site
 Project: Ash Ponds Closure

Figure No.
5

Title
 Option 5: Consolidate NEAP and OEAP Layback to NAP, close OEAP and NAP in place.

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