

2018 Recycle Pond A Inspection Report

Entergy Arkansas, LLC White Bluff Plant
Recycle Pond A (South)
Redfield, Arkansas

January 2019
Project No. 35187288A

Prepared for:

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Terracon

Environmental



Facilities



Geotechnical



Materials

PROFESSIONAL ENGINEER'S CERTIFICATION

This report on the annual engineering inspection of the Entergy Arkansas, LLC White Bluff Plant Recycle Pond A and supporting documentation was prepared under the direction and supervision of a qualified, State of Arkansas-registered Professional Engineer. Mr. David McCormick, PE, of Terracon Consultants, Inc. (Terracon), was responsible for the overall preparation of this report. The report has been prepared to fulfill the requirements of §257.83(b). Based on the inspection of the Recycle Pond and review of available documents the design, construction, operation, and maintenance of the pond is consistent with recognized and generally accepted good engineering standards.



David C. McCormick, P.E.
Arkansas Professional Engineer No. 9199

1-17-2019

Date



Expires 12.31.19

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1.0 INTRODUCTION

1.1 Purpose of Report

The purpose of this report is to document the annual inspection of the White Bluff Plant's Recycle Pond A (south pond) in accordance with 40 CFR §257, *Subpart D - Disposal of Coal Combustion Residuals From Electric Utilities* (the CCR Rule). In particular, the report has been prepared to comply with §257.83(b), which requires an inspection to be conducted by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the recycle pond is consistent with recognized and generally accepted good engineering standards.

The report includes:

- Changes in geometry of the pond,
- Location and type of existing instrumentation and the maximum recorded readings of each instrument,
- Approximate minimum, maximum and present depth and elevation of impounded water and CCR,
- Storage capacity of the recycle pond at the time of inspection,
- Approximate volume of impounded water and CCR at time of inspection,
- Any appearance of an actual or potential structural weakness of the pond; and
- Other changes which may affect stability or operation of the pond.

1.2 White Bluff Power Plant Recycle Pond Information

Entergy Arkansas, LLC (Entergy) operates the White Bluff Steam Electric Station, located on the west bank of the Arkansas River, near Redfield in Jefferson County, Arkansas (See **FIGURE 1**). This plant operates two Water Recycle Ponds: A and B, as part of its process water system for bottom ash transport system. During operations, the bottom ash from the boilers is removed from the hopper by a sluicing process and transported to four dewatering bins. After the water is drained from the bins, the ash is unloaded into trucks and taken to the on-site landfill for disposal or sold as a product for beneficial reuse. The water drained from the dewatering bins is routed to the recycle ponds for intermediate storage prior to being returned to the bottom ash transport system for reuse in the sluicing operations.

2.0 DESCRIPTION OF RECYCLE POND LAYOUT

The recycle pond system consists of 2 ponds, Recycle Pond A (south pond) and Recycle Pond B (north pond). Recycle Pond A is not incised and is unlined. This report will cover Recycle Pond A only. The recycle pond area is approximately 19 acres. Pond A is approximately 7.1 acres (768' x 403') with a bottom elevation of approximately 256.5 ft msl and has a capacity of 190,600 cubic yards. Pond A has a rim elevation at approximately 280.0 ft msl. The interior slopes constructed at 2.5:1. There are stormwater swales around the pond to control stormwater and limit the volume of run-on. The facility has ceased placement of CCR and non-CCR waste streams in the pond. Recycle Pond A has been mostly drained, and the facility has commenced closure as of October 5, 2018. Closure will be completed within 5 years of the commencement date in accordance with 40 CFR 257.102(c).

3.0 REVIEW OF AVAILABLE INFORMATION

A review of available information regarding the status and condition of Recycle Pond A including files available in the operating record, such as pond design and construction information, previous structural stability assessments, weekly inspection reports, and any previous annual inspections has been conducted. Based on review of this information, no signs of actual or potential structural weakness were noted. As previously noted, Recycle Pond A has been mostly drained and closure initiated.

4.0 ASSESSMENT OF RECYCLE POND

This section of the report provides a summary of the inspection of the White Bluff Plant's Pond A that was conducted on December 18, 2018. The assessment included an onsite inspection of the pond area, discussions with Boral CM Services (Boral) personnel and Entergy personnel, review of weekly inspections of the facility, and review of documents pertaining to the operation and compliance of the pond. Photographs of the site inspection are included in **APPENDIX B**.

