



VIA EMAIL

August 25, 2016

Mr. Jeffrey Maxted
Alliant Energy – Sr. Environmental Specialist
4902 North Biltmore Lane
Madison, WI 53718-2148

**Re: Liner Design Criteria for Existing CCR Surface Impoundments
Interstate Power and Light Company (IPL)
Burlington Generating Station
Burlington, Iowa**

Dear Mr. Maxted;

Hard Hat Services (HHS) assessed the liner design criteria for the existing CCR surface impoundments located at the Burlington Generating Station in Burlington, IA.

Background Information

In accordance with the requirements set forth in §257.71(a) of the CCR Rule (40 CFR 257.50-107), an owner or operator of an existing CCR surface impoundment must document whether or not the CCR unit was constructed with a liner that meets, at a minimum, one of the following three categories:

- i. A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec,
- ii. A composite liner that meets the requirements of §257.70(b) - A composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner, and the lower component consisting of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Geomembrane liner components consisting of high density polyethylene must be at least 60-mil thick. The geomembrane liner or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The composite liner must meet the requirements specified in §257.70 (b)(1) through (4).
- iii. An alternative composite liner that meets the requirements of §257.70(c). An alternative composite liner shall meet the following requirements:

- An alternative composite liner must consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. Geomembrane liner components consisting of high density polyethylene must be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the geomembrane liner must be installed in direct and uniform contact with the compacted soil.
- The owner or operator must obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods.
- The alternative composite liner must meet the requirements specified in §257.70 (b)(1) through (4).

Facility Specific Information

The IPL – Burlington Generating Station (BGS) is located at 4282 Sullivan Slough Road, Burlington, Iowa 52601. Figure 1 provides both a topographic map and an aerial of the BGS facility location, with the approximate property boundary of the facility identified. Figure 2 identifies each CCR Unit and illustrates the storm water and process water route. BGS has four existing CCR surface impoundments, which are identified as follows:

- BGS Ash Seal Pond
- BGS Main Ash Pond
- BGS Economizer Pond
- BGS Upper Ash Pond

Liner Determination

After review of the reasonably and readily available documentation, the following CCR Units were determined to not meet the requirements of §257.71(a)(1)(i), (ii), or (iii):

- BGS Ash Seal Pond
- BGS Main Ash Pond
- BGS Economizer Pond
- BGS Upper Ash Pond


All existing unlined CCR surface impoundments are subject to the closure or retrofit requirements of §257.101(a).

Qualified Professional Engineer Certification

The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements §257.71(a) is accurate.

To meet the requirements of §257.71(b), I Mark W. Loerop hereby certify that I am a licensed Professional Engineer in the State of Iowa; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in §257.71(a).



