COAL COMBUSTION RESIDUALS

LANDFILL POST-CLOSURE PLAN

(40 CFR §257. 104)

Prepared for:

Entergy Louisiana LLC - Nelson Coal Ash Disposal Landfill

Westlake, Louisiana

October 17, 2016

Prepared by:

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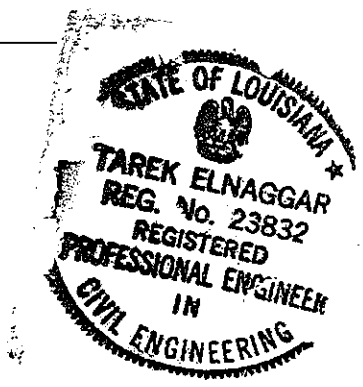
PROFESSIONAL ENGINEER'S CERTIFICATION

In accordance with §257.104, I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

This Post-Closure Plan for the Entergy Louisiana, LLC. Nelson Coal Ash Disposal Landfill was prepared under the direction and supervision of Mr. Tarek Elnaggar, a qualified State of Louisiana registered Professional Engineer of Pivotal Engineering LLC.

Signature



Date

10/13/16

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FIGURE 1: PROPOSED 70' (NAVD) CAP PLAN

1.0 POST-CLOSURE RESPONSIBILITIES

1.1 PROPERTY TRANSFER RESPONSIBILITIES

The permanent owner of the facility is Entergy Louisiana, LLC (ELL) and the property will not be transferred to any other parties during the post-closure period.

1.2 OPERATIONAL RESPONSIBILITIES

The post-closure activities will be performed by ELL and its designated operators. The name, address, and telephone number of the person to contact about the facility during the post-closure period will be placed in the facility's operating record and website upon notice of closure of the CCR Landfill. The contact information will be updated in the facility operating record and website any time the role is assigned to a new person.

2.0 INTRODUCTION

This document represents a post closure plan for the Nelson Coal Ash Disposal Landfill located in Calcasieu Parish, Westlake, Louisiana. The facility is a State of Louisiana, Department of Environmental Quality (LDEQ), Type I industrial landfill and receives only coal ash and other non-hazardous waste produced by the facility as specified in Permit P-0018-R1-M4. The Coal Ash Disposal Landfill was permitted to accommodate disposal of the non-marketable coal combustion residuals (CCR) generated by the Nelson Coal Generating Plant.

2.1 POST-CLOSURE

Following closure of the CCR unit, the owner or operator will conduct post-closure care for the facility. Maintaining the integrity and effectiveness of the final cover system, leachate collection and removal system, and groundwater monitoring system in accordance with 40 CFR 257.104(b) will be performed.

2.2 POST-CLOSURE SCHEDULE

Post-closure period will be commenced after the completion of closure phase. The following post-closure activities are tentatively scheduled:

ACTIVITY	TIME FRAME	Reference
Preparation of Post Closure Plan	October 17, 2016	40 CFR §257.104(d)
Post-closure phase	For 30 years after the closure is completed	40 CFR §257.104 (c)
Notification of the Completion of Post-Closure Care Period	No later than 60 days after the completion of the Post-Closure Care Period.	40 CFR §257.104 (e)

2.3 REGULATORY OVERSIGHT

This Post Closure Plan has been developed for the Coal Ash Disposal Landfill (CADL) located at Entergy Louisiana, LLC (ELL) Nelson Coal Generating Plant in Westlake, Louisiana. The Plan addresses the requirements of the Federal Solid Waste Rules and Regulations (40 CFR §257.104) for post closure of a CCR landfill.

3.0 BACKGROUND

3.1 SITE LOCATION

The facility is located in Westlake, Louisiana at 3500 Houston River Road (State Highway 379), approximately 4 miles northwest of the intersection of Highway 379 and Interstate 10. The geographical location of the center-point of the facility is located in Section 16, Township 9 South, Range 9 West, Calcasieu Parish, Westlake, Louisiana. The coal ash disposal landfill (CADL) occupies approximately 70 acres. The Post Closure Plan is based on the currently approved 31.77 acre cell area, see Figure 1. The Post Closure Plan will be updated prior to any expansion east of the area shown in Figure 1.

3.2 SITE HISTORY

Nelson Coal Unit 6 is an existing coal-fired steam electric generating facility that has been in operation since 1982. The coal-fired boiler feeds a steam turbine and generator that has a maximum generating capacity of 550 megawatts. The facility consists of a coal-fired boiler and turbine unit, storage areas, drainage areas, a treatment pond, a recirculating water system (cooling tower), and other ancillary buildings and equipment. Entergy operates the permitted CADL and a coal storage area in the west and northwest areas of the site.

The CADL is designed to accommodate the disposal of non-marketable coal residue generated during the operation of Nelson Unit 6. Unit 6 burns sub-bituminous coal.