4.1 Changes in Geometry

During the reporting period, no changes were made to the geometry of Pond A. At the time of inspection Pond A was mostly drained for maintenance and closure.

4.2 Instrumentation

Two (2) piezometers and ten (10) monitoring wells were installed around the Recycle Pond area during the reporting period. **TABLE 4.1** shows the max readings of each piezometer and monitoring well during the reporting period.

TABLE 4.1
2018 Recycle Pond Instrumentation Data

Name	Northing	Easting	Type	Maximum Reading	Date of Reading
PZ-1	1,949,513.90	1,272,146.80	Piezometer	274.85	7/17/2018
PZ-5	1,949,067.50	1,272,460.60	Piezometer	274.29	7/17/2018
RP-1	1,949,807.10	1,273,086.50	Monitoring Well	277.47	10/22/2018
RP-2	1,950,042.00	1,274,004.00	Monitoring Well	276.99	10/22/2018
RP-3	1,949,486.50	1,273,729.90	Monitoring Well	276.51	10/22/2018
RP-4	1,949,249.30	1,272,808.40	Monitoring Well	274.83	7/17/2018
RP-5	1,948,586.20	1,272,475.80	Monitoring Well	276.34	7/17/2018
RP-6	1,948,590.90	1,271,958.90	Monitoring Well	274.99	7/17/2018
RP-7	1,949,766.80	1,271,839.40	Monitoring Well	274.48	7/17/2018
RP-8	1,949,162.50	1,271,875.30	Monitoring Well	274.85	7/17/2018
RP-9	1,948,797.00	1,272,803.30	Monitoring Well	276.33	7/17/2018
RP-10	1,949,510.50	1,272,499.00	Monitoring Well	274.06	7/17/2018

4.3 Pond Characteristics

Shown below in **TABLE 4.2** is a summary of the minimum, maximum, and present depth and elevation of impounded water and CCR, storage capacity of the recycle pond at the time of inspection, and the approximate volume of impounded water and CCR at the time of inspection. During the inspection Pond A was mostly drained for maintenance and closure.

TABLE 2
Recycle Pond Characteristics

	Water	CCR
Minimum Depth (ft)	0	>0
Maximum Depth (ft)	<23.5	<23.5
Present Depth (ft)	Drained	<23.5
Storage Capacity (cy)	190,600	
Volume of Media (cy)	Drained	<190,600

4.4 Appearance of Structural Weakness

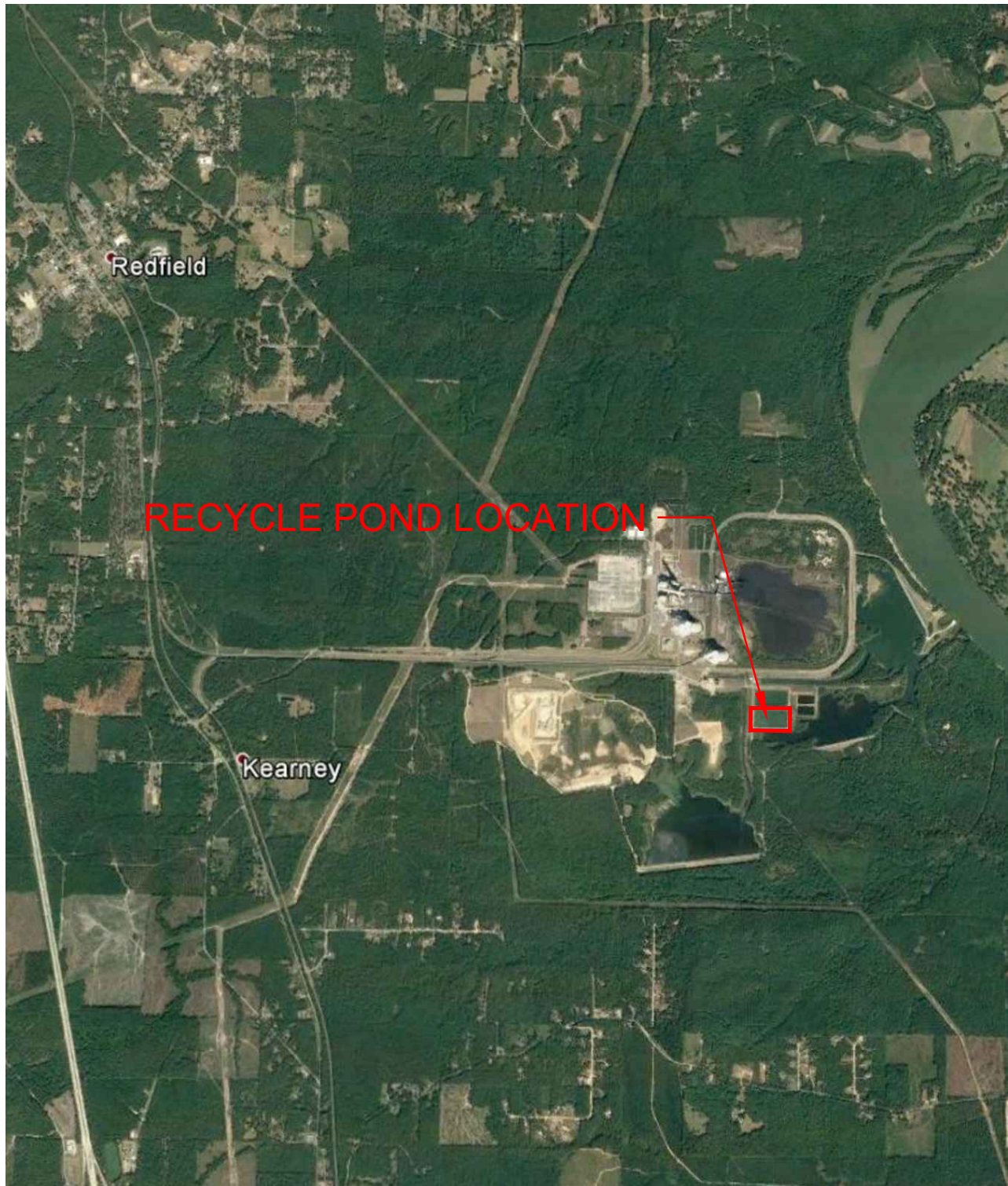
A visual inspection of Pond A was conducted to observe signs of actual or potential structural weakness or any conditions that are or may disrupt the operations. Pond A was drained, and no signs of potential structural weakness were noted. No signs of potential structural weakness were noted during the inspection. Also, the piezometers and monitoring wells appeared to be in good condition.

