

# Location Restriction Compliance Demonstration

Ottumwa Generating Station Surface Impoundments  
20775 Power Plant Road  
Ottumwa, Iowa 52501

Prepared for:

Interstate Power and Light Company  
20775 Power Plant Road  
Ottumwa, Iowa 52501

**SCS ENGINEERS**

25220083.00 | October 15, 2020

2830 Dairy Drive  
Madison, WI 53718-6751  
608-224-2830

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# P.E. CERTIFICATION

 <p>10/15/2020</p>	<p>I, Eric J. Nelson, hereby certify that the location restriction demonstrations prepared for the surface impoundments at the Ottumwa Generating Station meet the requirements in 40 CFR 257.61(a), 62(a), and 63(a). This certification is based on my review of the October 2020 Location Restriction Compliance Demonstrations for the surface impoundments prepared by SCS Engineers. I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p>
	<p><i>Eric J. Nelson</i></p> <p>10/15/2020</p>
	<p>(signature) (date)</p>
	<p>Eric J. Nelson</p> <p>(printed or typed name)</p>
	<p>License number <u>23136</u></p> <p>My license renewal date is December 31, 2020.</p> <p>Pages or sheets covered by this seal:</p> <p>Location Restriction Compliance Demonstration dated 10/15/2020.</p>

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## 1.0 INTRODUCTION

On behalf of Interstate Power and Light Company (IPL), SCS Engineers (SCS) has prepared the enclosed Location Restriction Compliance Demonstration for the coal combustion residual (CCR) surface impoundments at the Ottumwa Generating Station (OGS) as required by 40 CFR 257.61-63. The CCR surface impoundments addressed with this demonstration include:

- OGS Ash Pond
- OGS Zero Liquid Discharge (ZLD) Pond

Figure 1 shows the site and surface impoundment locations.

## 2.0 LOCATION RESTRICTIONS

### §257.61 “Wetlands.”

*“(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in §232.2 of this chapter, unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that the CCR unit meets the requirements of paragraphs (a)(1) through (5) of this section.”*

The surface impoundments are not located in wetlands as defined by 40 CFR 232.2. A wetland delineation was performed by Burns & McDonnell in May 2020 (BMCD, 2020) and several wetlands that do not meet the 40 CFR 232.2 definition were delineated. The delineated wetlands were artificial, low-quality wetlands created within the areas that transport or hold operational wastewaters and stormwater runoff (i.e., the facility waste treatment system as defined by 40 CFR 120.2). The isolated, artificial wetlands within the OGS Ash Pond are unlikely to be jurisdictional in the opinion of BMCD based on the following:

- “Created for industrial purposes to transport or hold operational wastewaters and stormwater runoff (i.e., the waste treatment system)”
- “Are not adjacent wetlands”
- “Are not otherwise believed to meet the definition of jurisdictional waters”

SCS has reviewed the wetland delineation report and concurs with the opinion provided by BMCD that the areas exhibiting wetland characteristics in the OGS Ash Pond are not jurisdictional wetlands. An approved jurisdictional determination will be provided by the US Army Corps of Engineers in conjunction with the permitting required to complete the closure of the OGS Ash Pond. We expect the USACE will concur with the opinion provided by BMCD. A copy of the wetland delineation report is included in **Appendix A**.

### §257.62 “Fault areas.”

*“(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.”*

Based on a review of the U.S. Geological Survey (USGS) Quaternary faults database and map as shown in **Appendix B**, the surface impoundments are not located within 200 feet of the outermost damage zone of a fault that has had displacement in Holocene time. In 40 CFR 257.53, Holocene is defined as the most recent epoch of the Quaternary period extending from 11,700 years before present, to present. The USGS map shows that no faults are located in Iowa.

### §257.63 “Seismic impact zones.”

*“(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.”*

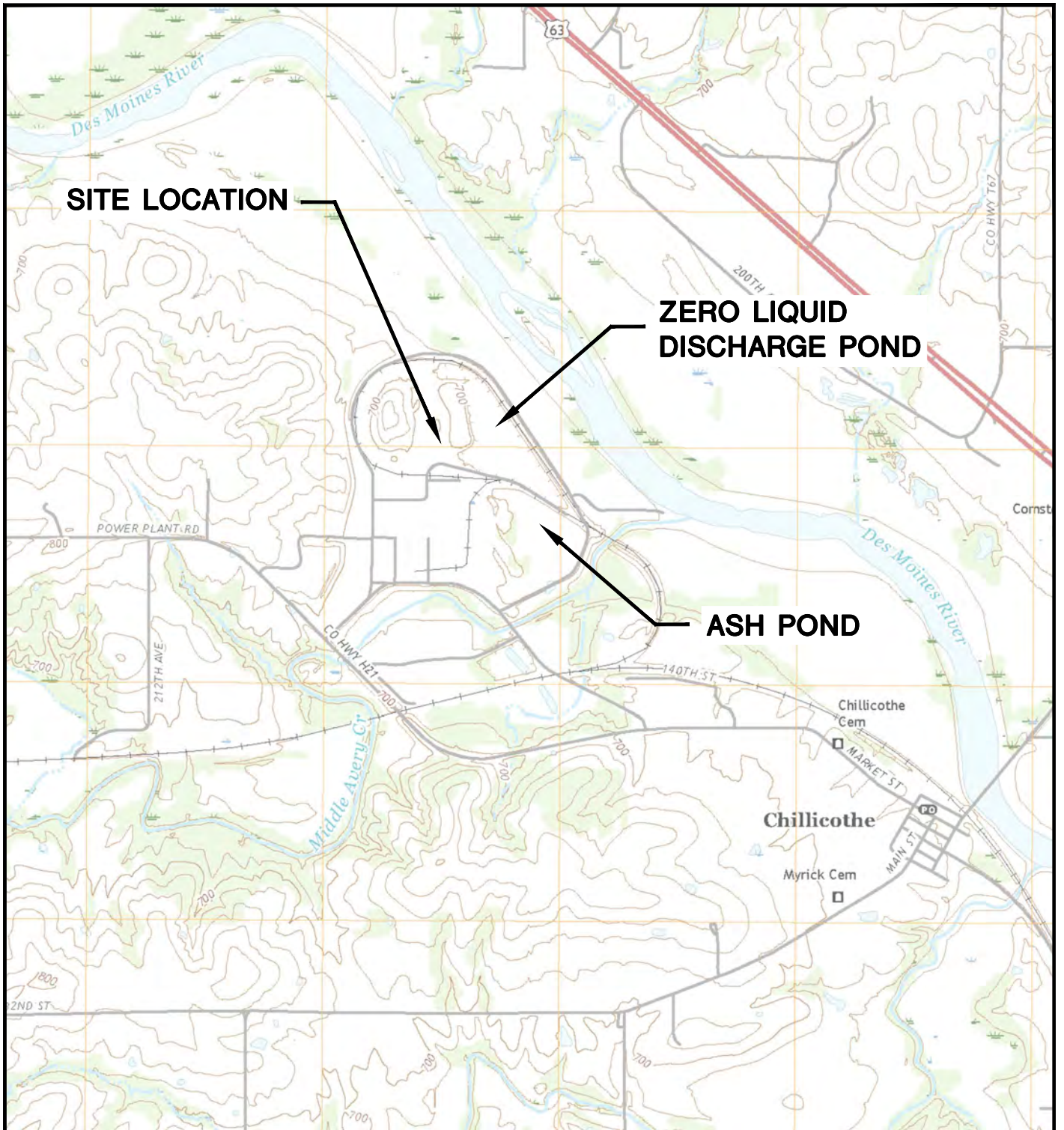
The surface impoundments are not located in seismic impact zones. In 40 CFR 257.53, a seismic impact zone is defined as an area having a 2 percent or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth’s gravitational pull (g), will exceed 0.10 g in 50 years. Based on a review of the USGS 2014 Long-Term Model National Seismic Hazard Map (see **Appendix C**), the maximum expected horizontal acceleration for the vicinity of the Ottumwa Generating Station is approximately 0.04 g, below the threshold for a seismic impact zone.

## 3.0 REFERENCES

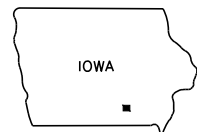
- A. Burns & McDonnell, 2020, Alliant Ottumwa Generating Station Pond Closure & Wastewater Treatment Project, Wetland Delineation Report: Kansas City, MO, September 30, 2020.
- B. USGS fault map website (accessed, 9/16/2020):  
<http://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=db287853794f4555b8e93e42290e9716>
- C. USGS seismic impact zones map website (accessed, 9/16/2020):  
<https://earthquake.usgs.gov/static/lfs/nshm/conterminous/2014/2014pga2pct.pdf>

Figure 1  
Site Location Map





CHILLICOTHE QUADRANGLE  
 IOWA-WAPELLO CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 2018  
 SCALE: 1" = 2,000'



CLIENT	INTERSTATE POWER AND LIGHT CO. 20775 POWER PLANT ROAD OTTUMWA, IA 52501		SITE	ALLIANT ENERGY OTTUMWA GENERATING STATION OTTUMWA, IOWA		ENGINEER	SITE LOCATION MAP	
	PROJECT NO.	25220083.00		DRAWN BY:	BSS/ZB		<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
	DRAWN:	09/16/20		CHECKED BY:	PEG			1
REVISED:	09/16/20	APPROVED BY:	EJN, 10/15/20					

I:\25220083.00\Drawings\Location Restriction Compliance Report\Site Location Map.dwg, 9/16/2020 5:01:56 PM

Appendix A  
Wetland Information



September 30, 2020

Mr. Chad Wall  
Alliant Energy  
200 1<sup>st</sup> Street SE  
Cedar Rapids, IA 52401

Re: Alliant Ottumwa Generating Station Pond Closure & Wastewater Treatment Project,  
Wetland Delineation Report

Dear Mr. Wall:

Burns & McDonnell was retained by Interstate Power and Light Company (IPL) to provide wetland delineation services for the Ottumwa Generating Station Pond Closure & Wastewater Treatment Project (Project) near Ottumwa in Wapello County, Iowa (Figure A-1, Appendix A). The following sections provide information on the proposed Project and summarize the completed wetland delineation.

## **INTRODUCTION**

IPL plans to close existing Coal Combined Residual (CCR) ponds at the Ottumwa Generating Station. To continue proper management of CCR material and wastewater quality at the plant, IPL will construct new outfalls to the Des Moines River and Middle Avery Creek. This will allow IPL to maintain compliance with CCR regulations.

The Project has the potential to impact wetlands or other waterbodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE), as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation for the Project to evaluate for the presence of wetlands and other waterbodies, including streams, drainages, and ponds. The delineation was conducted based on the proposed Project layout. The wetland delineation encompassed all areas where construction work will be needed for the Project (Survey Area). The Survey Area is approximately 91 acres.

## **METHODS**

The following discussions summarize the methods used for the review of existing data and the wetland delineation.

### **Existing Data Review**

Burns & McDonnell reviewed available background information for the Project prior to conducting a site visit. This available background information included 2018 U.S. Geological Survey (USGS) 7.5 minute topographic map (2018 Chillicothe, IA quadrangle), U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, National Agriculture Imagery Program (NAIP) aerial photography (2017), USGS National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) 1987 FIRM Panel 1909110001A, and

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U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Wapello County, Iowa. Figures A-2 and A-3 in Appendix A depict this data. The National Oceanic and Atmospheric Administration (NOAA) Palmer Drought Severity Index (PDSI) was also reviewed to evaluate precipitation conditions.

Wetland presence based only on NWI maps or other existing data cannot be assumed to accurately indicate the location and extent of jurisdictional wetlands. In addition, wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always included on NWI maps. A field visit was conducted to identify and delineate any wetlands or other waterbodies that may be present within the Survey Area.

#### **Wetland Delineation Field Survey**

Burns & McDonnell wetland scientists completed a wetland delineation of the Survey Area on May 27 and 28, 2020. The delineation was completed in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region – Version 2.0* (Regional Supplement). The Survey Area was evaluated on foot to identify the location and extent of wetlands and waterbodies within the Survey Area.

