

# **CLECO CAJUN LLC**

**BIG CAJUN II POWER PLANT**

**NEW ROADS, POINTE COUPEE PARISH, LOUISIANA**



## **5-YEAR PERIODIC REVIEW HAZARD POTENTIAL CLASSIFICATION**

**FLY ASH BASIN**

**OCTOBER 2021**

Providence Engineering and Environmental Group LLC  
1201 Main Street  
Baton Rouge, LA 70802  
(225) 766-7400  
[www.providenceeng.com](http://www.providenceeng.com)  
Providence Project No: 996-018



**TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Page</u></b>
<b>1.0 INTRODUCTION .....</b>	<b>1</b>
<b>2.0 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT .....</b>	<b>1</b>
<b>3.0 CONCLUSIONS .....</b>	<b>2</b>
<b>4.0 REFERENCES .....</b>	<b>3</b>

**LIST OF FIGURES**

**Figure**

- 1 Site Location Map
- 2 Site Map
- 3 Levee Breach Drainage Map

**LIST OF APPENDICES**

**Appendix**

- A P.E. Certification

## 1.0 INTRODUCTION

Providence Engineering and Environmental Group LLC (Providence) was contracted by Cleco Cajun LLC (Cleco) to perform the 5-year periodic review of the Hazard Potential Classification Assessment of the Fly Ash Basin at Cleco's Big Cajun II (BCII) Power Plant.

The Coal Combustion Residual (CCR) regulations at 40 CFR 257.73(a)(2) established requirements for owners and operators to conduct a Hazard Potential Classification Assessment to assess the potential adverse incremental consequences that would occur if there was a failure of the CCR surface impoundment. Cleco conducted the initial Hazard Potential Classification Assessment and placed it in the facility operating record on October 17, 2016.

This 5-year periodic review for the Hazard Potential Classification Assessment pertains to the Fly Ash Basin that is utilized for the Big Cajun II coal-fired generation unit. BCII is located at 10431 Cajun II Road, New Roads, Pointe Coupee Parish, Louisiana. A site location map showing the BCII Power Plant is included as **Figure 1**. The Fly Ash Basin is shown in **Figure 2**.

BCII ceased hauling fly ash to the Fly Ash Basin on April 11, 2021. Prior to that date, fly ash was hauled to the Fly Ash Basin in transport trucks and spread by dozers. The fly ash was hydrated naturally by rainfall and was compacted in the process. Fly ash was initially deposited in the southeast corner of the Fly Ash Basin. BCII had planned for the filling to proceed westward along the south levee. After the southern half of the basin is full, filling would continue from the northwestern portions of the basin eastward along the north levee. The northeast corner of the Fly Ash Basin would be the last section to be filled.

## 2.0 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

Per the CCR regulations, a hazard potential classification provides an indication for danger to life, development, or the environment in the event of a release of CCR from a surface impoundment. The CCR rule requires an owner or operator of any existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment to determine which of the following hazard potential classifications apply to their particular CCR unit. These potential classifications include the following:

- High Hazard Potential CCR Surface Impoundment – means a diked surface impoundment where failure or misoperation will probably cause loss of life.
- Significant Hazard Potential CCR Surface Impoundment – means a diked surface impoundment where failure or misoperation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.
- Low Hazard Potential CCR Surface Impoundment – means a diked surface impoundment where failure or misoperation results in no probable loss of

human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment's owner's property.

The 2016 CB&I Environmental & Infrastructure, Inc. (CB&I), report analyzed the Fly Ash Basin to determine effects of a breach in the levee system.