4.5 Other Changes That May Affect Stability or Operation

Based on discussions with Entergy personnel, Boral personnel, and field observations there were no changes made to Pond A in this reporting period that would affect the stability or operation.

APPENDIX A

Figures



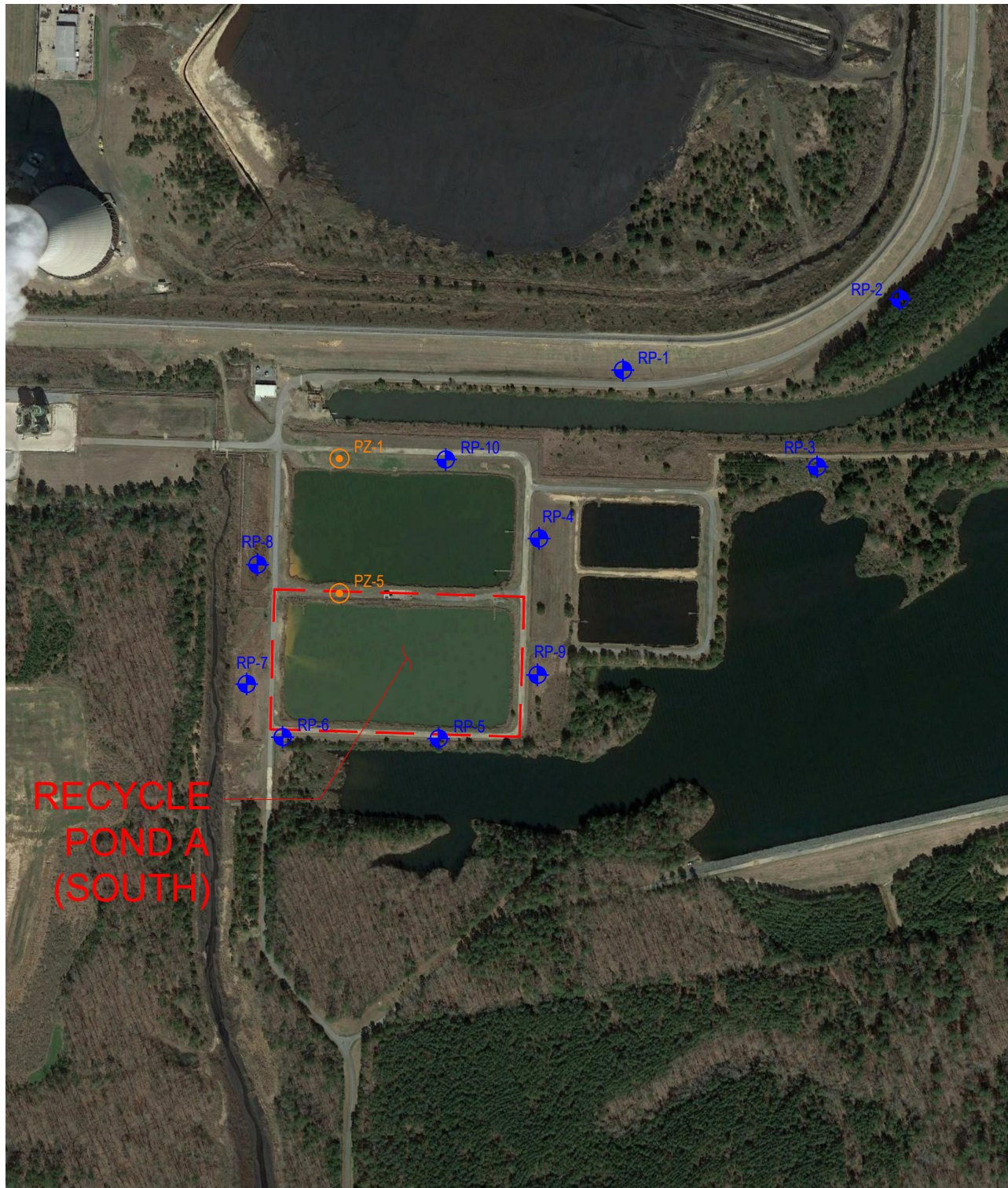
N:\GEC\ARCHIVE\CA\026000\13\1317288A-WB_POND001-SITE MAP.DWG