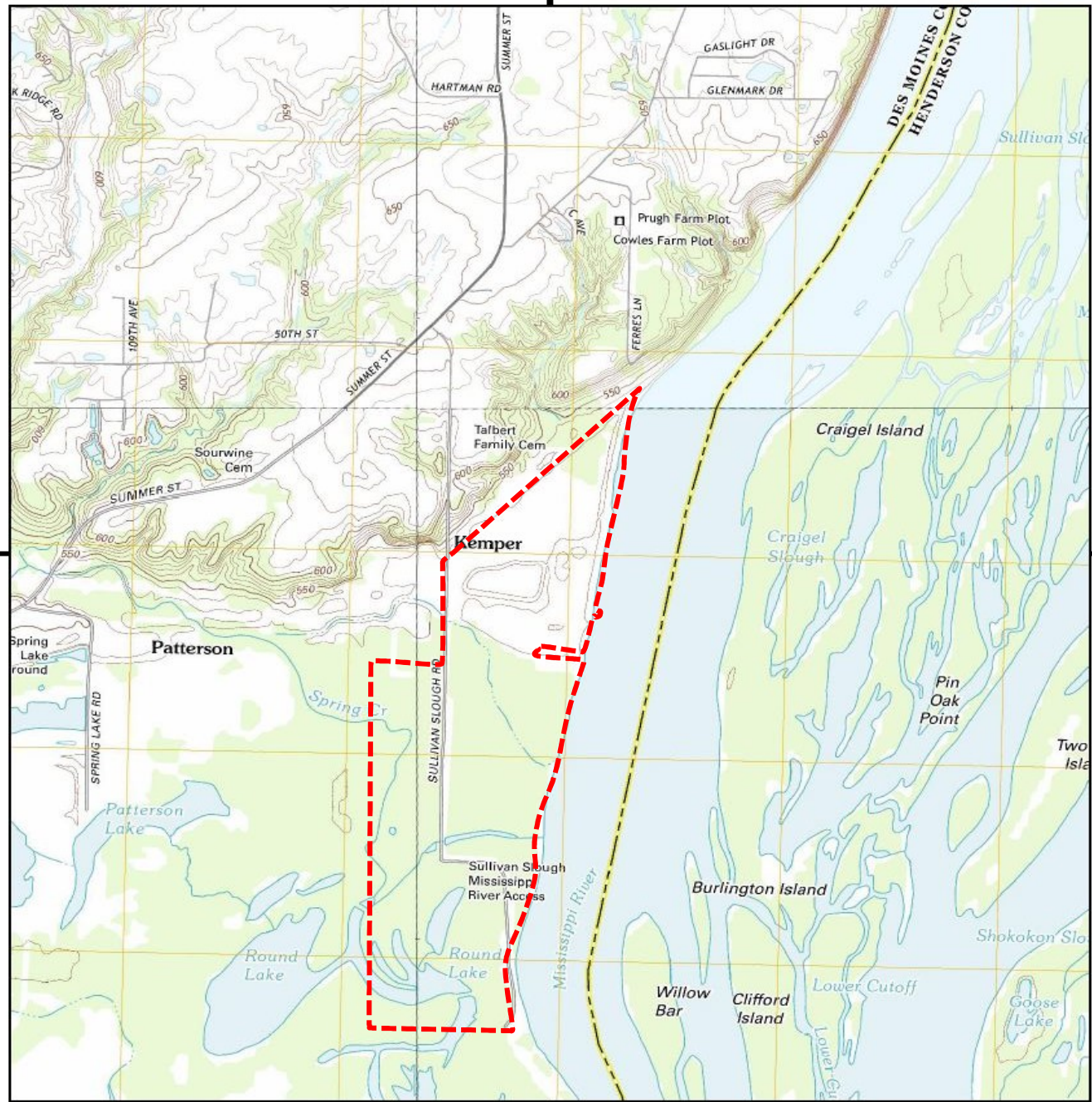
By: 
Name: MARK LOEROP
Date: 8-25-2016

- cc: Tony Morse, Alliant Energy
- att: Figure 1 – Site Location
Figure 2 – Storm Water Routing

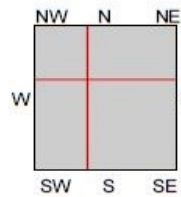
MWL/tjh/CTS

Historical Topo Map

2012, 2013



This report includes information from the following map sheet(s).