A review of the possible adverse consequences that could result from the release of water or stored contents due to failure of the Fly Ash Basin or mis-operation of the Fly Ash Basin was completed. It was determined that failure or mis-operation of the diked surface impoundments was unlikely to cause loss of human life. Failure or misoperation would cause low economic and/or environmental loss. Any disruption or loss is basically to Cleco's own property. This determination was based on the materials stored in the impoundments and the impoundment's capacity and physical location relative to downgradient inhabitants/structures and environmental systems. Specifically, it was determined that:

- The fly ash that is stored in the Fly Ash Basin is hydrated naturally by rainfall and is compacted in the process. The fly ash has a low susceptibility to flow beyond the Fly Ash Basin levees.
- If failure or mis-operation of the diked surface impoundments occurred, topographic control would generally direct flow away from inhabitants and sensitive structures as shown on the Levee Breach Drainage Map (**Figure 3**).
- Power plant structures are more than 1,500 feet away and are not downgradient from the Fly Ash Basin.
- Flow would generally proceed in a southerly direction until reaching an unnamed drainage ditch located about 750 feet south of the impoundments, then proceed southwesterly in the drainage ditch, flowing under LA Highway 10, then along a southerly path under a railroad track, then along an approximate 1.75-mile wooded area.
- The Fly Ash Basin capacity is insufficient to cause physical damage to the railroad track, highway, or environmental damage to the nearest water body (Lake Patin), even under complete and sudden failure conditions.
- Levees along the Mississippi River and the topography of the area would prevent a release from impacting the river.

The current operational status of the Fly Ash Basin has not changed since 2016 when the initial Hazard Potential Classification Assessment was completed, except fly ash has ceased being placed in the basin since April 11, 2021. Providence reviewed this assessment and has determined that the Fly Ash Basin will remain classified as a low hazard potential CCR surface impoundment.

### 3.0 CONCLUSIONS

Based on the review of the results of the levee breach analysis, the Fly Ash Basin at Cleco's Big Cajun II Power Plant will remain classified as a low hazard potential CCR surface impoundment due to the abovementioned factors in Section 2.0.

**Appendix A** contains a P.E. Certification that attests to the 5-year periodic Hazard Potential Classification Assessment of the Fly Ash Basin.

#### 4.0 REFERENCES

The following reports/documents were used to prepare this 5-year periodic review of the hazard potential classification assessment for the Fly Ash Basin:

CB&I Environmental & Infrastructure, Inc.; 2016; Big Cajun II CCR Compliance, Fly Ash and Bottom Ash Basin Structural Integrity Assessment Report, NRG Louisiana Generating, LLC, NRG Energy, Inc., New Roads, Louisiana.

Geosyntec Consultants; 2020; Big Cajun II Power Plant; CCR Surface Impoundment Annual Inspection Report, Cleco Cajun LLC, New Roads, Louisiana.

Environmental Protection Agency; 2015; 40 CFR Parts 257 and 261 Rules and Regulations, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, Volume 80, No. 74; Final Rule.

GeoEngineers, Inc.; 2011 (May); Preliminary Geotechnical Engineering Services, Ash Basins/Wastewater Treatment Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2011 (September); Embankment Dike Inspections Services, Ash Basins/Wastewater Treatment Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2012; Geotechnical Engineering Services Report, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2014; Preliminary Geotechnical Engineering Services, Ash Basins/Wastewater Treatment Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

GeoEngineers, Inc.; 2015; Dike Slope and Failure Evaluations, Ash Basin Ponds, Big Cajun II Generating Site, New Roads, Pointe Coupee Parish, Louisiana.

