



GRAND HAVEN BOARD OF LIGHT AND POWER - J.B. SIMS GENERATING STATION

CCR SURFACE IMPOUNDMENT - ANNUAL UPDATE TO THE NO ALTERNATIVE DISPOSAL CAPACITY DOCUMENTATION

Pursuant to 40 CFR 257.103(b)(1)

Submitted to:

Grand Haven Board of Light and Power

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Submitted by:

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Project No. 18113500

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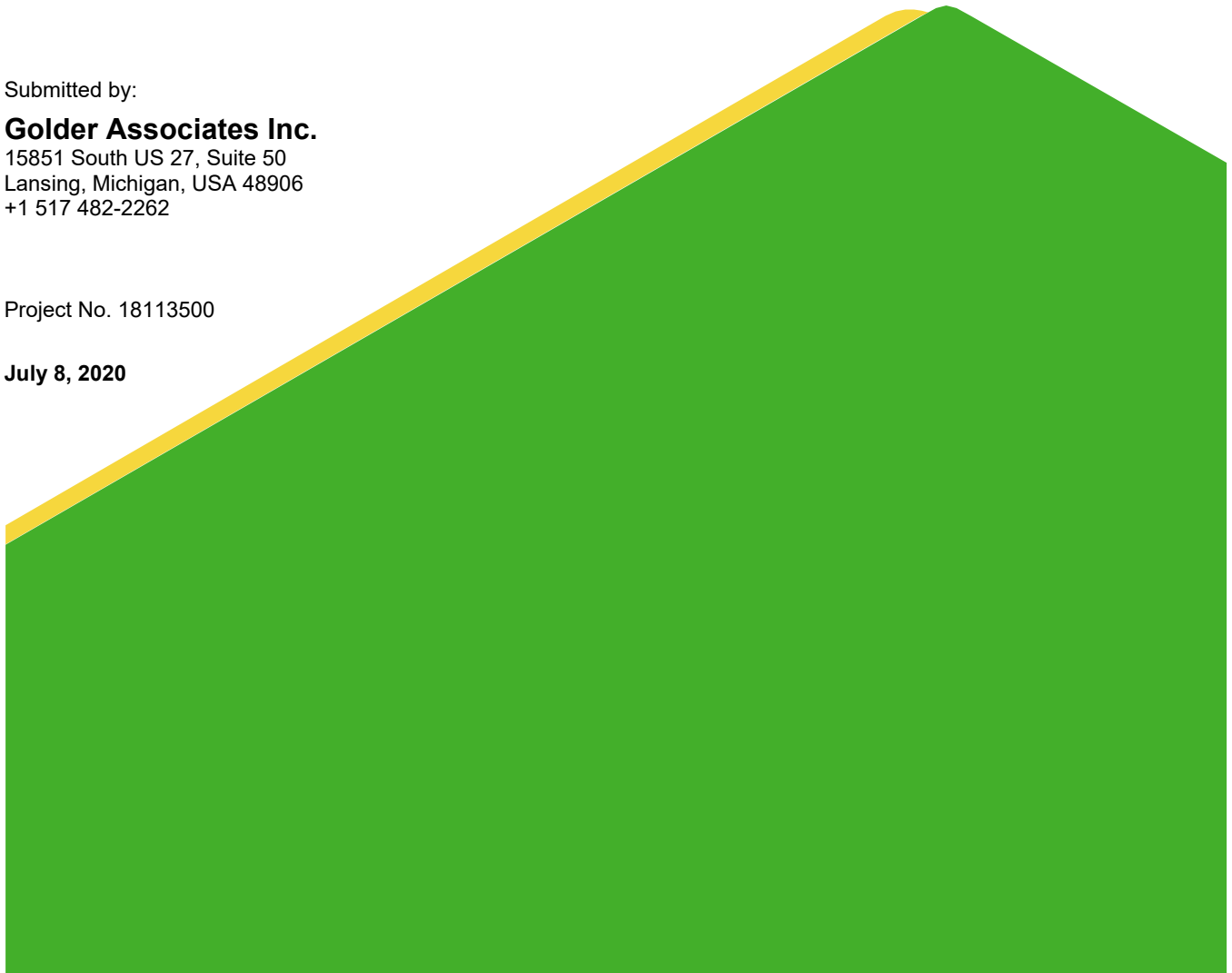


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1.0 INTRODUCTION

1.1 Background

Golder Associates Inc. (Golder) has prepared this letter to the Grand Haven Board of Light and Power (GHBLP) as the annually updated compliance demonstration per the United States Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Coal Combustion Residuals Rule (CCR Rule) requirements for CCR Rule 40 Code of Federal Regulations (CFR) Section 257.103(b)(1) for the J.B. Sims Generating Station (JB Sims or Site) located on Harbor Island, Grand Haven, Michigan.