A sample plot was established at each location in the Survey Area where vegetation, hydrology, or topography suggested a wetland may be present, per the 1987 Manual and Regional Supplement, including areas within the waste treatment system. Data on vegetation, soil characteristics (including color and texture to a depth of 24 inches, where possible), and hydrological indicators were recorded at each sample plot on Wetland Determination Data Forms from the Regional Supplement. Sample plots were also established, and data recorded, at representative upland locations (Appendix B). Locations of sample plots and other identified features were recorded using a sub-meter-accurate global positioning system (GPS) unit. Natural color photographs were taken onsite and are included in Appendix C (Photographs C-1 through C-37).

#### **RESULTS**

The following sections describe the results of the existing data review and the wetland delineation.

##### **Existing Data Review**

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of wetlands and other waterbodies (Figure A-2). The USGS topographic map indicates the Survey Area crosses some riparian areas but

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predominantly consists of industrial areas of relatively flat topography. The 2017 aerial photograph shows that the Survey Area is primarily contained within the boundaries of an existing coal-fired power plant (Figure A-3). The NHD indicates there are two named streams, Des Moines River and Middle Avery Creek, which border the Survey Area.

The NRCS SSURGO digital data indicates that portions of nine soil map units are located in the Survey Area. Of these nine map units, the three units listed below are included on local and national hydric soil lists (Figure A-3).

- Givin silt loam, benches, 2 to 5 percent slopes
- Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded
- Richwood silt loam, 2 to 5 percent slopes

The NOAA PDSI indicates that Wapello County, Iowa experienced moderately moist conditions prior to and during the month of the wetland delineation. This indicates that conditions onsite were wetter than average.

Based on available data, eight NWI wetlands are located within the Survey Area, including one lake, one palustrine emergent (PEM) wetland, one palustrine forested (PFO) wetland, four palustrine unconsolidated bottom (PUB) wetlands, and one riverine (Figure A-2). One additional riverine wetland is located just east of the Survey Area.

The FEMA FIRM panel indicates that a significant portion of the Survey Area falls within a 100-Year Floodplain associated with the Des Moines River and Middle Avery Creek.

### **Wetland Delineation Field Survey**

On May 27 and 28, 2020, a two-person team comprised of a wetland scientist paired with a GPS specialist, both with Burns & McDonnell, conducted a wetland delineation of the Survey Area. The wetland scientist identified the location and extent of features within the Survey Area, and the GPS specialist recorded the location and extent of those features. The land cover and delineated waterbodies from the site visit are discussed in detail below.

The Project is located within an industrial setting. The soil in the Survey Area has been highly disturbed by industrial activities associated with the existing coal-fired power plant. Most of the Survey Area exists within a designated bottom ash area, and soil samples were not collected there due to the layer of coal dust on top of the soil.

*Vegetation.* The Survey Area was largely composed of a functioning coal-fired power plant, spoil piles, constructed detention ponds, and a few riparian areas. Where present, typical vegetation in the upland portions of the Survey Area included annual ragweed (*Ambrosia*

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*artemisiifolia*), Canadian horseweed (*Erigeron canadensis*), sticky-willy (*Galium aparine*), black medick (*Medicago lupulina*), and tall fescue (*Schedonorus arundinaceus*). General landscape photos of representative upland areas are included in Appendix C.

*Soils.* Typical upland soils, where taken, were dark gray (10YR 4/1) and were silty clay loam or clay loam in texture. Redoximorphic features were present in wetland soils but were absent in upland soils.

*Hydrology.* Hydrology in the Survey Area has been altered to support industrial purposes. The primary source of hydrology for the delineated wetlands within the Survey Area came from directed drainage of wastewater from the power plant and rainfall. Indicators of hydrology within the wetlands included standing water, a high water table, saturation, drift deposits, an algal mat or crust, inundation visible on aerial imagery, a hydrogen sulfide odor, oxidized rhizospheres on living roots, drainage patterns, a positive FAC neutral test, and geomorphic position.

#### **Delineated Areas**

Sixteen wetlands and 5 streams were identified during the wetland delineation effort. The delineated wetlands and streams are described by type below, and their locations are shown on Figure A-4 in Appendix A. Data forms and photographs of these sample plots are included in Appendix B and Appendix C, respectively.

It is the opinion of Burns & McDonnell that four wetlands and three streams have the potential to be jurisdictional waters of the U.S. Features assumed to be non-jurisdictional are indicated by highlighted grey cells in Tables 1 and 2 below. A jurisdictional determination can only be provided by the USACE. Delineated features that were assumed to be non-jurisdictional were either created for industrial purposes to transport or hold operational wastewaters and stormwater runoff (i.e., the waste treatment system), are not “adjacent wetlands,” and are not otherwise believed to meet the definition of jurisdictional waters. Figure A-5 in Appendix A shows the extent of the waste treatment system. Waste treatment systems, as defined in 40 CFR 120.2(3)(xv), are not included as waters of the U.S. Figure A-5 in Appendix A also displays the assumed jurisdictional and non-jurisdictional delineated waters within the Survey Area.

#### *Wetlands*

Seven PEM, seven PUB, and two palustrine scrub-shrub (PSS) wetlands were identified within the Survey Area (see photographs in Appendix C). Table 1 provides the type, size, and likely jurisdictional status of the delineated wetlands within the Survey Area.

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**Table 1: Type and Size of Wetlands Delineated within the Survey Area**

Wetland Number	Wetland Type <sup>a</sup>	Area of Wetland (acre)	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
W-1	PEM	0.06	3	Yes
W-2	PEM	0.75	1, 2	Yes
W-3	PSS	0.08	1	Yes
W-4 (Bottom Ash Pond)	PEM	0.03	3	No
W-5 (Bottom Ash Pond)	PEM	13.80	2, 3	No
W-6 (Bottom Ash Pond)	PUB	0.40	3	No
W-7 (Bottom Ash Pond)	PEM	0.08	3	No
W-8 (Bottom Ash Pond)	PUB	0.08	3	No
W-9	PEM	4.55	2, 3	No
W-10	PUB	0.17	3	No
W-11	PUB	0.32	3	No
W-12 (Bottom Ash Pond)	PEM	0.70	2, 3	No
W-13 (Bottom Ash Pond)	PUB	15.31	2, 3	No
W-14 (Bottom Ash Pond)	PUB	0.38	2	No
W-15 (ZLD Pond)	PUB	18.24	1, 2	No
W-16	PSS	0.02	1	Yes
	<b>Total:</b>	<b>54.97</b>		

(a) Palustrine emergent = PEM, palustrine unconsolidated bottom = PUB, palustrine scrub-shrub (PSS)

(b) Indication of jurisdictionality represents the opinion of Burns & McDonnell. An official Jurisdictional Determination can only be provided by the USACE.

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Seven PEM wetlands, encompassing 19.97 acres, were delineated within the Survey Area. Dominant vegetation in the PEM wetlands included common reed (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), blunt spikerush (*Eleocharis obtusa*), and needle spikerush (*Eleocharis acicularis*). Wetland hydrology was indicated in PEM wetlands by standing water, a high water table, saturation, drift deposits, an algal mat or crust, inundation visible on aerial imagery, a hydrogen sulfide odor, drainage patterns, a positive FAC-neutral test, and geomorphic position. Soils, where they could be evaluated, were very dark gray (10YR 3/1) in color and silty clay loam in texture, with redoximorphic concentrations. Hydric soil was indicated by Hydrogen Sulfide (A4) or Redox Dark Surface (F6).

Seven PUB wetlands, encompassing 34.90 acres, were delineated within the Survey Area. Vegetation around the PUB wetlands was dominated by common reed. The substrate was typically bottom ash or silt.

Two PSS wetlands, encompassing 0.10 acre, were delineated within the Survey Area. Dominant vegetation in the PSS wetland included black willow (*Salix nigra*) and reed canarygrass. Wetland hydrology was indicated in the PSS wetland by oxidized rhizospheres on living roots, a concave geomorphic position, and a positive FAC-neutral test. Soils, where they could be evaluated, were typically very dark gray (10YR 3/1) in color and clay loam or silty clay loam in texture, with redoximorphic concentrations. Hydric soil was indicated by Redox Dark Surface (F6).

*Streams*

Five streams, consisting of three stream types (perennial, intermittent, and ephemeral) were identified within the Survey Area (see photographs in Appendix C). A total of 3,138 linear feet of stream were delineated within the Survey Area. The different stream types are summarized below. Table 2 provides the type, delineated length, and likely jurisdictional status of each stream delineated within the Survey Area.

**Table 2: Type and Length of Delineated Streams within the Survey Area**

Stream Number	Stream Type	Stream Length (feet)	Stream Width <sup>a</sup> (feet)	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
S-1 (Middle Avery Creek)	Perennial	139	45	3	Yes
S-2 (Des Moines)	Perennial	51	660	1	Yes



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Stream Number	Stream Type	Stream Length (feet)	Stream Width <sup>a</sup> (feet)	Figure A-4 Page Number	Jurisdictional <sup>b</sup>
River)					
S-3	Intermittent	519	4.5	1	Yes
S-4	Ephemeral	1,364	4.5 - 12	2, 3	No
S-5	Ephemeral	1,065	10	2	No
	<b>Total:</b>	<b>3,138</b>			

- (a) The stream widths for S-1 and S-2 were estimated based off of aerial imagery.
- (b) Indication of jurisdictionality represents the opinion of Burns & McDonnell. An official Jurisdictional Determination can only be provided by the USACE.

Two ephemeral streams, extending for 2,429 linear feet, were delineated within the Survey Area. Ephemeral streams were characterized by a defined bed and bank and were constructed for wastewater discharge from the power plant to the ash ponds. Ephemeral streams ranged from approximately 4.5 to 12 feet in width at the ordinary high-water mark (OHWM) with bank heights ranging from 1 to 2 feet. At the time of delineation, water was observed at a depth of 0.5 to 1.5 feet. The substrates of the ephemeral streams were comprised typically of coal dust or silt. These streams flowed through industrialized ash pond areas within the boundaries of the power plant. Riparian vegetation included species such as common reed, black medick, black willow, field pennycress (*Thlaspi arvense*), field parsnip (*Pastinaca sativa*), and common milkweed (*Asclepias syriaca*). These streams are likely not jurisdictional because they are artificially created streams, and the water source is from the power plant.

One intermittent stream, extending for 519 feet, was delineated within the Survey Area. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit. This is a likely indicator that the stream is partially influenced by groundwater, but it may not flow during dry periods. The water source for S-3 was largely from an existing outfall from the power plant, but groundwater was also a source of water (Photograph C-35, Appendix C). S-3 was 4.5 feet wide at the OHWM with a bank height of 3.5 feet. At the time of delineation, water was observed at a depth of 6 inches. The substrate of the intermittent stream was comprised of coal dust, silt, and gravel. This stream flowed along a chain-link fence. Common riparian vegetation included species such as black willow, sticky-willy, and great ragweed (*Ambrosia trifida*).

Two perennial streams, Middle Avery Creek and Des Moines River, were delineated for a total length of 190 linear feet within the Survey Area. Perennial streams were characterized by the presence of a substantial volume of flow at the time of the site visit as well as secondary

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characteristics such as observance of fish and other aquatic fauna, indicating that water flows year-round. Perennial streams were approximately 45 to 660 feet in width at the OHWM with bank heights ranging from 10 to 15 feet. At the time of delineation, the depth of both Middle Avery Creek and Des Moines River could not be estimated due to the size of the streams, flow rate, and turbidity of the water. The substrates could not be confirmed at these streams due to turbidity. These streams flowed along the edge of the Survey Area, and the location of only one bank of each stream was recorded with GPS. Common riparian vegetation included common reed, black willow, multiflora rose (*Rosa multiflora*), rough banyard grass (*Echinochloa muricata*), and green ash (*Fraxinus pennsylvanica*).