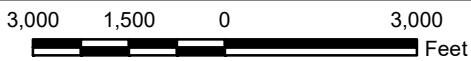
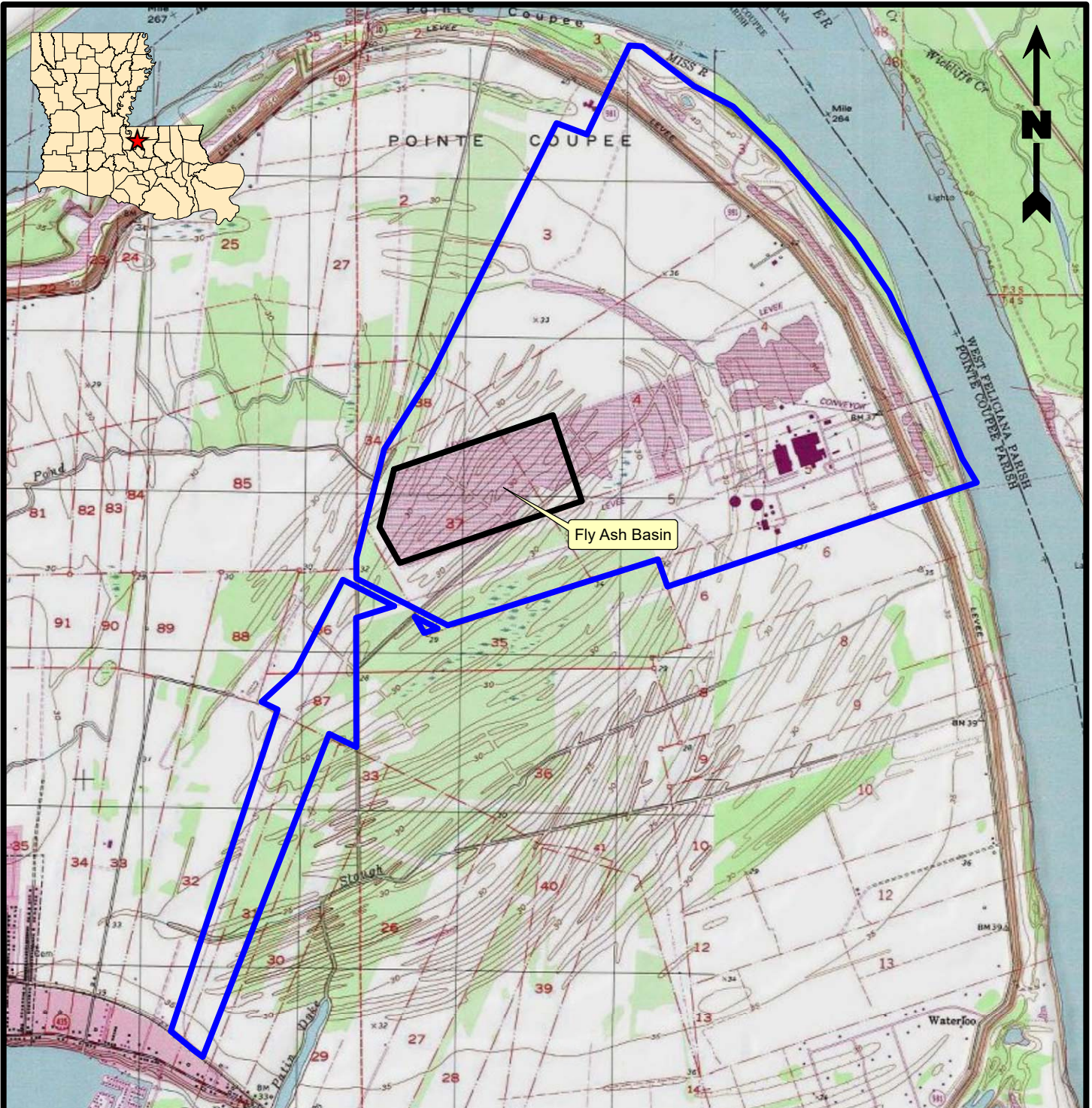
Louis J. Capozzoli and Associates, Inc.; 1974; Preliminary Subsoil Investigation and Foundation Design Data, Big Cajun 2, Site C-2, New Roads, Louisiana, File No. 74-30.

Louis J. Capozzoli and Associates, Inc.; 1977; Preliminary Subsurface Soil Investigation and Laboratory Testing, Ash Storage Area, CEPCO No. 2, Plant Site, New Roads, Louisiana.



Louis J. Capozzoli and Associates, Inc.; 2006; Geotechnical Investigation, Bottom Ash Storage Pond Expansion; Big Cajun No. 2, Pointe Coupee Parish Plant Site, Louisiana, LJC&A File 0558.

Providence Engineering and Environmental Group LLC; November 2019; Type I Industrial Surface Impoundments Permit Renewal Application P-0108R1 prepared for Louisiana Generating LLC, Big Cajun II Power Plant, New Roads, Pointe Coupee Parish, Louisiana.