There are no known cultural, historical, or archaeological sites, recreational areas, or habitat for endangered species located within 1,000 feet of the CADL. A typical cypress swamp, exhibiting wildlife and sensitive ecological areas is located on the northern boundary of the Nelson Station.

There is no prime farm, pasture, or range land located within the immediate area of the CADL and all the land of the Nelson Station is currently within an industrial district of West Calcasieu Parish, Louisiana.

The CADL does not impact any archaeological or historical sites, wetlands, or endangered species. Closure and Post Closure activities will remain confined to the currently permitted areas and not impact adjacent lands.

3.3 POST-CLOSURE LAND USE

The facility will be closed with a final cover system and monitored as a closed-landfill and no specific usage will be assigned to the property.

4.0 RESPONSIBLE PARTIES

4.1 CURRENT PROPERTY OWNERS

The facility is owned and operated by Entergy Louisiana, LLC as a Solid Waste Management Facility under Permit Number P-0018-R1-M4 issued by the Louisiana Department of Environmental Quality (LDEQ).

4.2 CHANGE OF OWNERSHIP NOTIFICATION REQUIREMENTS

The facility will not be transferred to any party and Entergy Louisiana LLC is expected to maintain ownership during the post closure period.

5.0 SITE MAINTENANCE AND MONITORING

5.1 SITE SECURITY

The plant security fence and system will be maintained and continue to include the entire landfill and will serve to limit access to the landfill during the post-closure care period.

5.2 MAINTENANCE OF PAVED AREAS

Paved areas, consisting of the main access roads to the plant, will be kept accessible for post-closure inspections and monitoring.

5.3 MAINTENANCE OF UNPAVED AREAS

The perimeter unpaved roads surrounding the landfill will be maintained during the Post Closure period. This will include filling and grading any eroded areas, preventing vegetative encumbrances, and minimizing access to only the vehicles and equipment needed for site monitoring and maintenance.

5.4 MAINTENANCE OF STORM DRAINAGE AND EROSION CONTROL

Storm drainage design has been performed for the facility and the closed disposal cells will be groomed and seeded to prevent erosion. After Closure, runoff from capped cells will be routed to natural drainages by non-contact ditches. The letdown structures and perimeter ditches will be inspected annually and after major rain events for damage and signs of erosion. Any damaged areas will be repaired and re-vegetated as required to prevent future erosion.

5.5 MAINTENANCE OF LANDSCAPING

All surface features associated with this facility will be formally dressed in such a manner as to present a neat and orderly appearance. The facility lies within the property limits and has limited visibility to the public and, therefore, landscaping is not required for this facility. However, the

vegetative cover will be mowed regularly to prevent larger plant growth from damaging the final cover system.

5.6 LEACHATE CONTROL

The leachate collection system for each cell will be maintained to prevent the accumulation of leachate to less than 30 cm over the liner system (40 CFR §257.70 (d)(1)). Leachate will be pumped from the underground collection system and handled in accordance with the plant's current Louisiana Pollutant Discharge Elimination System Permit No. LA0059030 and the 40 CFR 423 Effluent Limitation Guidelines in effect during post-closure. The leachate control system's material will be chemically resistant to the CCR and any non-CCR waste. The leachate system is design to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and equipment used at the CADL (40 CFR §257.70 (d)(2)). As the production of leachate ceases, the leachate collection system will be shut down on a cell by cell basis.

6.0 ENVIRONMENTAL MONITORING

6.1 SITE INSPECTIONS

Maintenance activities during the post-closure care period of thirty years will consist of annual inspections and inspections after major storm events of the landfill to observe any deterioration of the final cover system; and repair of the final cover system as required. Periodic mowing of the final cover system shallow-rooted grasses will facilitate inspections, help to discourage animal habitation of the area, and prevent deep root penetrations of the cover. Mowing activities will be carried out on an as-needed basis.

The annual inspections during the 30-year post-closure period and after major storm events will detect potential defects in the final cover system such as excessive erosion, erosion gulleys, cracking, slumping, settlement, loss of vegetation cover, animal burrows, and growth of oversized vegetation. Erosion gulleys, cracks, slumps, settlement depressions and animal burrows will be repaired by backfilling with compacted clay and/or topsoil followed by re-vegetation of the area affected. Oversized vegetation will be removed to preclude the puncturing of the liner system by any root system. Voids will be carefully backfilled to maintain the integrity of the liner. Since only inert materials are disposed, no gas control measures will be necessary during the post-closure care period. All records will be kept on file during the post closure period. The routine management and administrative records and documentation will be maintained in the operating record.