## **SUMMARY**

Burns & McDonnell conducted a wetland delineation within the Survey Area to identify wetlands and other waterbodies. Sixteen areas with wetland characteristics and five streams were identified. Most of the areas with wetland characteristics delineated within the Survey Area were artificial, low-quality wetlands created within the areas of the Generating Station that transport or hold operational wastewaters and stormwater runoff (i.e., the waste treatment system). The dominant vegetation throughout these areas was common reed. This species is a vigorous growing plant that outcompetes most other plants in the vicinity and can thrive in highly disturbed wet areas. The isolated, artificial PEM and PUB areas within the bottom ash pond are unlikely to be jurisdictional since they are part of the waste treatment system, as defined in 40 CFR 120.2(3)(xv).

A total of 4 wetlands and 3 streams appear to be jurisdictional waters of the U.S. (Tables 1 and 2) due to perennial flow, physical proximity and/or hydrologic connection to perennial features, or other indicators. The features indicated as “Yes” in Tables 1 and 2 are presumed to be under the jurisdiction of the USACE; however, an official Jurisdictional Determination can only be made by the USACE.

The Project may qualify for Nationwide Permit (NWP) 7 for Outfall Structures and Associated Intake Structures provided that all activities are related to the construction or modification of outfall structures and associated intake structures, where the effluent from the outfall is in compliance with National Pollutant Discharge Elimination System (NPDES) Program. A Pre-Construction Notification (PCN) is required prior to starting construction.

All areas temporarily impacted by construction of the Project should be restored to their original contours and revegetated as appropriate. If the Project will result in the permanent loss of greater than 1/10-acre of wetlands, compensatory mitigation is required. The Project would comply with the General and Iowa Regional Conditions of the NWP.



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If you have any questions or require additional information, please contact Olivia Haney by telephone at (816) 627-5736 or by e-mail at [olhaney@burnsmcd.com](mailto:olhaney@burnsmcd.com).

Sincerely,

A handwritten signature in black ink, appearing to read 'Olivia Haney'.

Olivia Haney  
Wetland Specialist

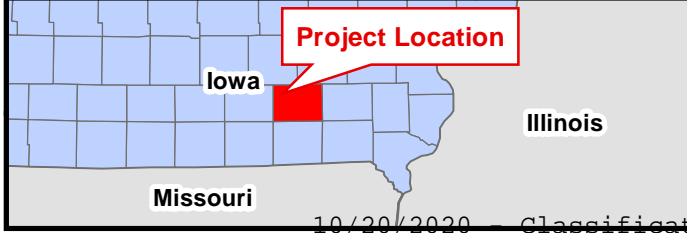
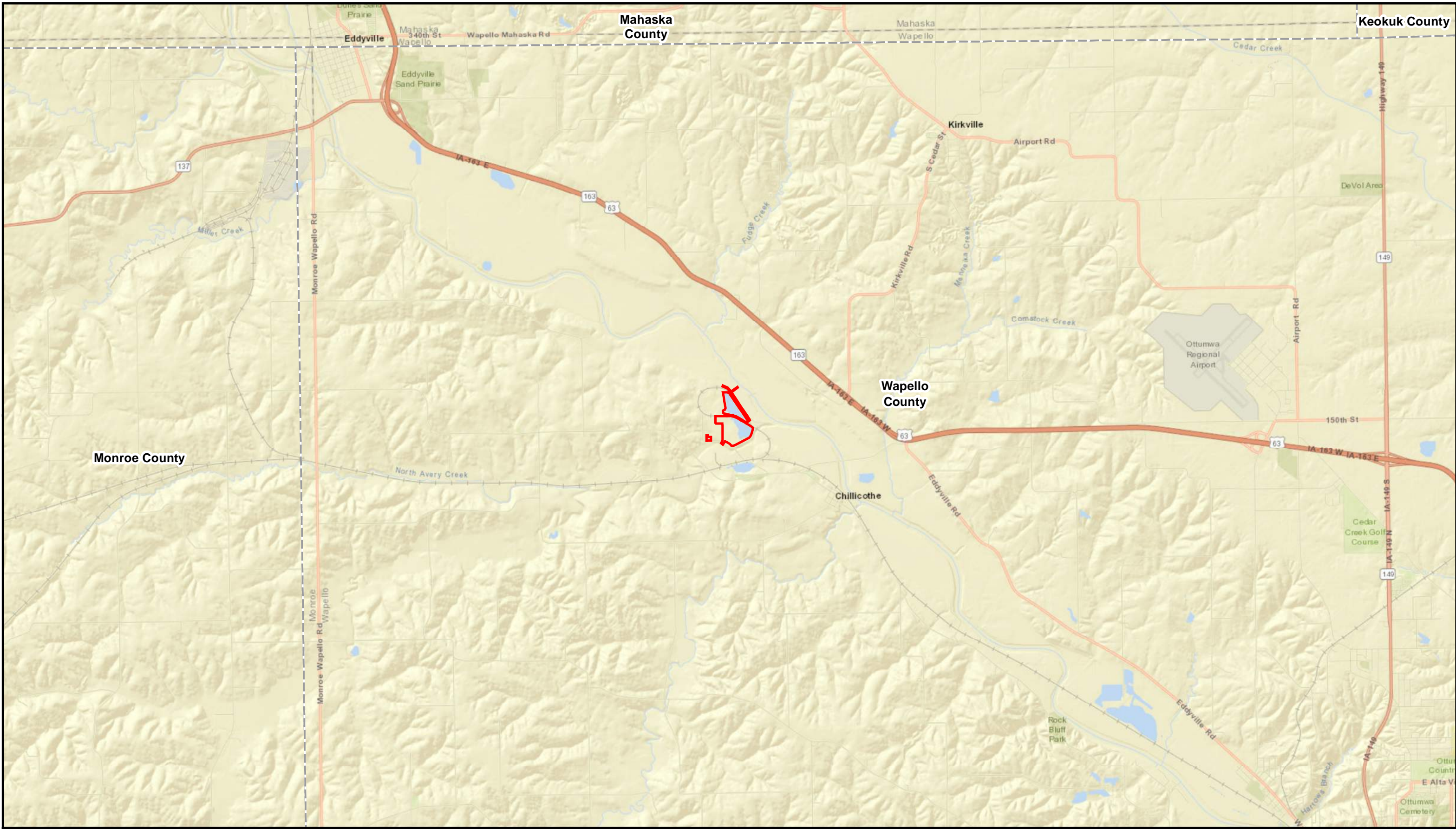
Attachments:

- Appendix A - Figures
- Appendix B - Routine Wetland Determination Data Forms, Midwest Region
- Appendix C - Site Photographs

cc: Robert Owens, Burns & McDonnell  
Sarah Gilstrap, Burns & McDonnell  
Paul Brandt, Burns & McDonnell

## **APPENDIX A - FIGURES**

Path: Z:\Clients\ENR\IPLC\110321\_Ottumwa\WTP\GIS\Studies\Geospatial\ArcDocs\Figure\_A-1.mxd olhaney 9/3/2020  
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



**Survey Area** (Red outline)

**County Boundary** (Dashed line)

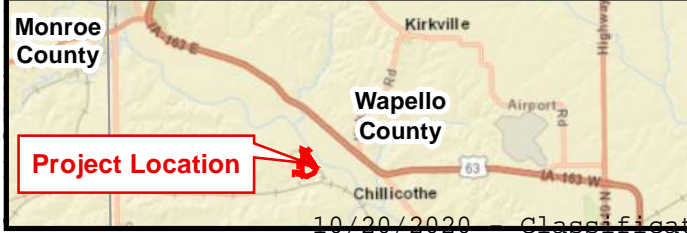
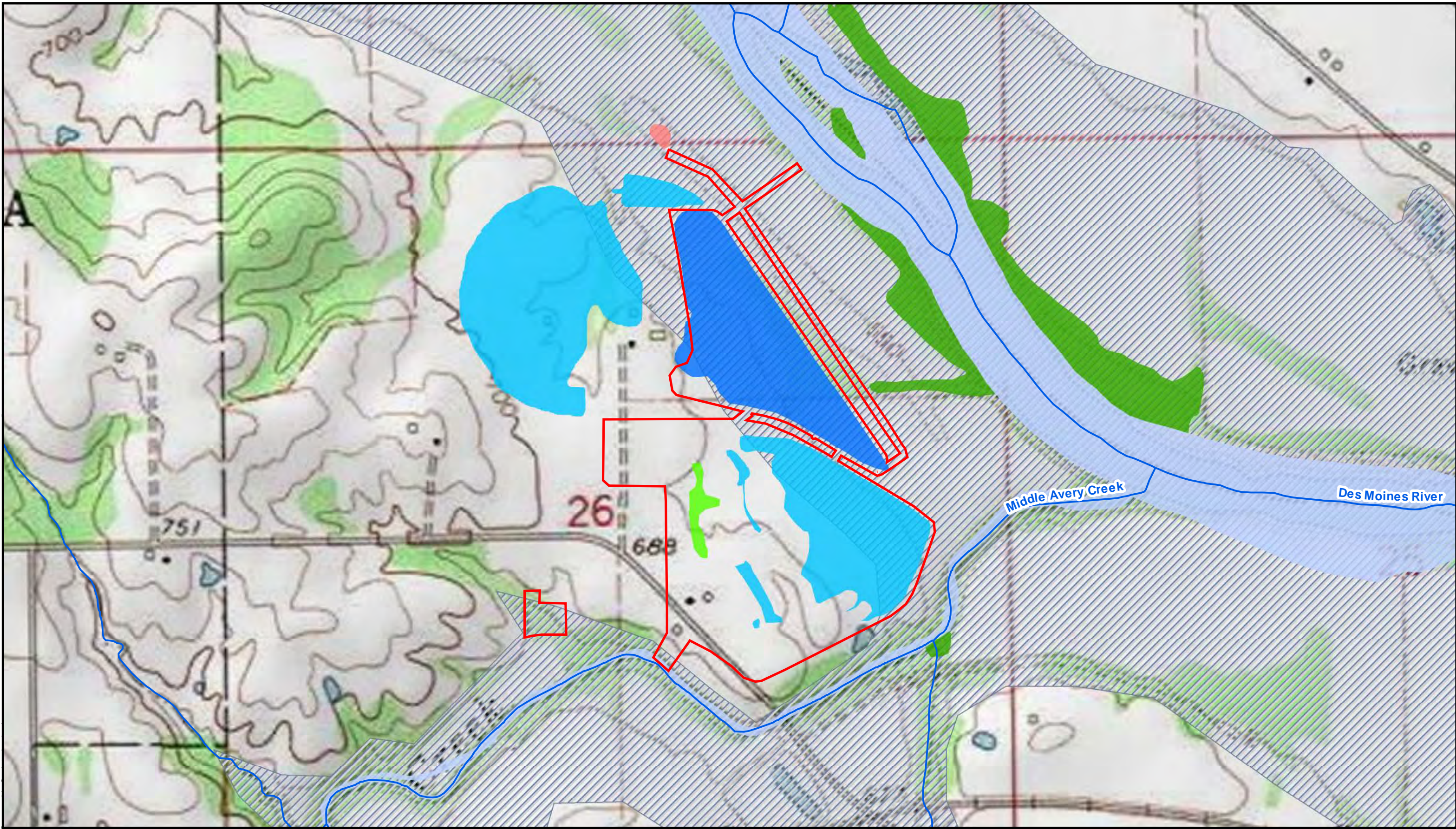
**Scale:** 1 0.5 0 1 Miles

**North Arrow:** NORTH



**Figure A-1**  
General Vicinity Map  
Ottumwa Generating Station Pond  
Closure & Wastewater Treatment Project  
Interstate Power & Light Company  
Wapello County, IA

Path: Z:\Clients\ENR\PLC\110321\_Ottumwa\WTP\GIS\Studies\Geospatial\DataFiles\ArcDocs\Figure\_A-2.mxd olhaney 9/3/2020  
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