GHBLP's J.B. Sims has managed coal combustion residuals (CCR) in two separate and distinct active surface impoundments referred to as the Unit 3 East and West Bottom Ash Impoundments, as shown on Figures 1 and 2. The Units 1 and 2 Ash Impoundments are inactive and no longer receive CCR.

On July 8, 2019, the GHBLP issued a notification and documentation of "No Alternative Disposal Capacity" to the site's operating record, pursuant to Title 40 of the Code of Federal Regulations Section 257 (40 CFR 257), Section 103. The "No Alternative Disposal capacity" demonstration per 40 CFR 257.103 outlined specific conditions that must be met to qualify for continued operation of the Unit 3 East and West Bottom Ash Impoundments at JBSGS. In that July 8, 2019 notification, the GHBLP certified that the JBSGS would cease operations of the coal-fired boilers by June 2020, however, operations of the boilers were ceased on February 13, 2020. 40 CFR 257.103(b)(1) allows an active CCR unit to continue to receive CCR if there is a demonstration that there is a lack of existing alternative disposal capacity on- or off-Site "no alternate disposal capacity", without consideration of increase in costs or inconvenience to GHBLP.

1.2 Purpose

As stated in the Preamble of the Title 40 of the Code of Federal Regulations Section 257 (40 CFR §257), Section (C)(V)(M)(4)(b)(iii)(c) (page 21423 of the rule):

"c. Alternative Closure Requirements: The Agency is finalizing alternative closure requirements in two narrow circumstances for a CCR landfill or CCR surface impoundment that would otherwise have to cease receiving CCR and close, consistent with the requirements of § 257.101(a), (b)(1), or (d). The first is where the owner or operator can certify that CCR must continue to be managed in that CCR unit due to the absence of both on-site and off-site alternative disposal capacity. § 257.103(a). The second is where the owner or operator of a facility certifies that the facility will cease operation of the coal-fired boilers no later than the dates specified in the rule but lacks alternative disposal capacity in the interim. § 257.103(b). Under either of these alternatives, CCR units may continue to receive CCR under the specified conditions explained below. In addition, under either alternative, the owner or operator must continue to comply with all other requirements of the rule, including the requirement to conduct any necessary corrective action.

1. *No alternative CCR disposal capacity (§ 257.103(a)).* The Agency recognizes that the circumstance may arise where a facility's only disposal capacity, both on-site and off-site, is in a CCR unit that has triggered the closure requirements in § 257.101(a), (b)(1), or (d). As a result, the facility may be faced with either violating the closure requirements in § 257.101 by continuing to place CCR in a unit that is required to close, or having to cease generating power at that facility because there is no place in which to dispose of the resulting waste. For example, while it is possible to transport dry ash off-site to alternate disposal facility, that simply is not feasible for wet-generated CCR. Nor can facilities immediately convert to dry handling systems. As noted previously, the law

cannot compel actions that are physically impossible, and it is incumbent on EPA to develop a regulation that does not in essence establish such a standard.”

The Preamble and 40 CFR §257.103(b)(1) outline specific conditions that must be met to qualify for continued operation of the Unit 3 East and West Bottom Ash Impoundments at JB Sims. Golder has prepared this report to provide documentation pursuant to 40 CFR §257.103(b)(1)(i) that demonstrates the lack of existing alternative disposal capacity on- or off-Site, without consideration of increase in costs or inconvenience to GHBLP.

Per 40 CFR §257.103(b)(2), “for a CCR surface impoundment that is 40 acres or smaller, the coal-fired boiler must cease operation and the CCR surface impoundment must have completed closure no later than October 17, 2023”. The GHBLP JB Sims Board announced that CCR operations were ceased on February 13, 2020, as required by 40 CFR §257.103(b)(1) and (b)(2).