Project Mngr:	TLB
Drawn By:	KHJ/TLB
Checked By:	DCM
Approved By:	DCM
Project No.	026-001-35187288A
Scale:	N.T.S.
File No.	001
Date:	1/08/2018

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SITE MAP 2018 ANNUAL CCR INSPECTION REPORT ENTERGY WHITE BLUFF PLANT RECYCLE POND A	
REDFIELD	ARKANSAS

FIG. No.
1



LEGEND



PZ-1

PIEZOMETER



RP-1

MONITORING WELL

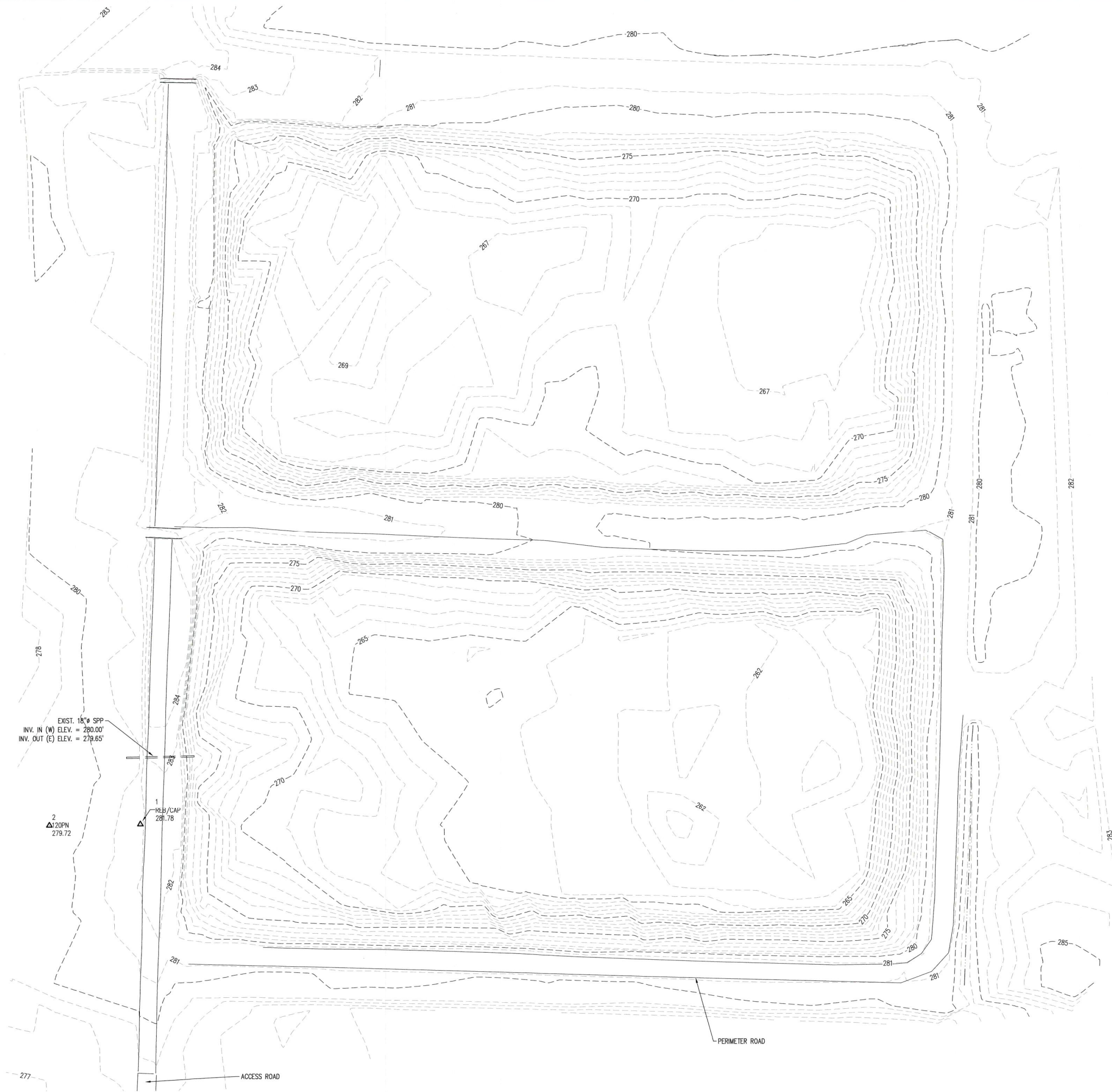
N:\GEC\ARCHIVE\CA\026000\13\137288A-WB_POND002-RECYCLE POND LOCATION MAP.DWG