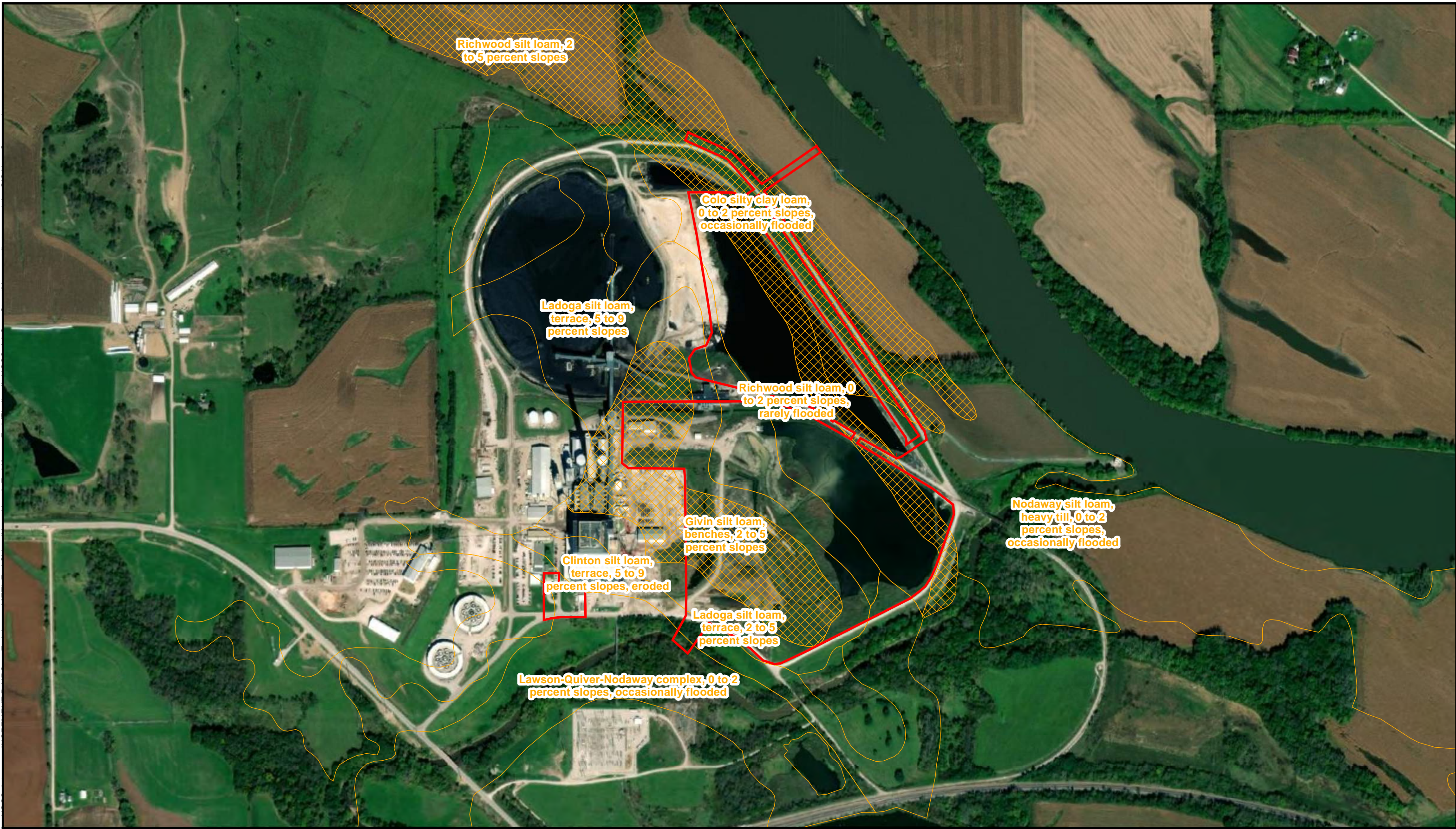
Survey Area	NWI Wetland	PEM	Lake
NHD Stream	PFO	PUB	Riverine
100-Year Floodplain	PSS		

600 300 0 600  
Feet



Figure A-2  
NWI, NHD, FEMA Flood Hazard and Topographic Map  
Ottumwa Generating Station Pond Closure & Wastewater Treatment Project  
Interstate Power & Light Company  
Wapello County, IA

Path: Z:\Clients\ENR\PLC\110321\_Ottumwa\WWT\PC\Studies\Geospatial\ArcDocs\Figure\_A-3.mxd olhaney 9/3/2020  
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Richwood silt loam, 2 to 5 percent slopes

Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded

Ladoga silt loam, terrace, 5 to 9 percent slopes

Richwood silt loam, 0 to 2 percent slopes, rarely flooded

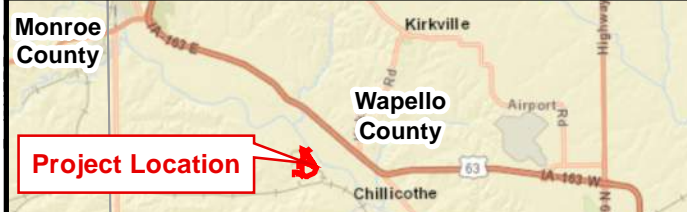
Givin silt loam, benches, 2 to 5 percent slopes




Nodaway silt loam, heavy till, 0 to 2 percent slopes, occasionally flooded

Clinton silt loam, terrace, 5 to 9 percent slopes, eroded

Ladoga silt loam, terrace, 2 to 5 percent slopes

Lawson-Quiver-Nodaway complex, 0 to 2 percent slopes, occasionally flooded



-  Survey Area
-  Hydric Soil
-  Non-Hydric Soil

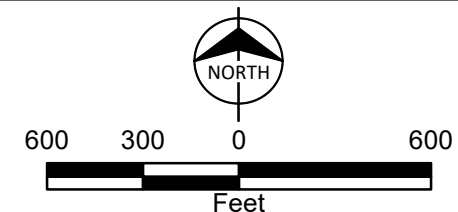
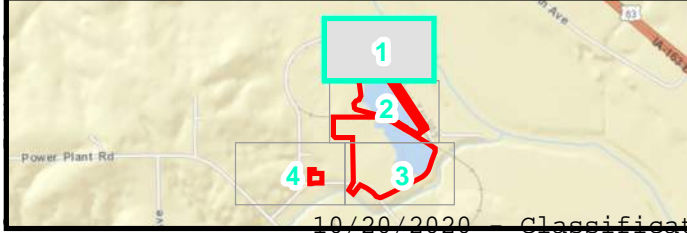
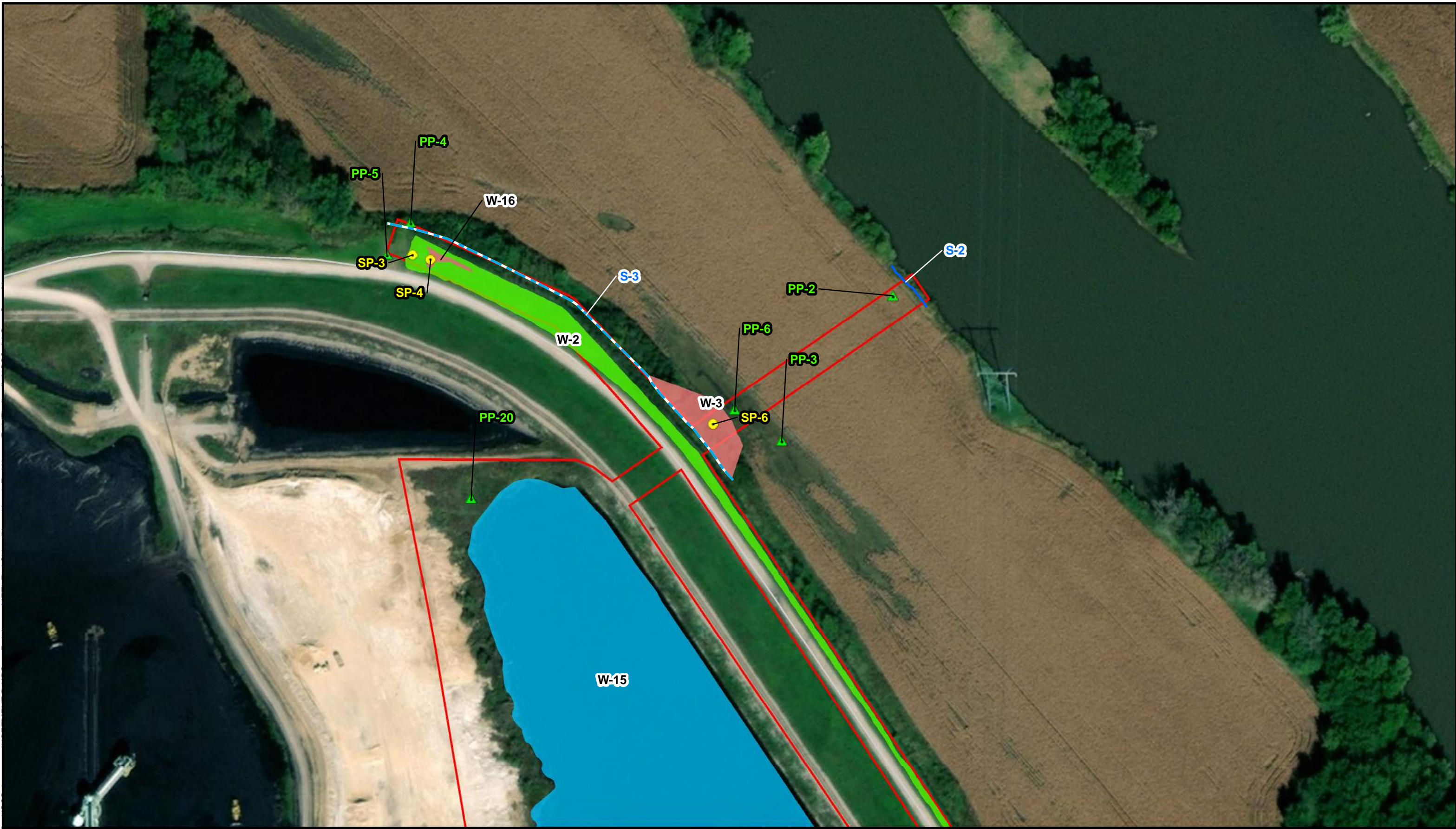


Figure A-3  
NRCS Soils and Areal Map  
Ottumwa Generating Station Pond  
Closure & Wastewater Treatment Project  
Interstate Power & Light Company  
Wapello County, IA

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 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Survey Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Ephemeral	PEM
Photograph Point (PP)	Intermittent	PSS
	Perennial	PUB