2.0 DOCUMENTATION

To satisfy the requirements of 40 CFR §257.103(b)(1) the following sections have been prepared: 1) detail the construction and current use of the Unit 3 East and West Bottom Ash Impoundments, 2) describe flows into existing impoundments based on current use, and 3) evaluate existing on- and off-Site alternative disposal options.

2.1 Unit 3 East and West Bottom Ash Impoundments

The two distinct and separate Unit 3 East and West Bottom Ash Impoundments are located adjacent to each other and are formed by earthen embankments or ring dikes with a common embankment between them, as shown on Figure 2. The impoundment areas range from 175 to 190 feet long by 71 to 80 feet wide with an approximate surface area of 0.2 and 0.3 acres for the east and west impoundments, respectively. The impoundments were designed by Black & Veatch in 1981 and are constructed with compacted clay embankments with three horizontal to one vertical (3H:1V) exterior slopes and 2H:1V interior slopes with an approximately 10 feet wide crest. The embankments are not regulated as dams by the Michigan Dam Safety office.

Both impoundments were constructed with minimum 3 feet of compacted clay over the floor and are approximately 9 feet deep. The design bottom elevation of the impoundments is Elevation (EI) 585 feet (NGVD 29 datum and site benchmarks) and the current crest elevation ranges from 591.2 to 592.7 feet. Based on visual observations and discussions with GHBLP personnel, the impoundments are currently dry. The estimated storage capacity of each impoundment (with two feet of freeboard) is approximately 68,000 and 77,000 cubic feet for the east and west impoundments, respectively.

Since the boilers have ceased operations the impoundments currently only receive storm water and coal pile runoff. Dewatered bottom ash has already been excavated from these impoundments and transported off-site to the Ottawa County Farms Landfill. The Unit 3 impoundments are scheduled to be removed later in 2020.

2.2 Capacity Estimate

As described above, the Unit 3 East and West Bottom Ash Impoundments currently only receive storm water and coal pile runoff. Since the Unit 3 impoundments are currently only used for coal pile runoff and stormwater, and they are scheduled to be removed before the end of 2020, it would be impractical to provide a new storage source either on or off-site. Further, the majority of the CCR has already been removed and taken to a licensed landfill.

2.3 Existing On-Site Disposal Options

40 CFR §257.103(b)(1)(i) indicates that GHBLP must demonstrate that there is no available existing on-Site containment that could accept the flow that is currently discharged into the Unit 3 East and West Bottom Ash Impoundments. Golder has evaluated the existing containment structures that are on-Site and found that there is no existing structure meeting the applicable requirements of 40 CFR Part 257, Subpart D- Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

2.4 Existing Off-Site Disposal Options

40 CFR §257.103(b)(1)(i) indicates that GHBLP must demonstrate that there is no available existing off-Site disposal options that could accept the flow that is currently discharged into the Unit 3 East and West Bottom Ash Impoundments. GHBLP disposed of the dry bottom ash at the Ottawa County Farms Landfill which is approximately 15.3 miles (23 minutes' drive) from the Site. Based on discussions with Ottawa County Farms Landfill, they will not accept bottom ash unless it is dry. Given that the current amount of CCR in the Unit 3 Impoundments is minimal, the storm water remaining would be the majority of the material in the impoundments.

Golder has contacted other Type II landfills proximate to the JB Sims site and they will not accept the waste steam. In Michigan, Type II and Type III Landfills are not permitted to take liquid waste without approval from the Michigan Department of Environment, Great Lakes and Energy (EGLE) and must be solidified prior to disposal in the landfill.

Finally, the health and safety risks of the additional truck traffic both on-Site and on the public roads in the tourist town of Grand Haven, Michigan makes the off-hauling of wet materials not a viable option.

3.0 DEMONSTRATED COMPLIANCE

Table 1 includes the demonstrated ongoing compliance for the existing CCR units at the Site.