**FIGURE 1**  
**SITE LOCATION MAP**



**Legend**

-  Property Boundary
-  Facility Boundary

**Reference**

Base map comprised of United States Geological Survey (USGS) 7.5-minute topographic maps, "St. Francisville, LA", "Elm Park, LA", "New Roads, LA", and "Port Hudson, LA".

**Site Location Map**

**5-Year Periodic Review  
Hazard Potential Classification Assessment - Fly Ash Basin**  
New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
Big Cajun II



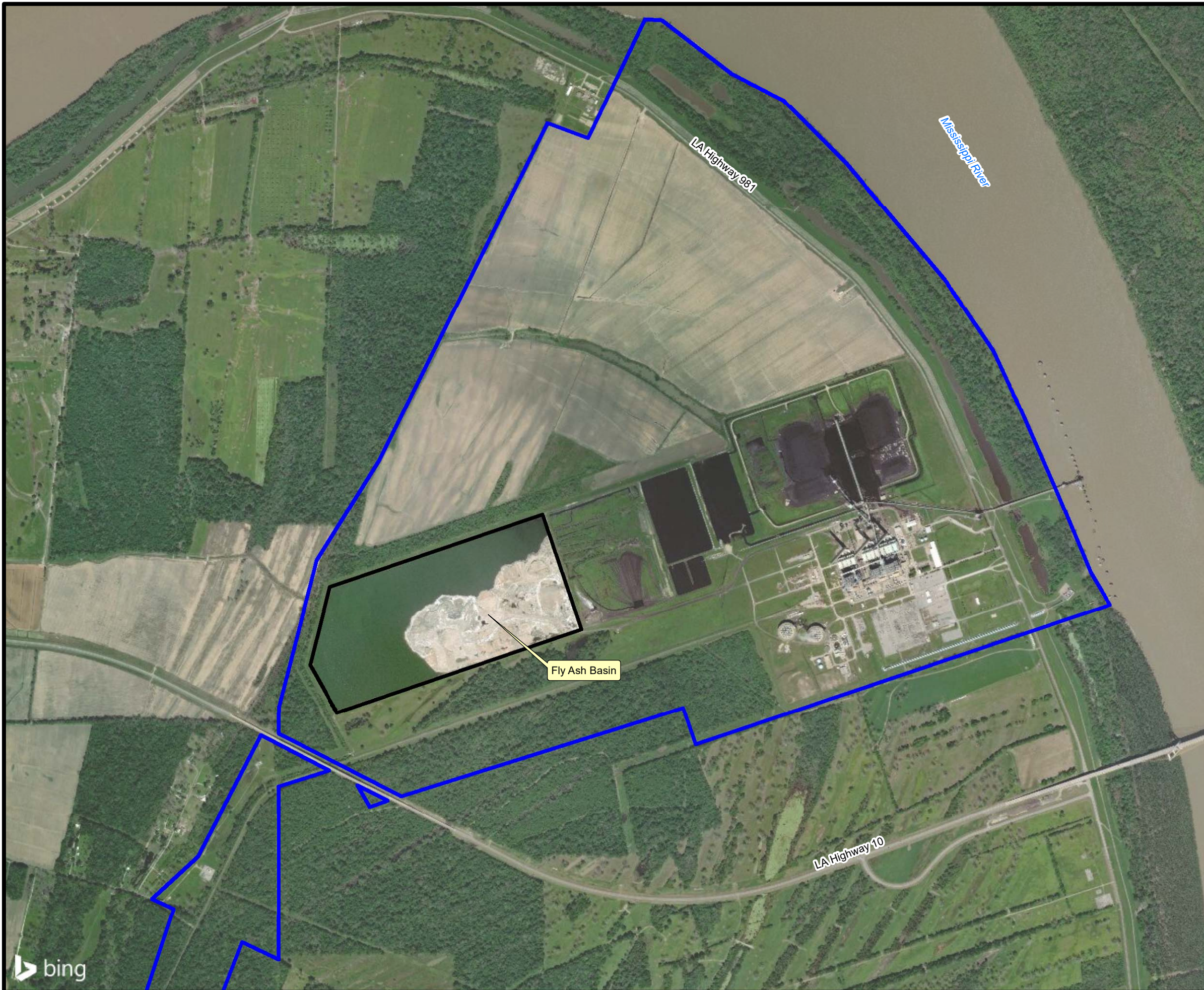
**PROVIDENCE**

Drawn By	LMH	10/08/21
Checked By	LMH	10/08/21
Approved By	CVH	10/08/21



Project Number	996-018	<b>1</b> Figure
Drawing Number	996-018-A002	



**FIGURE 2**  
**SITE MAP**

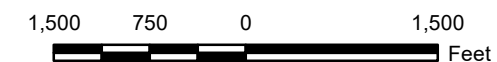


**Legend**

-  Property Boundary
-  Facility Boundary

**Reference**

Base map comprised of Bing Maps aerial imagery from (c) 2021 Microsoft Corporation and its data suppliers.



**Site Map**

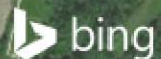
**5-Year Periodic Review  
Hazard Potential Classification Assessment - Fly Ash Basin**  
New Roads, Pointe Coupee Parish, Louisiana