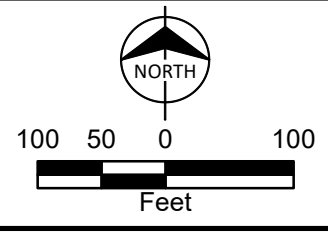
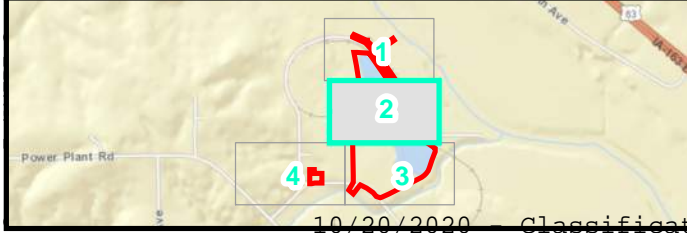
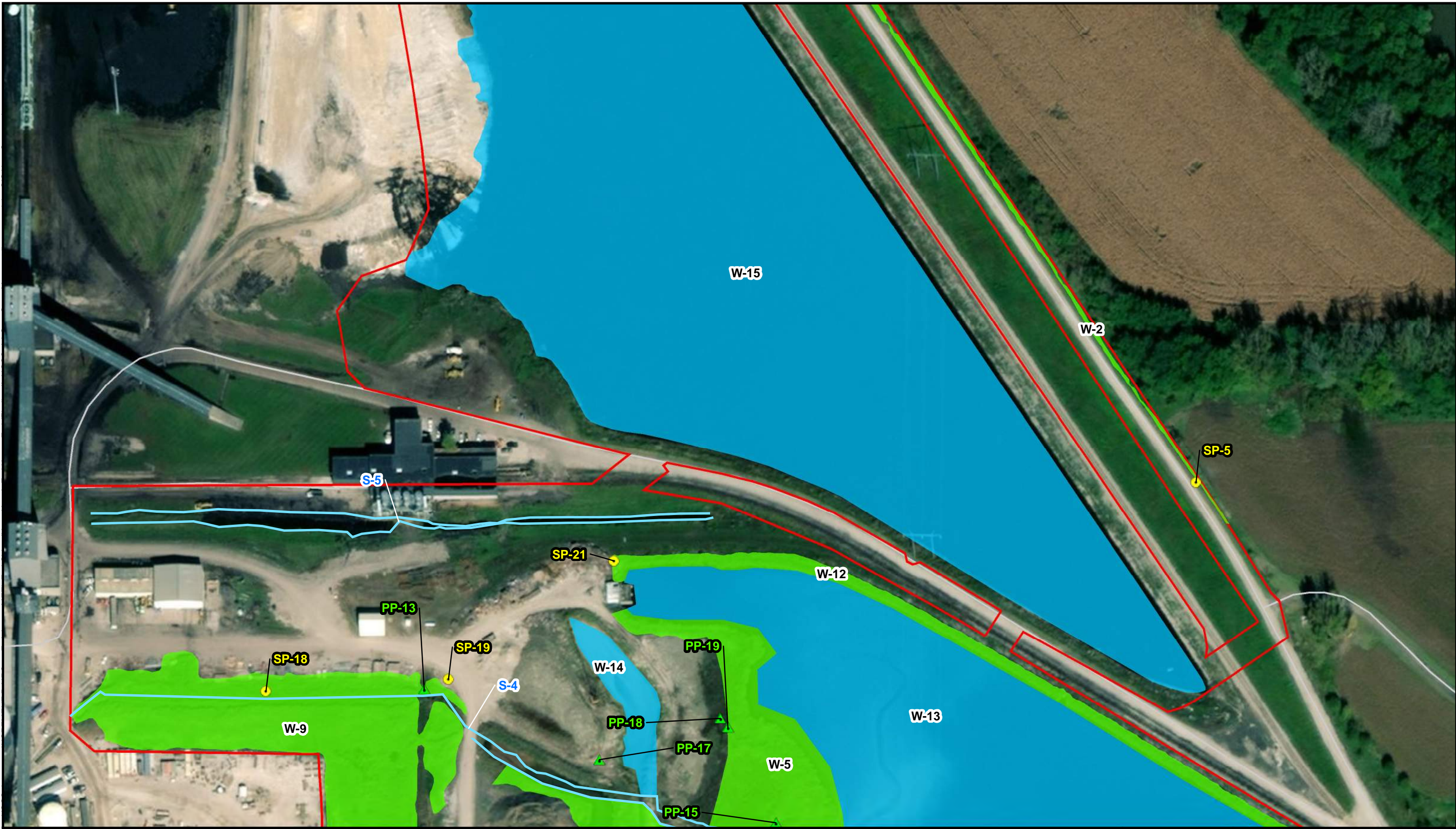


Figure A-4  
 Location Map of Wetlands and  
 Other Water Resources  
 Ottumwa Generating Station Pond  
 Closure & Wastewater Treatment Project  
 Interstate Power & Light Company  
 Wapello County, IA  
 Page 1 of 4



Path: Z:\Clients\ENR\PLC\110321\_Ottumwa\WWT\PC\Studies\Geospatial\ArcDocs\Figure\_A-4.mxd olhaney 9/3/2020  
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Survey Area		Stream (S)		Wetland (W)	
	Survey Area		Ephemeral		PEM
	Sample Plot (SP)		Intermittent		PSS
	Photograph Point (PP)		Perennial		PUB

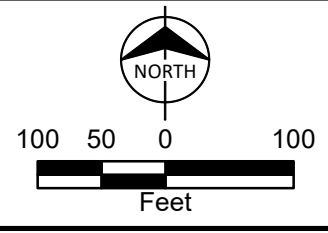
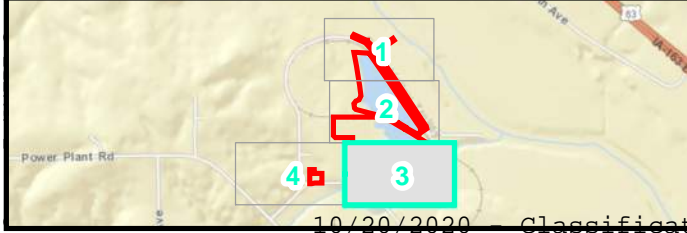


Figure A-4  
 Location Map of Wetlands and  
 Other Water Resources  
 Ottumwa Generating Station Pond  
 Closure & Wastewater Treatment Project  
 Interstate Power & Light Company  
 Wapello County, IA  
 Page 2 of 4

Path: Z:\Clients\ENR\PLC\110321\_Ottumwa\WWT\PC\Studies\Geospatial\ArcDocs\Figure\_A-4.mxd olhaney 9/3/2020  
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



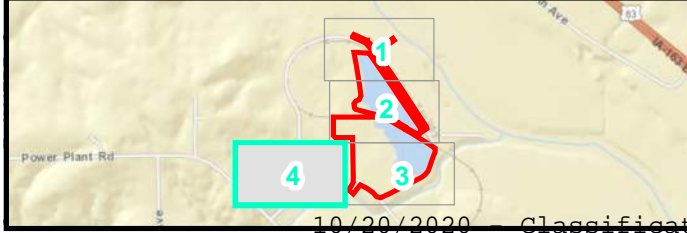
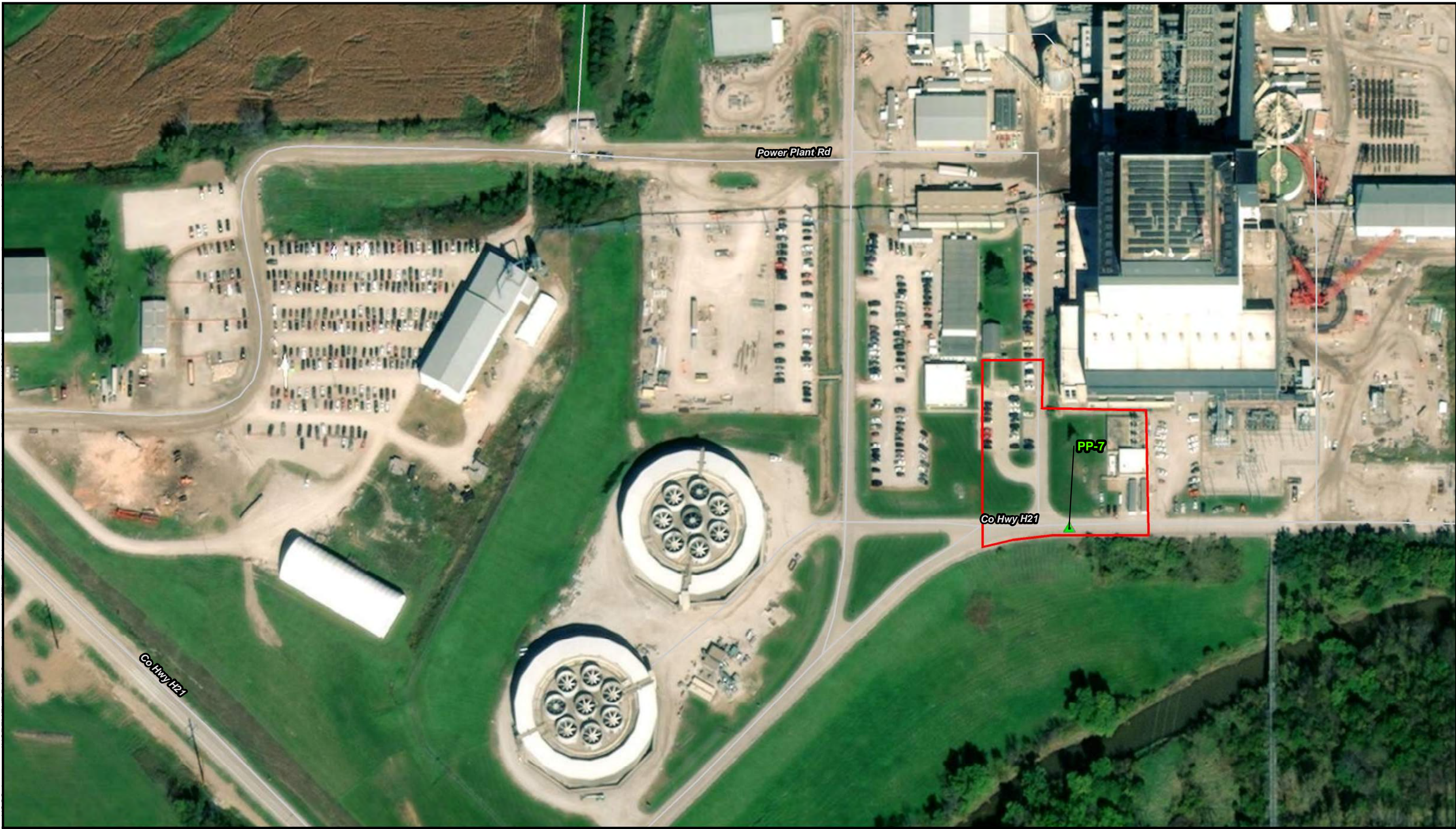
Survey Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Ephemeral	PEM
Photograph Point (PP)	Intermittent	PSS
	Perennial	PUB

NORTH  
 100 50 0 100  
 Feet



Figure A-4  
 Location Map of Wetlands and  
 Other Water Resources  
 Ottumwa Generating Station Pond  
 Closure & Wastewater Treatment Project  
 Interstate Power & Light Company  
 Wapello County, IA  
 Page 3 of 4

Path: Z:\Clients\ENR\PLC\110321\_Ottumwa\WWT\PC\Studies\Geospatial\ArcDataFiles\ArcDocs\Figure\_A-4.mxd olhaney 9/3/2020  
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