Table 1 - CCR Unit Existing Surface Impoundment Requirements

REQUIREMENT	40 CFR PART 257 RULE(S)	PART 115 CCR RULE COMPANION	CCR UNIT	DELIVERABLE TITLE	MOST RECENT SUBMITTAL DATE	NEXT SUBMITTAL DATE	NOTES
Documentation of "No Alternate Disposal Capacity" and Ceasing of Operations	§257.103(b)(1) and (2)	324.11519c (1)(c), alternate closure timeline option	Unit 3 East and West Bottom Ash Impoundment	CCR Surface Impoundment – No Alternative Disposal Capacity Documentation	7/8/2019	7/8/2020	For demonstration for allowance of continued operation in Unit 3 impoundments based on no alternate disposal capacity. This demonstration needs to be submitted annually per 257.103(b). CCR Impoundments will be removed in 2020.
Documentation of "No Alternate Disposal Capacity" and Ceasing of Operations	§257.103(b)(1) and (2)	324.11519c (1)(c), alternate closure timeline option	Unit 3 East and West Bottom Ash Impoundment	CCR Surface Impoundment – No Alternative Disposal Capacity Documentation	2/14/20	No additional submittals required at this time.	Letter notification of Ceasing of Boiler Operations was submitted on February 14, 2020.

REQUIREMENT	40 CFR PART 257 RULE(S)	PART 115 CCR RULE COMPANION	CCR UNIT	DELIVERABLE TITLE	MOST RECENT SUBMITTAL DATE	NEXT SUBMITTAL DATE	NOTES
Ceasing of Operations							
Location Restrictions	§257.60- §257.64	n/a for existing units	Units 1 and 2 Inactive Ash Impoundments and Unit 3 East and West Ash Impoundments	Location Restrictions Certification Report	9/5/2018	n/a	Includes alternate closure timeline and ceasing operations date of June 2020.
Design Requirements	§257.71	n/a for existing units	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East and West Ash Impoundments	Documentation of Liner Construction	1/24/2018	n/a	Initial Documentation of Liner Issued April 2017. Revision issued January 2018 to include Units 1 and 2 inactive Impoundments.
Groundwater Monitoring and Corrective Action	§257.90- §257.98	324.11519a (1)(h)	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East and West Ash Impoundments	2019 Annual Groundwater Monitoring & Corrective Action Report	1/31/2020	Annual (Next Due 1/31/2021)	Units 1 and 2 Inactive Impoundments were included in the multiunit network in 2018.
Structural Integrity Criteria	§257.73 (c), (d), and (e)	324.11519a (1)(e), (f) and (g)	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East and West Ash Impoundments	History of Construction, Structural Stability Assessment, and Initial Factor of Safety Assessment	n/a	n/a	§257.73 (c), §257.73 (d), and §257.73 (e) are not required for an existing surface impoundment that is incised and is not 5 feet high AND 20 acre-feet or 20 feet high
Structural Integrity Criteria	§257.73 (a)(1)	n/a	Unit 3 East and West Ash Impoundments	Permanent Marker Installation	12/15/2015	n/a	Completed

REQUIREMENT	40 CFR PART 257 RULE(S)	PART 115 CCR RULE COMPANION	CCR UNIT	DELIVERABLE TITLE	MOST RECENT SUBMITTAL DATE	NEXT SUBMITTAL DATE	NOTES
Structural Integrity Criteria	§257.73 (a)(2)	324.11519a (1)(d)	Unit 3 East and West Ash Impoundments	Hazard Potential Classification Assessment	3/27/2017	5 years (3/27/2022)	Not required for incised impoundments Units 1&2 Inactive Impoundments. CCR Impoundments will be removed in 2020.
Structural Integrity Criteria	§257.73 (a)(3)	n/a	Unit 3 East and West Ash Impoundments	Emergency Action Plan	3/29/2017	5 years (3/27/2022)	Not required for incised impoundments Units 1&2 Inactive Impoundments. CCR Impoundments will be removed in 2020.
Structural Integrity Criteria	§257.83(b)	324.11519a (1)(c)	Unit 3 East and West Ash Impoundments	Surface Impoundments Annual Visual Inspection	8/9/2019	Annually (8/9/2020)	Not required for incised impoundments Units 1&2 Inactive Impoundments. Will be required until Unit 3 is officially closed. CCR Impoundments will be removed in 2020, however, annual inspection is still required.
Fugitive Dust Controls	§257.80	324.11519a (2)	Unit 3 East and West Ash Impoundments	Fugitive Dust Control Plan and Annual Report	March 2017, with annual report in 2019	Updated annually and if operations change – including Plant Closure	Not required for Units 1&2 Inactive Impoundments. Updated annually.
Hydrologic & Hydraulic Capacity Requirements	§257.82	324.11519a (1)(i)	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East and West Ash Impoundments	CCR Surface Impoundments Inflow Design Flood Control System Plan	1/24/2018	Every 5 Years	Initial Flood Control Plan Issued April 2017. Revision Issued January 2018. CCR Impoundments will be removed in 2020.
Closure Requirements	§257.100-§257.103	324.11519b (6) through (10)	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East	Closure Plan	10/14/2019	Update with significant changes	Initial Closure Plan Issued April 2017. Revision issued December 2017. Additional Revision issued 10/14/19.