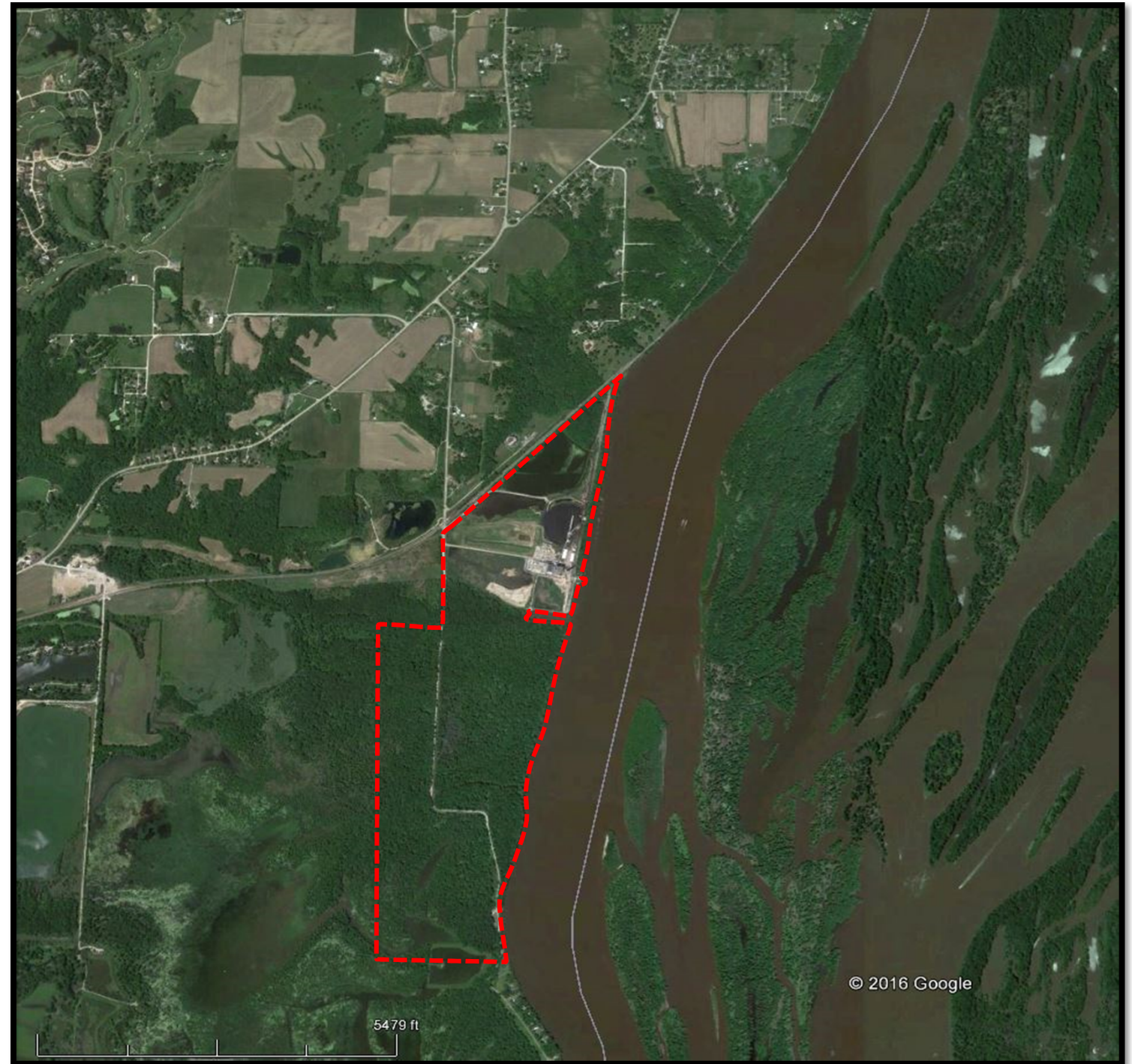


TP, Lomax, 2012, 7.5-minute
 NE, Burlington, 2013, 7.5-minute
 SW, Dallas City, 2012, 7.5-minute
 NW, West Burlington, 2013, 7.5-minute