6.2 GROUNDWATER MONITORING AND SAMPLING PROGRAM

The groundwater monitoring plan has been established to monitor the quality of groundwater in the uppermost water-bearing zone underneath the landfill. The zone must be continuous across the landfill so that wells can be constructed immediately upgradient and downgradient of the landfill. Groundwater monitoring well sampling, laboratory sample analysis of groundwater samples, analysis of all groundwater field and laboratory data collected for each sample event and reporting will continue for the 30-year post-closure period maintaining the groundwater

monitoring system and monitoring the groundwater in accordance with the requirements of 40 CFR§257.90 through 40 CFR§257.98.

At the conclusion of the post-closure period, the existing groundwater monitoring wells will be abandoned in accordance with the procedures stated in "Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook," prepared by the LDEQ and the Louisiana Department of Transportation and Development. If the CADL is in assessment monitoring in accordance with 40 CFR §257.95, the facility will continue post-closure care until it returns to detection monitoring.

6.3 STORMWATER MONITORING PROGRAM

The published 24-hour, 25-year rainfall event map according to U.S. Weather Bureau Data indicates the facility could receive between 10 to 11 inches of rainfall during such an event. The 24-hour/25-year storm is 10.2 inches. This data is from the U. S. Weather Bureau Technical Paper Number 40.

The permitted 31.77 acres CADL cell area is not located within a 100-year flood area. The adjacent 100-year flood elevation is 14.0 feet NAVD-88. All dikes and levees for the facility are constructed above the flood plain elevation of 14.0 feet NAVD and, therefore, the facility will not be affected by a 100-year flood.

During the CADL operations, an internal system of ditches collects rainfall runoff and other water associated within the operation of the facility and conveys them to the Nelson Unit 6 Settling Pond for treatment and discharge. During the post-closure period, runoff from capped cells and all noncontact areas at the CADL site will drain via the non-contact ditches to natural drainages. During post-closure, the facility Storm Water Pollution Prevention Plan will continue to include the CADL area. Best Management Practices will continue to be employed to minimize sediment carryover from the CADL.

The drainage structures and ditches will be inspected annually and after major storm events for signs of erosion and damage. As needed, the ditches will be re-graded and reshaped to maintain flow. Any damages to culverts or other drainage features will be promptly repaired.

6.4 GEOTECHNICAL MONITORING (APPLICABLE IF REQUIRED FOR STABILITY)

A stability analysis was included in the Louisiana Solid Waste Permit Application. The analysis demonstrated that the design slopes, at the maximum permitted elevation, meet both the static and seismic stability requirements. Accordingly, geotechnical monitoring is not recommended. The CCR landfill will be inspected annually and after major storm events for signs of erosion, cracks, sloughs, slides and other indications of structural stress. Areas of compromised integrity will be repaired and reinforced as needed.

7.0 NOTIFICATION OF COMPLETION OF POST-CLOSURE CARE PERIOD

No later than 60 days after the completion of the Post-Closure Care period, ELL as the owner of the CCR unit will, in accordance with 40 CFR §257.104(e), prepare a notification which includes a certification by a qualified Professional Engineer that post-closure care has been completed in accordance with the post-closure plan.

8.0 AMENDMENT OF THE POST-CLOSURE PLAN

In accordance with §257.104(d)(3), Entergy may amend this post-closure plan at any time. Specifically, Entergy must amend the written post-closure plan whenever:

1. There is a change in the operation of the CCR unit that would substantially affect the written post-closure care plan in effect; or

2. After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.

The post-closure plan must be amended at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise the plan. If the plan is revised after post-closure activities have commenced for a CCR unit, the owner or operator must amend the written post-closure plan no later than 30 days following the triggering event. Entergy will obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure care plan meets the requirements of §257.104(d)(3).

Appendix A

DEFINITIONS

The following definitions are from §257.53 of the CCR Rule and used in this Plan:

Active Life (or In Operation): the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with §257.102.

Active portion: that part of the CCR unit that has received or is receiving CCR or non-CCR waste and that has not completed closure in accordance with §257.102.

Coal Combustion Residues (CCR): fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

CCR Landfill: an area of land or land excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. It also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

CCR Unit: any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units. This term includes both new and existing units.

Closed Unit or Landfill: placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with § 257.102 and has initiated post-closure care in accordance with § 257.104

Existing CCR Landfill: a CCR Landfill that receives CCR both before and after October 15, 2015, or for which construction commenced prior to October 14, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous onsite physical construction program had begun prior to October 14, 2015.

Hydraulic Conductivity: the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).

Lateral Expansion: a horizontal expansion of the waste boundaries of an existing CCR landfill or existing CCR surface impoundment made after October 14, 2015.

New CCR Landfill: a CCR landfill or lateral expansion of a CCR landfill that first receives CCR or commences construction after October 14, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous onsite physical construction program had begun after October 14, 2015.