REQUIREMENT	40 CFR PART 257 RULE(S)	PART 115 CCR RULE COMPANION	CCR UNIT	DELIVERABLE TITLE	MOST RECENT SUBMITTAL DATE	NEXT SUBMITTAL DATE	NOTES
			and West Ash Impoundments				
Post-Closure Care	§257.104	324.11519b (10)	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East and West Ash Impoundments	Included with Closure Plan	12/21/2017	Update with significant changes – will be required for 2020 Closure	Initial Closure Plan Issued April 2017. Revision issued December 2017. CCR Impoundments will be removed in 2020.
Publicly Accessible Internet Site requirements	§257.107	n/a	Unit 1 and 2 Inactive Ash Impoundments , and Unit 3 Active East and West Ash Impoundments	n/a	n/a	n/a	Deliverables are being uploaded to the GHBLP's website as required and EGLE is notified.

4.0 CERTIFICATION

Golder has prepared this report to provide the necessary documentation pursuant to 40 CFR §257.103(b)(1)(i) and (2) that evaluates the existing alternative disposal capacity on- or off-Site, without consideration of increase in costs or inconvenience to GHBLP.

5.0 CLOSING

It is Golder's opinion that the information contained herein is true, accurate and has been prepared in accordance with good engineering practices and that the documentation provided, in accordance with 40 CFR §257.103(b)(1)(i) and (2), supports that there is no existing alternative disposal capacity on- or off-Site that could accept the flow currently being impounded in the Unit 3 East and West Bottom Ash Impoundments at the GHBLP.

Sincerely,

Golder Associates Inc.



Tiffany D. Johnson, P.E.
Principal



David M. List, P.E.
Principal

TDJ/dml

6.0 REFERENCES

GHBLP, Documentation of Liner Construction, Pursuant to 40 CFR 257.71, Units 1 and 2 Inactive Ash Ponds and Unit 3 Active East and West Ash Pond Surface Impoundments, prepared by Golder Associates Inc., dated January 2018.

GHBLP, Annual Groundwater Monitoring & Corrective Action Report, prepared by Golder Associates Inc., dated January 2019 and January 2020.