**Cleco Cajun LLC**  
Big Cajun II

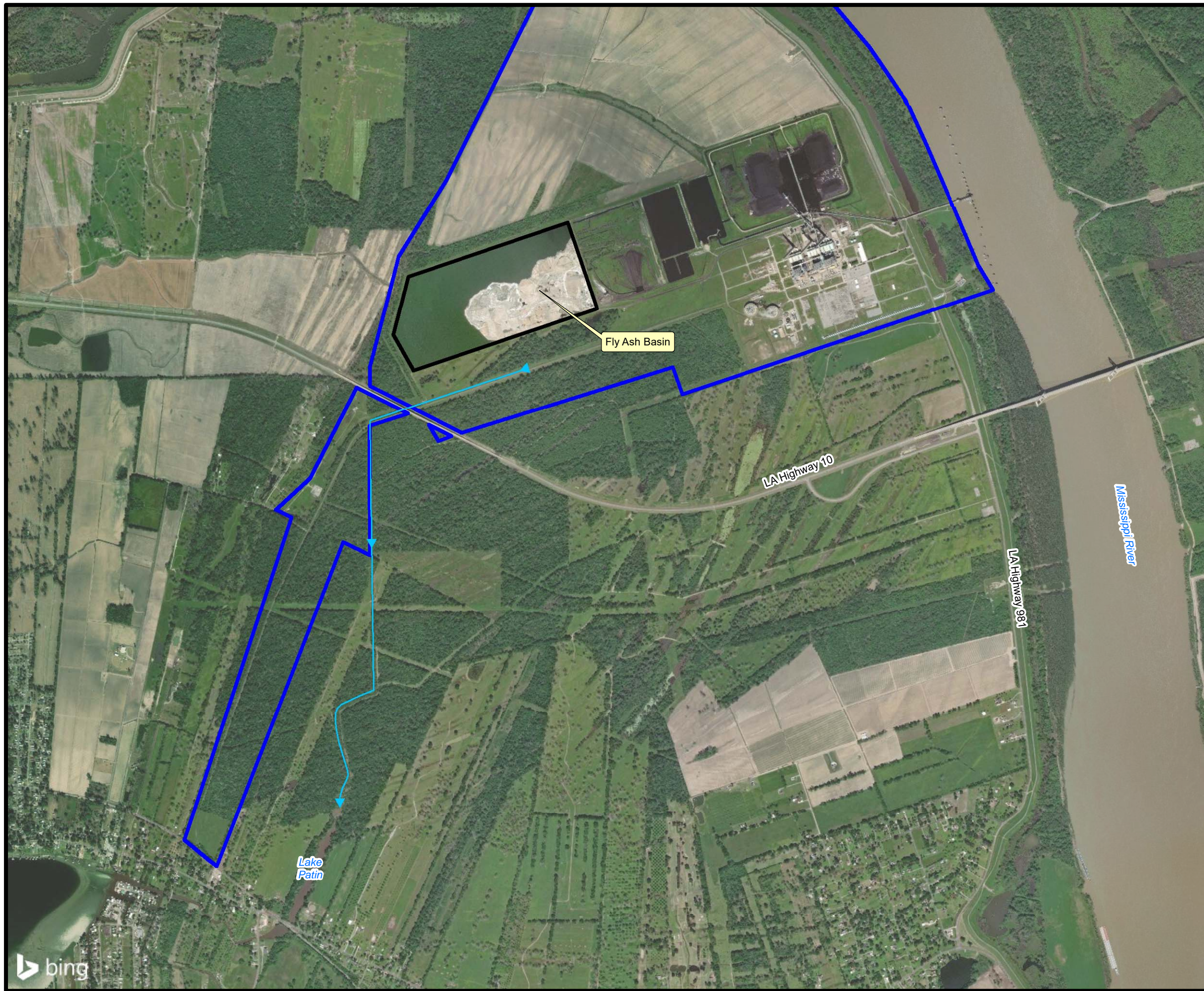


**PROVIDENCE**




Drawn By	LMH	10/08/21
Checked By	LMH	10/08/21
Approved By	CVH	10/08/21
Project Number	996-018	
Drawing Number	996-018-B010	
	<b>2</b>	Figure



**FIGURE 3**  
**LEVEE BREACH DRAINAGE MAP**

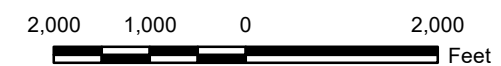


**Legend**

-  Property Boundary
-  Facility Boundary
-  Drainage Flow Route

**Reference**

Base map comprised of Bing Maps aerial imagery from (c) 2021 Microsoft Corporation and its data suppliers.



**Levee Breach Drainage Map**

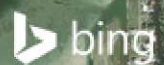
**5-Year Periodic Review  
Hazard Potential Classification Assessment - Fly Ash Basin  
New Roads, Pointe Coupee Parish, Louisiana**

**Cleco Cajun LLC**  
Big Cajun II



**PROVIDENCE**

Drawn By	LMH	10/08/21
Checked By	LMH	10/08/21
Approved By	CVH	10/08/21