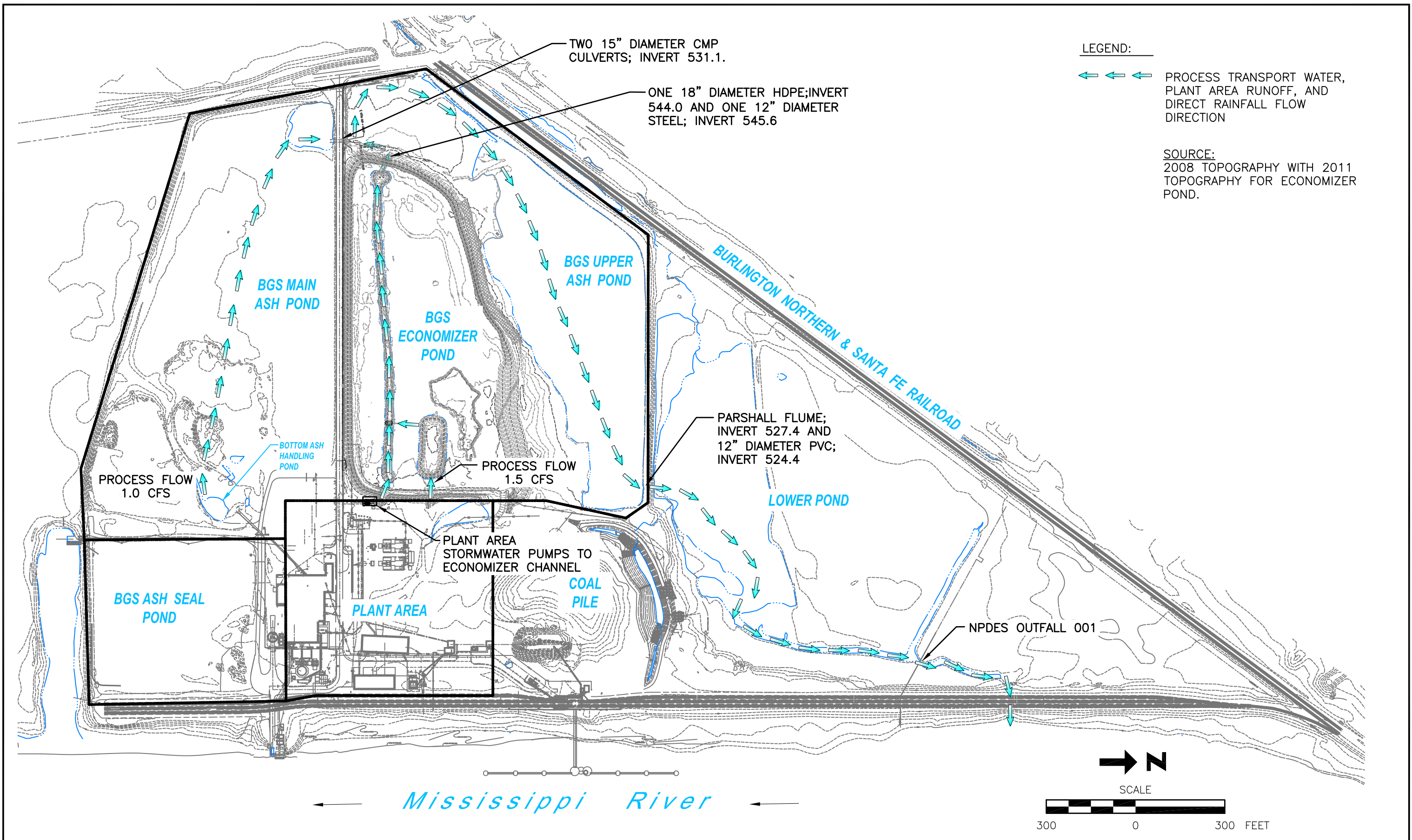
SITE NAME: Burlington Generating Station
 ADDRESS: 4282 Sullivan Slough Road
 Burlington, IA 52601
 CLIENT: Environmental Site Assessors




Historical Aerial Photo 6/12/2014

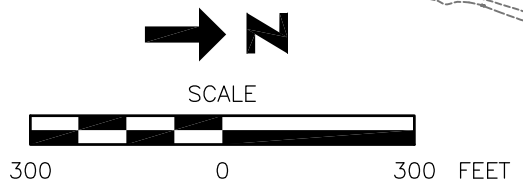


----- Approximate Property Boundary



LEGEND:
 PROCESS TRANSPORT WATER, PLANT AREA RUNOFF, AND DIRECT RAINFALL FLOW DIRECTION

SOURCE:
 2008 TOPOGRAPHY WITH 2011 TOPOGRAPHY FOR ECONOMIZER POND.



NOTICE
 THIS DRAWING IS THE PROPERTY OF HARD HAT SERVICES AND IS NOT TO BE REPRODUCED, CHANGED, OR COPIED IN ANY FORM OR MANNER WITHOUT PRIOR WRITTEN PERMISSION. ALL RIGHTS RESERVED.

REV	DATE	BY	DESCRIPTION

SCALE: AS SHOWN DATE: 5-13-16
 DRAWN BY: JFD CHECKED BY: TJH APPROVED BY: MWL



HARD HAT SERVICES[™]
 Engineering, Construction and Management Solutions

CLIENT / LOCATION
 ALLIANT ENERGY
 BURLINGTON GENERATING STATION
 BURLINGTON, IOWA

DRAWING DESCRIPTION
 Liner Design Criteria
 SITE PLAN

JOB 154.018.012.001
 SHT. FIGURE 1
 DWG. 154.018.012.001-D1