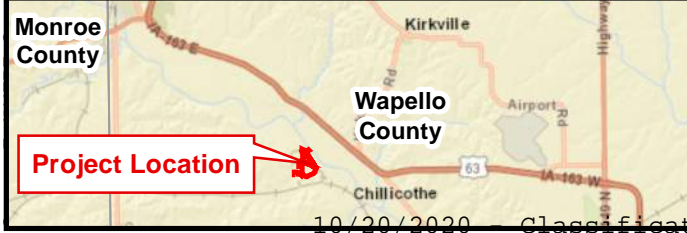
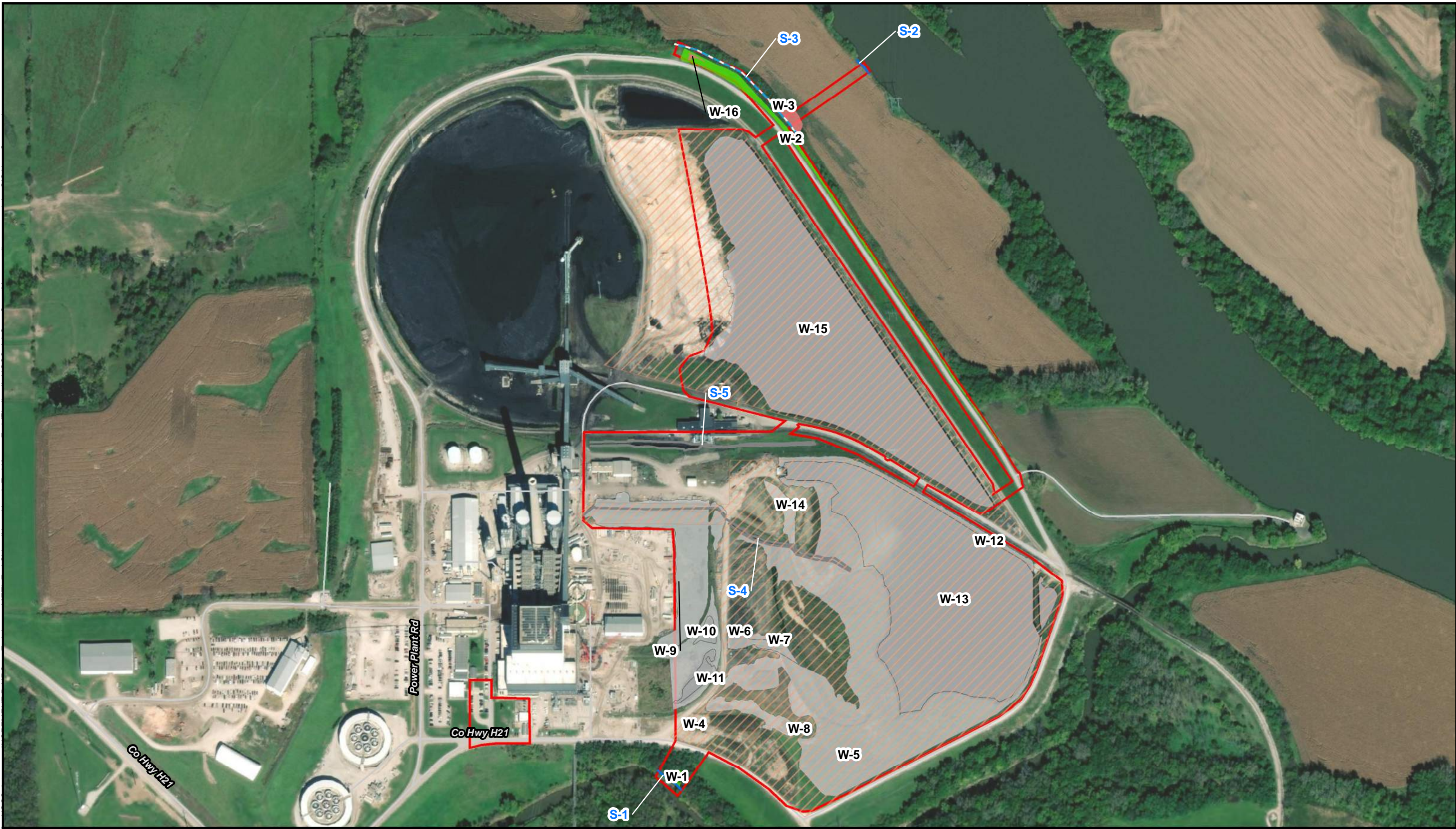
Survey Area	<b>Stream (S)</b>	<b>Wetland (W)</b>
Sample Plot (SP)	Ephemeral	PEM
Photograph Point (PP)	Intermittent	PSS
	Perennial	PUB

Feet



Figure A-4  
 Location Map of Wetlands and  
 Other Water Resources  
 Ottumwa Generating Station Pond  
 Closure & Wastewater Treatment Project  
 Interstate Power & Light Company  
 Wapello County, IA  
 Page 4 of 4

Path: \\bmcdfs\clients\ENR\PLC\110321\_Ottumwa\WTP\GIS\Studies\Geospatial\DataFiles\ArcDocs\Figure\_A-5.mxd olhamey 9/3/2020  
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Survey Area	<b>Delineated Stream (S)</b>	<b>Delineated Wetland (W)</b>
Waste Treatment System	Perennial	PEM
	Intermittent	PSS
	Assumed Non-Jurisdictional	Assumed Non-Jurisdictional

NORTH  
 0 207.5 415  
 Feet



Figure A-5  
 Assumed Jurisdictional Waters Map  
 Ottumwa Generating Station Pond  
 Closure & Wastewater Treatment Project  
 Interstate Power & Light Company  
 Wapello County, IA

**APPENDIX B - ROUTINE WETLAND DETERMINATION DATA FORMS,  
MIDWEST REGION**

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-1  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None  
 Slope (%): 10.00 Lat: 41.094670 Long: -92.552766 Datum: NAD 83  
 Soil Map Unit Name: Lawson-Quiver-Nodaway complex, 0 to 2 percent slopes, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-1 is in PEM W-1. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. Soil in the area has been significantly disturbed by industrial activities associated with the power plant.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Betula nigra</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
5. _____				
<u>10%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>0</u> x 1 = <u>0</u>
3. _____				FACW species <u>85</u> x 2 = <u>170</u>
4. _____				FAC species <u>0</u> x 3 = <u>0</u>
5. _____				FACU species <u>5</u> x 4 = <u>20</u>
_____ = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column Totals: <u>90</u> (A) <u>190</u> (B)
				Prevalence Index = B/A = <u>2.1</u>
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Phragmites australis</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Impatiens capensis</u>	<u>5</u>		<u>FACW</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
3. <u>Solidago altissima</u>	<u>5</u>		<u>FACU</u>	<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
4. _____				____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. _____				____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>80%</u> = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes <input checked="" type="checkbox"/> No _____
2. _____				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) Rapid test is met. Photograph C-1.				

**SOIL**

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 4/2	95	7.5YR 4/4	5	C	M	Clay loam	
4 - 8	N 2.5/	40					Clay loam	Mixed matrix; rock present
4 - 8	2.5Y 5/3	35						
4 - 8	5YR 4/6	25						
8 - 24	N 2.5/	100					Clay loam	Rocks present
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:  
Indicators A4 and F6 are met. The soil has been significantly disturbed by industrial activity related to the power plant.

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): 8.00 Saturation Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): 4.00 (includes capillary fringe)	Wetland Hydrology Present?    Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Indicators are met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-2  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None  
 Slope (%): 15.00 Lat: 41.094691 Long: -92.555635 Datum: NAD 83  
 Soil Map Unit Name: Clinton silt loam, terrace, 5 to 9 percent slopes, eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-1 is an upland sample plot adjacent to PEM W-1. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. Soil in the area has been significantly disturbed by industrial activities associated with the power plant.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Gleditsia triacanthos</u>	<u>35</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>17</u> (A/B)														
2. <u>Acer saccharinum</u>	<u>10</u>		<u>FACW</u>															
3. <u>Robinia pseudoacacia</u>	<u>10</u>		<u>FACU</u>															
4. _____																		
5. _____																		
<u>55%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>180</u></td> <td>x 4 = <u>720</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>215</u> (A)</td> <td><u>790</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.7</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>180</u>	x 4 = <u>720</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>215</u> (A)	<u>790</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>35</u>	x 2 = <u>70</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>180</u>	x 4 = <u>720</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>215</u> (A)	<u>790</u> (B)																	
<u>30%</u> = Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)</b>																		
1. <u>Lonicera tatarica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Quercus imbricaria</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. _____																		
4. _____																		
5. _____																		
<u>30%</u> = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft r</u>)</b>																		
1. <u>Solidago altissima</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Lonicera tatarica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Dichanthelium clandestinum</u>	<u>15</u>		<u>FACW</u>															
4. <u>Galium aparine</u>	<u>15</u>		<u>FACU</u>															
5. <u>Cerastium fontanum</u>	<u>10</u>		<u>FACU</u>															
6. <u>Ambrosia artemisiifolia</u>	<u>5</u>		<u>FACU</u>															
7. <u>Rubus allegheniensis</u>	<u>5</u>		<u>FACU</u>															
8. _____																		
9. _____																		
10. _____																		
<u>120%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</b>																		
1. <u>Vitis riparia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
2. _____																		
<u>10%</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) No test is met. Photograph C-2.																		
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																		
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																		











**SOIL**

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 8	10YR 3/1	75	7.5YR 4/4	15	C	PL	Clay loam	
0 - 8			10YR 5/3	10	C	M		
8 - 14								Rock/Sand fill layer
12 - 16	10YR 3/1	75	10YR 2/1	15	C	M	Clay loam	Rock fill present
12 - 16			7.5YR 4/4	10	C	M		
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Compact/Fill</u> Depth (Inches): <u>16.00</u>	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
 Indicator F6 is met. Excavation below 16" prevented by compact soil and the presence of fill material. From 8"-14", there was a layer of rock/sand fill that was unable to be colored using the Munsell guide. A layer of soil was present from 14"-16", but refusal was met below 16".

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-5  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 5.00 Lat: 41.099091 Long: -92.547376 Datum: NAD 83  
 Soil Map Unit Name: Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-5 is an upland sample plot adjacent to PEM W-2. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. Soil in the area has been significantly disturbed by the proximity to a power plant access road.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.5</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>3.5</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>400</u> (B)																			
Prevalence Index = B/A = <u>3.5</u>																				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
_____ = Total Cover																				
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_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																
Remarks: (Include photo numbers here or on a separate sheet.) No test is met. Photograph C-5.																				



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-6  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 5.00 Lat: 41.103133 Long: -92.550658 Datum: NAD 83  
 Soil Map Unit Name: Colo silty clay loam, 0 to 2 percent slopes, occasionally flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-6 is in PSS W-3. There is no upland sample plot taken adjacent to this wetland. The southern boundary of the wetland borders intermittent Stream (S)-3 and the northern boundary borders an unvegetated, actively maintained agricultural field. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Salix nigra</u>	10	<input checked="" type="checkbox"/>	OBL	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>10%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"><u>Total % Cover of:</u></td> <td style="width:50%;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species <u>85</u></td> <td>x 1 = <u>85</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>335</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.2</u>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species <u>85</u>	x 1 = <u>85</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>335</u> (B)
<u>Total % Cover of:</u>	<u>Multiply by:</u>																	
OBL species <u>85</u>	x 1 = <u>85</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>10</u>	x 3 = <u>30</u>																	
FACU species <u>50</u>	x 4 = <u>200</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>155</u> (A)	<u>335</u> (B)																	
<u>65%</u> = Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)</b>																		
1. <u>Salix nigra</u>	65	<input checked="" type="checkbox"/>	OBL															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>65%</u> = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft r</u>)</b>																		
1. <u>Galium aparine</u>	50	<input checked="" type="checkbox"/>	FACU															
2. <u>Ambrosia trifida</u>	10		FAC															
3. <u>Boehmeria cylindrica</u>	10		OBL															
4. <u>Conium maculatum</u>	5		FACW															
5. <u>Vitis riparia</u>	5		FACW															
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>80%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</b>																		
1. _____																		
2. _____																		
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Dominance test is met. Photograph C-6.																		



**SOIL**

Sampling Point: SP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 24	10YR 3/1	90	10YR 4/4	10	C	PL / M	Silty clay loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Indicator F6 is met.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
<u>Primary Indicators (minimum of one is required: check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Indicators are met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-7  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.095438 Long: -92.552512 Datum: NAD 83  
 Soil Map Unit Name: Ladoga silt loam, terrace, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
 SP-7 is in PEM W-4. An upland sample plot was not taken adjacent to this wetland. The wetland basin was surrounded by spoils piles of access roads. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																																
1. _____	_____	_____	_____		<b>Prevalence Index worksheet:</b> <table border="0"> <tr> <td colspan="2">Total % Cover of:</td> <td colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td><u>15</u></td> <td>x 1 =</td> <td><u>15</u></td> </tr> <tr> <td>FACW species</td> <td><u>60</u></td> <td>x 2 =</td> <td><u>120</u></td> </tr> <tr> <td>FAC species</td> <td><u>0</u></td> <td>x 3 =</td> <td><u>0</u></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>75</u> (A)</td> <td></td> <td><u>135</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align: right;">Prevalence Index = B/A = <u>1.8</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>15</u>	x 1 =	<u>15</u>	FACW species	<u>60</u>	x 2 =	<u>120</u>	FAC species	<u>0</u>	x 3 =	<u>0</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>75</u> (A)		<u>135</u> (B)	Prevalence Index = B/A = <u>1.8</u>		
Total % Cover of:		Multiply by:																																		
OBL species	<u>15</u>	x 1 =	<u>15</u>																																	
FACW species	<u>60</u>	x 2 =	<u>120</u>																																	
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Column Totals:	<u>75</u> (A)		<u>135</u> (B)																																	
Prevalence Index = B/A = <u>1.8</u>																																				
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)</b>																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
_____ = Total Cover																																				
<b>Herb Stratum (Plot size: <u>5 ft r</u>)</b>																																				
1. <u>Phragmites australis</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACW</u>																																	
2. <u>Eleocharis obtusa</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
<u>75%</u> = Total Cover																																				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</b>																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
_____ = Total Cover																																				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Rapid test is met. Photograph C-7.