Project Number	996-018	
Drawing Number	996-018-B018	
	<b>3</b>	Figure



**APPENDIX A**  
**P.E. CERTIFICATION**

**BIG CAJUN II POWER PLANT  
FLY ASH BASIN  
5-YEAR PERIODIC REVIEW – CCR HAZARD POTENTIAL CLASSIFICATION  
ASSESSMENT**

**PROFESSIONAL ENGINEER CERTIFICATION**

I hereby certify that I have performed the 5-year periodic review of the Hazard Potential Classification Assessment for Cleco Cajun LLC (Cleco) Big Cajun II Power Plant Fly Ash Basin in accordance with the CCR requirements at 40 CFR 257.73(a)(2). This 5-year periodic review of the Hazard Potential Classification Assessment has determined that the Fly Ash Basin continues to be classified as a low hazard potential surface impoundment.

**James C. Van Hoof**

Name

**24630**

Registration No.

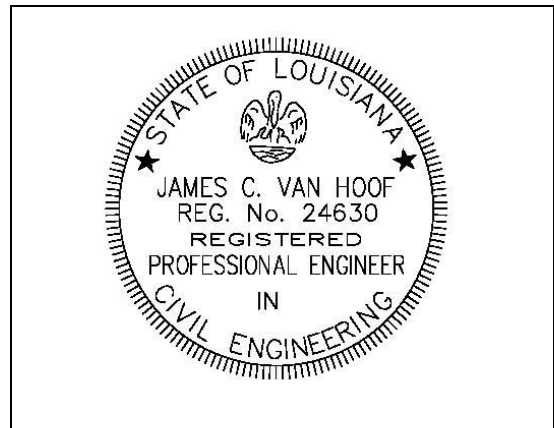
**LA**

State

Signature

October 15, 2021

Date



(Seal)