Project Mngnr:	TLB
Drawn By:	KHJ/TLB
Checked By:	DCM
Approved By:	DCM
Project No.	026-001-35187288A
Scale:	1" = 500'
File No.	002
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RECYCLE POND A LAYOUT 2018 ANNUAL CCR INSPECTION REPORT ENTERGY WHITE BLUFF PLANT RECYCLE POND A	
REDFIELD	ARKANSAS

FIG. No.
2

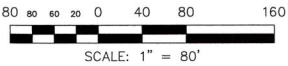


SEE SURVEYOR'S NOTE #3

CONTROL TABLE				
PT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1948747.3837	1271907.1419	281.78	REB/CAP
2	1948746.2872	1271812.1855	279.72	120PN

- GENERAL NOTES:
- THIS SURVEY REPRESENTS A TOPOGRAPHIC SURVEY OF THE WHITE BLUFF RECYCLE PONDS.
 - COORDINATES ARE NAD83(2011) ARKANSAS SOUTH ZONE (0302 US SURVEY FEET). VERTICAL DATUM IS NAVD88 BASED ON OPUS SOLUTION (ONLINE POSITIONAL USER SERVICE) AT POINT NO. 1.
 - FIELD SURVEY WAS PERFORMED ON JULY 5TH AND 6TH, 2018.
 - PORTIONS OF AN ELECTRONIC CAD FILE BY HARMON SURVEYING, INC. DATED 6/28/18 WAS INCORPORATED INTO THIS SURVEY.

LEGEND	
--- 235 ---	MAJOR CONTOUR INDEX
--- 236 ---	MINOR CONTOUR



REV. #	REV. DATE	BY	REVISIONS
--------	-----------	----	-----------

B&F
ENGINEERING, INC.
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TOPOGRAPHIC SURVEY
1100 WHITE BLUFF ROAD, REDFIELD, AR
WHITE BLUFF RECYCLE PONDS
JEFFERSON COUNTY
ARKANSAS

	BY	DATE
Design		
Drawn	RLS	7/18
Checked		
Survey	TAW	7/18
Flt. Bk. #	2177	
Rev. #		

B&F PROJ. 7-4183-0201
FILE NAME: 001-FINAL
ISSUE DATE: 10/01/18

SCALE: 1"=80'
1 1

FIGURE 3 - 2018 ANNUAL CCR INSPECTION - RECYCLE PONDS

APPENDIX B
Photos of Annual Engineering Inspection



1. Pond A, east side.



2. Pond A, west side



3. Pond A, south side.



4. Pond A, north side.