**SOIL**

Sampling Point: SP-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input checked="" type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
 A soil sample was not taken. Soil is assumed to be hydric due to the prevalence of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>4.00</u> Water Table Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0.00</u> Saturation Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0.00</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicators are met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-8  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.095695 Long: -92.552161 Datum: NAD 83  
 Soil Map Unit Name: Ladoga silt loam, terrace, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-8 is in PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____ OBL species <u>35</u> x 1 = <u>35</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>155</u> (B)
2. _____	_____	_____	_____	Prevalence Index = B/A = <u>1.6</u>
3. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
4. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Remarks: (Include photo numbers here or on a separate sheet.) Rapid test is met. Photograph C-8.
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
95% = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

**SOIL**

Sampling Point: SP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input checked="" type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
 A soil sample was not taken. Soil is assumed to be hydric due to the prevalence of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?        Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?         Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-27  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-9  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 5.00 Lat: 41.095794 Long: -92.551273 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-9 is an upland sample plot adjacent to PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Bromus inermis</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Brassica juncea</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
3. <u>Poa pratensis</u>	<u>10</u>	_____	<u>FAC</u>	
4. <u>Dipsacus fullonum</u>	<u>5</u>	_____	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>105%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 10 x 3 = 30  
 FACU species 65 x 4 = 260  
 UPL species 30 x 5 = 150  
 Column Totals: 105 (A) 440 (B)  
 Prevalence Index = B/A = 4.2

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
 \_\_\_ 2 - Dominance Test is >50%  
 \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
--

Remarks: (Include photo numbers here or on a separate sheet.)  
 No test is met. Photograph C-9.

**SOIL**

Sampling Point: SP-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (Inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
 A soil sample was not taken. Soil is not assumed to be hydric due to the lack of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?        Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?         Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-10  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 1.00 Lat: 41.095862 Long: -92.550942 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-10 is an upland sample plot adjacent to PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Prevalence Index worksheet:</b>				
Total % Cover of: _____ Multiply by: _____				
OBL species <u>0</u> x 1 = <u>0</u>				
FACW species <u>0</u> x 2 = <u>0</u>				
FAC species <u>0</u> x 3 = <u>0</u>				
FACU species <u>150</u> x 4 = <u>600</u>				
UPL species <u>10</u> x 5 = <u>50</u>				
Column Totals: <u>160</u> (A) <u>650</u> (B)				
Prevalence Index = B/A = <u>4.1</u>				
<b>Hydrophytic Vegetation Indicators:</b>				
___ 1 - Rapid Test for Hydrophytic Vegetation				
___ 2 - Dominance Test is >50%				
___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.) No test is met. Photograph C-10.				



**SOIL**

Sampling Point: SP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
 A soil sample was not taken. Soil is not assumed to be hydric due to the lack of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
<u>Primary Indicators (minimum of one is required: check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?        Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?         Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Indicator D2 is met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-11  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.096471 Long: -92.551375 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-11 is in PEM W-7. An upland sample plot was not taken adjacent to this wetland, because the wetland was bordered by PUB W-6 and spoils piles. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border: none;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>150</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.0</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>75</u>	x 2 = <u>150</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>150</u> (B)	Prevalence Index = B/A = <u>2.0</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>75</u>	x 2 = <u>150</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>75</u> (A)	<u>150</u> (B)																			
Prevalence Index = B/A = <u>2.0</u>																				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																

Remarks: (Include photo numbers here or on a separate sheet.)  
 Rapid test is met. Photograph C-11.

**SOIL**

Sampling Point: SP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input checked="" type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
 A soil sample was not taken. Soil is assumed to be hydric due to the prevalence of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-12  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 2.00 Lat: 41.095387 Long: -92.550681 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-12 is an upland sample plot adjacent to PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				
1. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b>
2. _____	_____	_____	_____	Total % Cover of:                      Multiply by:
3. _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
4. _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
5. _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
_____ = Total Cover				FACU species <u>110</u> x 4 = <u>440</u>
				UPL species <u>5</u> x 5 = <u>25</u>
				Column Totals: <u>115</u> (A) <u>465</u> (B)
				Prevalence Index = B/A = <u>4.0</u>
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>				
1. <u>Schedonorus arundinaceus</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b>
2. <u>Trifolium repens</u>	<u>20</u>		<u>FACU</u>	___ 1 - Rapid Test for Hydrophytic Vegetation
3. <u>Poa annua</u>	<u>10</u>		<u>FACU</u>	___ 2 - Dominance Test is >50%
4. <u>Pastinaca sativa</u>	<u>5</u>		<u>UPL</u>	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
5. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
6. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>115%</u> = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				
No test is met. The sample plot is within a mowed driveway. Photograph C-12.				

**SOIL**

Sampling Point: SP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
A soil sample was not taken. Soil is not assumed to be hydric due to the lack of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
<u>Primary Indicators (minimum of one is required: check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
No indicators are met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-13  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.095417 Long: -92.550910 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-13 is in PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Salix nigra</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>10%</u> = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>102</u> (A)</td> <td><u>198</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.9</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>102</u> (A)	<u>198</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>90</u>	x 2 = <u>180</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>2</u>	x 4 = <u>8</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>102</u> (A)	<u>198</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>																		
1. <u>Phalaris arundinacea</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Phragmites australis</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>															
3. <u>Asclepias syriaca</u>	<u>2</u>	_____	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>92%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Rapid test is met. Photograph C-13.																		

**SOIL**

Sampling Point: SP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
Indicator A4 is met. A soil sample was not taken.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>3.00</u> Water Table Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0.00</u> Saturation Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0.00</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-14  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 8.00 Lat: 41.097059 Long: -92.552137 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-14 is an upland sample plot adjacent to PEM W-9. The sample plot is located on an overgrown berm with abandoned railroad tracks. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>45</u> x 5 = <u>225</u> Column Totals: <u>120</u> (A) <u>525</u> (B)  Prevalence Index = B/A = <u>4.4</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>				
1. <u>Juniperus virginiana</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
<u>5%</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>				
1. <u>Pastinaca sativa</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
2. <u>Ambrosia artemisiifolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Galium aparine</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Poa annua</u>	<u>15</u>	_____	<u>FACU</u>	
5. <u>Schedonorus arundinaceus</u>	<u>15</u>	_____	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>115%</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) No test is met. Photograph C-14.				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				



**SOIL**

Sampling Point: SP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
A soil sample was not taken. Soil is not assumed to be hydric due to the lack of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>			
<u>Primary Indicators (minimum of one is required: check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
No indicators are met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-15  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.097103 Long: -92.552106 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-15 is in PEM W-9. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phragmites australis</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Fraxinus pennsylvanica</u>	<u>15</u>	_____	<u>FACW</u>	
3. <u>Galium aparine</u>	<u>10</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 85 x 2 = 170  
 FAC species 0 x 3 = 0  
 FACU species 10 x 4 = 40  
 UPL species 0 x 5 = 0  
 Column Totals: 95 (A) 210 (B)  
 Prevalence Index = B/A = 2.2

**Hydrophytic Vegetation Indicators:**  
 1 - Rapid Test for Hydrophytic Vegetation  
 2 - Dominance Test is >50%  
 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks: (Include photo numbers here or on a separate sheet.)  
 Rapid test is met. Photograph C-15.

**SOIL**

Sampling Point: SP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
Indicator A4 is met. A soil sample was not taken.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-16  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.096663 Long: -92.552020 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-16 is in PEM W-9. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Prevalence Index worksheet:</b>				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )		Total % Cover of: _____ Multiply by: _____		
1. _____	_____	OBL species	<u>0</u>	x 1 = <u>0</u>
2. _____	_____	FACW species	<u>100</u>	x 2 = <u>200</u>
3. _____	_____	FAC species	<u>0</u>	x 3 = <u>0</u>
4. _____	_____	FACU species	<u>0</u>	x 4 = <u>0</u>
5. _____	_____	UPL species	<u>0</u>	x 5 = <u>0</u>
_____ = Total Cover				Column Totals: <u>100</u> (A) <u>200</u> (B)
Prevalence Index = B/A = <u>2.0</u>				
<b>Hydrophytic Vegetation Indicators:</b>				
<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				
Remarks: (Include photo numbers here or on a separate sheet.)				
Rapid test is met. Photograph C-16.				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

**SOIL**

Sampling Point: SP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Indicator A4 is met. A soil sample was not taken.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4.00</u> Water Table Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.00</u> Saturation Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.00</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		



**SOIL**

Sampling Point: SP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
A soil sample was not taken. Soil is not assumed to be hydric due to the lack of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?        Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?         Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicator D2 is met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-18  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.0981744 Long: -92.553065 Datum: NAD 83  
 Soil Map Unit Name: Givin silt loam, benches, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-18 is in PEM W-12. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>180</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.0</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>180</u> (B)	Prevalence Index = B/A = <u>2.0</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>90</u> (A)	<u>180</u> (B)																			
Prevalence Index = B/A = <u>2.0</u>																				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover																				
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																

Remarks: (Include photo numbers here or on a separate sheet.)  
 Rapid test is met. Photograph C-18.



**SOIL**

Sampling Point: SP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (Inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:  
Indicator A4 is met. A soil sample was not taken.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-19  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.098220 Long: -92.551950 Datum: NAD 83  
 Soil Map Unit Name: Ladoga silt loam, terrace, 5 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: SP-19 is an upland sample plot adjacent to PEM W-12. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td>x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>405</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.1</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>95</u>	x 4 = <u>380</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>100</u> (A)	<u>405</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>95</u>	x 4 = <u>380</u>																	
UPL species <u>5</u>	x 5 = <u>25</u>																	
Column Totals: <u>100</u> (A)	<u>405</u> (B)																	
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
<b>Herb Stratum (Plot size: <u>5 ft r</u> )</b>																		
1. <u>Medicago lupulina</u>	<u>65</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Erigeron canadensis</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. <u>Pastinaca sativa</u>	<u>5</u>		<u>UPL</u>															
4. <u>Solidago altissima</u>	<u>5</u>		<u>FACU</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>100%</u> = Total Cover																		
<b>Woody Vine Stratum (Plot size: <u>30 ft r</u> )</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														
Remarks: (Include photo numbers here or on a separate sheet.) No test is met. Photograph C-19.																		

**SOIL**

Sampling Point: SP-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
 A soil sample was not taken. Soil is not assumed to be hydric due to the lack of wetland hydrology indicators and hydrophytic vegetation.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?        Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?         Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicator D2 is met.		

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-20  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.097389 Long: -92.551080 Datum: NAD 83  
 Soil Map Unit Name: Ladoga silt loam, terrace, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: SP-20 is in PEM W-5. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>45</u></td> <td>x 2 = <u>90</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>60</u> (A)</td> <td><u>105</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.8</u>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>45</u>	x 2 = <u>90</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>60</u> (A)	<u>105</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>15</u>	x 1 = <u>15</u>																	
FACW species <u>45</u>	x 2 = <u>90</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>60</u> (A)	<u>105</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u> )																		
1. <u>Phragmites australis</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. <u>Salix nigra</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>60%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u> )																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														

Remarks: (Include photo numbers here or on a separate sheet.)  
 Rapid test is met. Photograph C-20.

**SOIL**

Sampling Point: SP-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
Indicator A4 is met. A soil sample was not taken.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)

<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>4.00</u> Water Table Present?      Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0.00</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0.00</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Indicators are met.