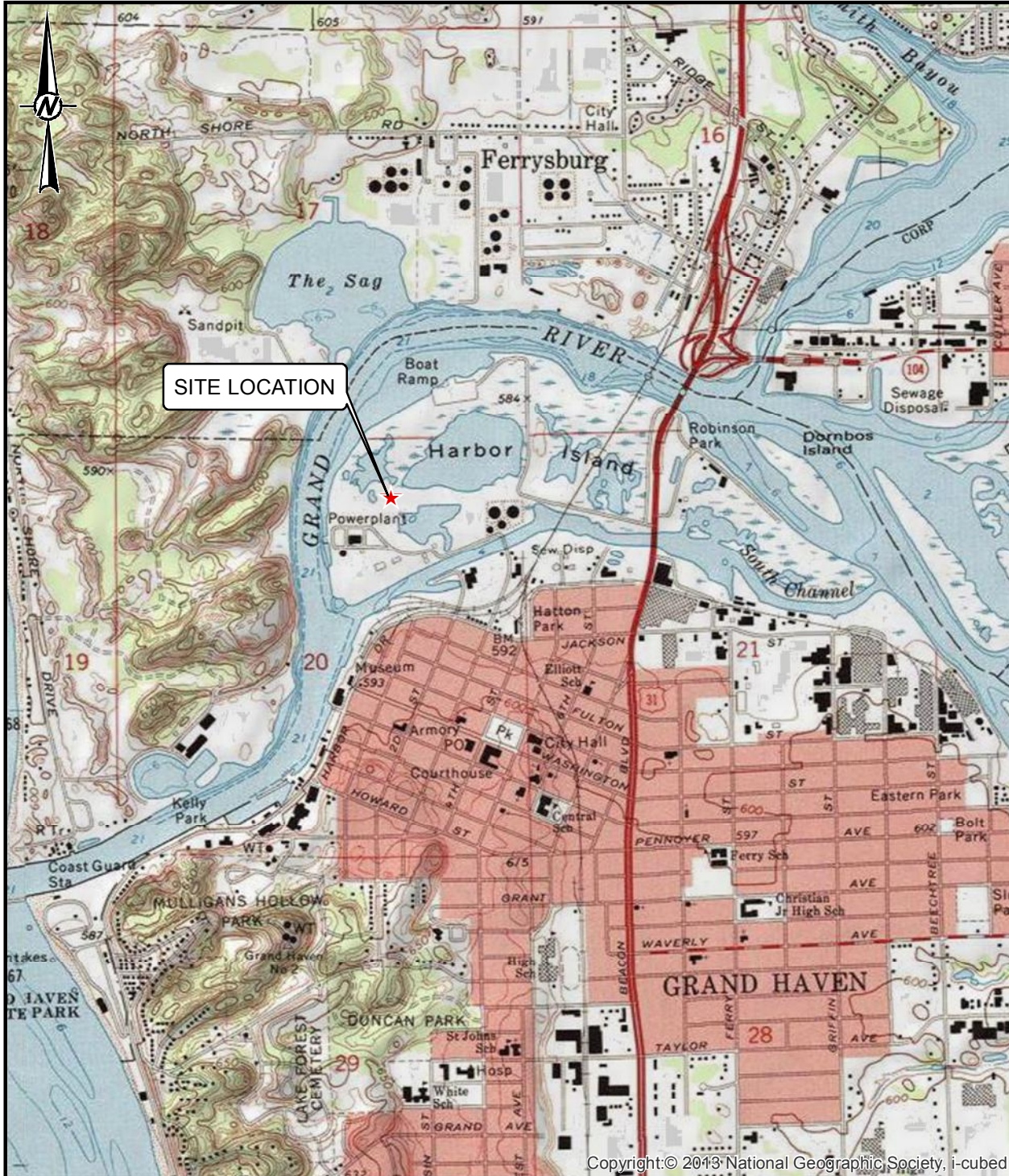
GHBLP, Location Restrictions Certification Report, Units 1&2 and Unit 3 East and West Surface Impoundments, Pursuant to 40 CFR 257.60 through 64, prepared by Golder Associates Inc., dated September 2018.

USEPA (US Environmental Protection Agency). 2015. Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. 40 CFR Part 257. Effective Date October 19, 2015, amended July 2018.

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https://golderassociates.sharepoint.com/sites/106416/18113350_ghblp_jb_sims/5_technical_work/updated_no_alternative_closure_doc.7-6-20/ghblp_ccr_surface_impoundment_no_alt_disposal_capacity_-_annual_update_7-8-20.docx

Figures



CLIENT
 GRAND HAVEN BOARD OF LIGHT AND POWER
 HARBOR ISLAND DRIVE
 GRAND HAVEN, MI

PROJECT
 CCR RULE COMPLIANCE

TITLE
 SITE LOCATION MAP

CONSULTANT	YYYY-MM-DD	2017-03-20
	PREPARED	JJS
	DESIGN	JJS
	REVIEW	DML
	APPROVED	TDJ

PROJECT No. 1789024	CONTROL 1775461A000-GIS.mxd	Rev. 0	FIGURE 1
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UNIT 3 WEST
BOTTOM ASH
POND

UNIT 3 EAST
BOTTOM ASH
POND

UNIT 1 ASH POND

UNIT 2 ASH POND

J.B.SIMS
GENERATING
STATION

GRAND
RIVER

NPDES OUTFALL
LOCATION



REFERENCE(S)

Service Layer Credits: Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

CLIENT

GRAND HAVEN BOARD OF LIGHT AND POWER
HARBOR ISLAND DRIVE
GRAND HAVEN, MI

PROJECT

CCR RULE COMPLIANCE

CONSULTANT

YYYY-MM-DD 2017-03-20

DESIGNED JJS

PREPARED JJS

REVIEWED DML

APPROVED TDJ

TITLE

OVERALL SITE PLAN

PROJECT NO.
1789024

CONTROL

REV.

FIGURE

2





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