**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Ottumwa Generating Station Pond Closure & Wastewater Treatment Project City/County: Wapello County Sampling Date: 2020-05-28  
 Applicant/Owner: Interstate Power and Light Company State: Iowa Sampling Point: SP-21  
 Investigator(s): O. Haney, J. Maine Section, Township, Range: S26 T73N R15W  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0.00 Lat: 41.098757 Long: -92.550932 Datum: NAD 83  
 Soil Map Unit Name: Ladoga silt loam, terrace, 5 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No  (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil , or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	

Remarks:  
 SP-21 is in PEM W-12. There is no upland sample plot adjacent to this wetland. The wetland is immediately bordered by gravel along the railroad tracks and PUB W-13. According to the Palmer Drought Severity Index the area was experiencing moderately moist conditions at the time of sampling. A soil sample was not taken.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u> )				
1. <u>Phragmites australis</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>80%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Rapid test is met.  
 Photograph C-21.

**SOIL**

Sampling Point: SP-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input checked="" type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
Indicator A4 is met. A soil sample was not taken.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?        Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?         Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Indicators are met.		

## **APPENDIX C - SITE PHOTOGRAPHS**





Photograph C-1: View of Sample Plot (SP)-1 in PEM Wetland (W)-1, facing south.



Photograph C-2: View of upland SP-2, facing northwest.

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Photograph C-3: View of SP-3 in PEM W-2, facing southeast.



Photograph C-4: View of SP-4 in PSS W-16, facing east.

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Photograph C-5: View of upland SP-5, facing north.



Photograph C-6: View of SP-6 in PSS W-3, facing southwest.

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Photograph C-7: View of SP-7 in PEM W-4, facing east. A soil sample was not collected.



Photograph C-8: View of SP-8 in PEM W-5, facing east. A soil sample was not collected.

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Photograph C-9: View of upland SP-9, facing southwest. A soil sample was not collected.



Photograph C-10: View of upland SP-10, facing northwest. A soil sample was not collected.

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Photograph C-11: View of SP-11 in PEM W-7, facing east. A soil sample was not collected.



Photograph C-12: View of upland SP-12, facing west. A soil sample was not collected.

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Photograph C-13: View of SP-13 in PEM W-5, facing east. A soil sample was not collected.



Photograph C-14: View of upland SP-14, facing north. A soil sample was not collected.

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Photograph C-15: View of SP-15 in PEM W-9, facing north. A soil sample was not collected.



Photograph C-16: View of SP-16 in PEM W-9, facing west. A soil sample was not collected.

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Photograph C-17: View of upland SP-17, facing northeast. A soil sample was not collected.



Photograph C-18: View of SP-18 in PEM W-9, facing south. A soil sample was not collected.

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Photograph C-19: View of upland SP-19, facing west. A soil sample was not collected.



Photograph C-20: View of SP-20 in PEM W-5, facing northeast. A soil sample was not collected.

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Photograph C-21: View of SP-21 in PEM W-12, facing east. A soil sample was not collected.



Photograph C-22: View of PUB W-6, facing northeast.

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Photograph C-23: View of PUB W-10, facing west.



Photograph C-24: View of PUB W-11, facing west.

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Photograph C-25: View of PUB W-13, facing north.



Photograph C-26: View of PUB W-14, facing northwest.

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Photograph C-27: View of PUB W-15, facing northwest.



Photograph C-28: View of perennial Stream (S)-1, Middle Avery Creek, looking upstream (west).

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Photograph C-29: View of perennial S-2, Des Moines River, looking downstream (southeast).



Photograph C-30: View of intermittent S-3, looking upstream (northwest).

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Photograph C-31: View of ephemeral S-4, looking downstream (northeast).



Photograph C-32: View of ephemeral S-5, looking downstream (east).

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Photograph C-33: View of representative upland forested area at Photograph Point (PP)-1, facing north.



Photograph C-34: View of representative upland fallow field at PP-2, facing southwest.

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Photograph C-35: View of existing outfall feeding intermittent S-3 at PP-5, facing north.



Photograph C-36: View of representative upland, maintained lawn at PP-7, facing north.

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Photograph C-37: View of representative spoils area within bottom ash area at PP-11, facing west.

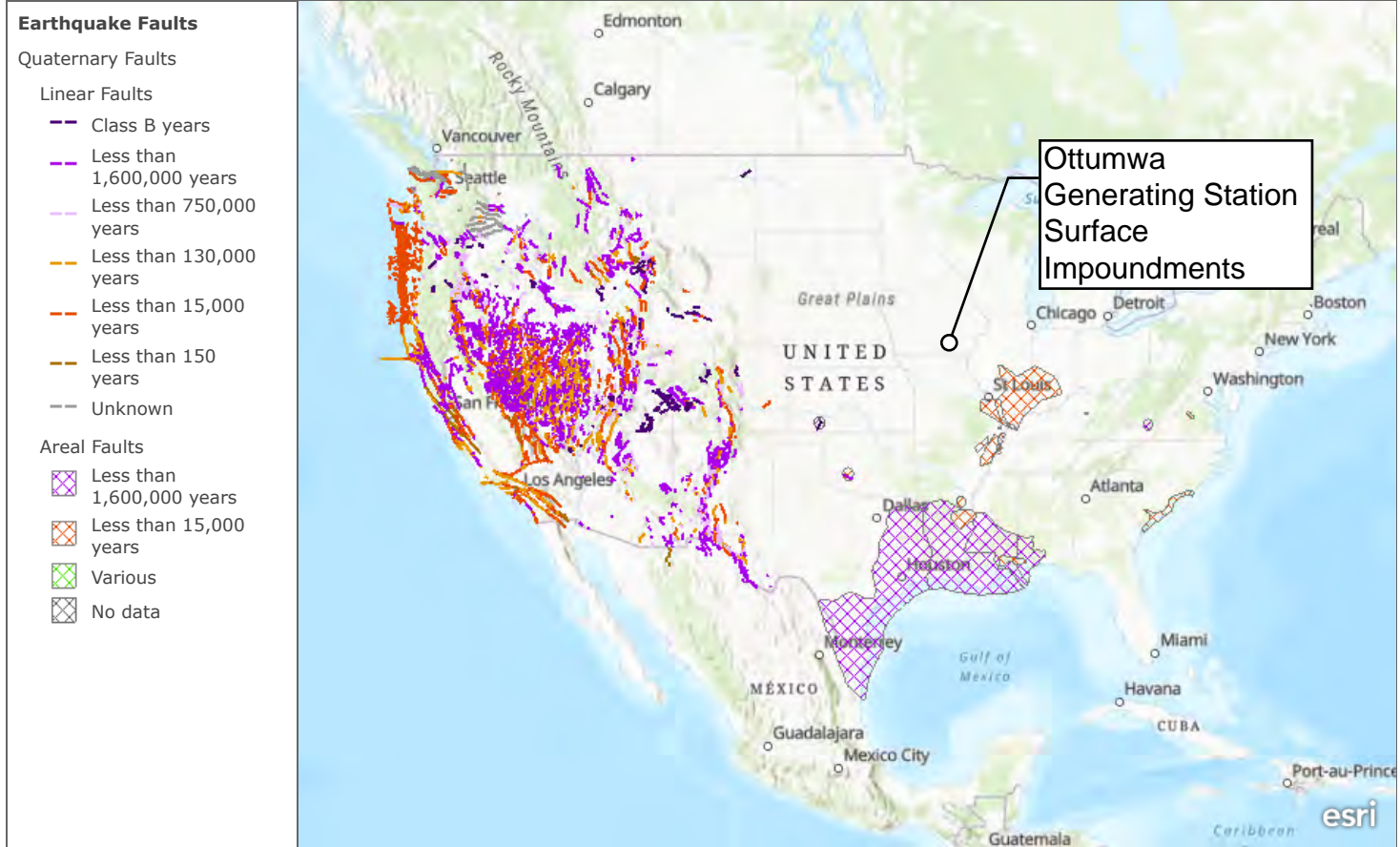
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Appendix B  
Fault Location Map

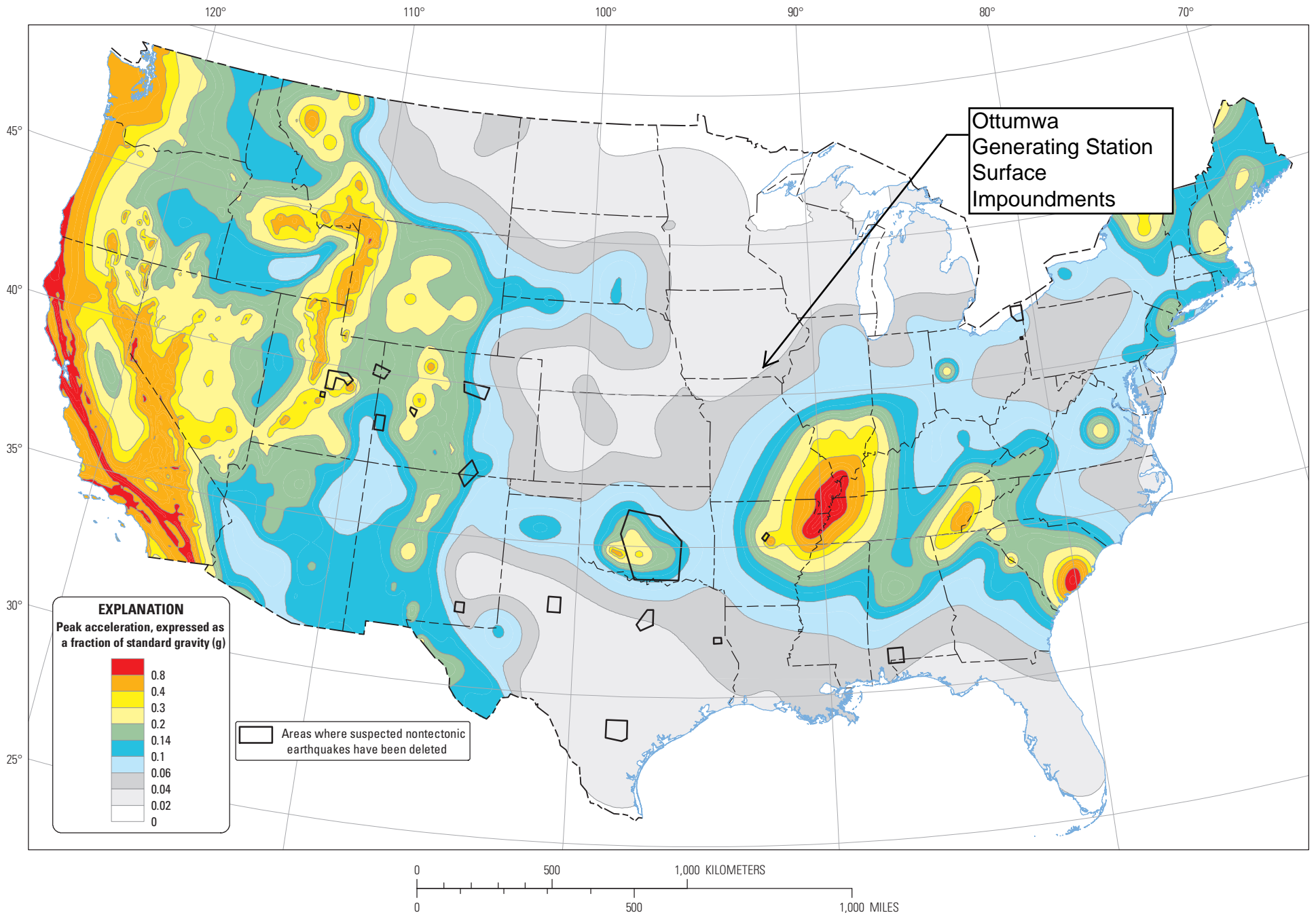
### Earthquake Faults



This map layer, utilizing data from the U.S. Geological Survey's (USGS) Earthquake Hazards Program (EHP), details known faults and folds in the U.S.

Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA | Acknowledgment of the Quaternary Faults and Fold Database, the U.S. Geological Survey, and (or) the National Atlas of the United States of America would be appreciated in products derived from these data.

Appendix C  
Seismic Hazard Map



## Two-percent probability of exceedance in 50 years map of peak ground acceleration

Source: USGS seismic impact zones map, <http://earthquake.usgs.gov/static/maps/continuous/2014/2014pga2pct.pdf>