Operator: the person(s) responsible for the overall operation of a CCR unit.

Qualified Professional Engineer: an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education,

technical knowledge and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.

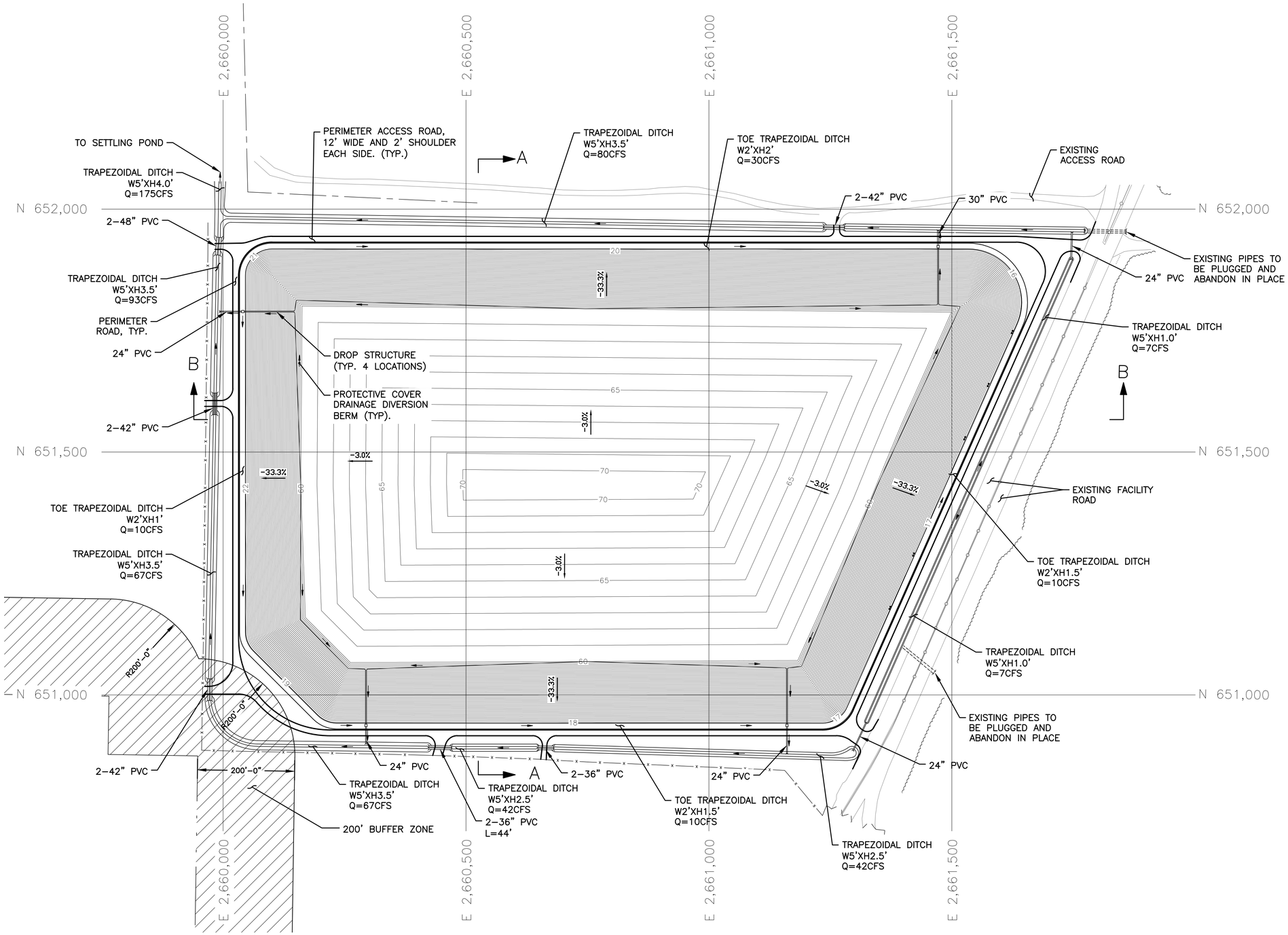
Recognized and Generally Accepted Good Engineering Practices: engineering maintenance or operation activities based on established codes, widely accepted standards, published technical reports, or a practice widely recommended throughout the industry. Such practices generally detail approved ways to perform specific engineering, inspection, or mechanical integrity activities.

Run-Off: any rainwater, leachate, or other liquid that drains over land from any part of a CCR landfill or lateral expansion of a CCR landfill.

Run-On: any rainwater, leachate, or other liquid that drains over land onto any part of a CCR landfill or lateral expansion of a CCR landfill.

Structural Components: liners, leachate collection and removal systems, final covers, run-on and run-off systems, inflow design flood control systems, and any other component used in the construction and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents of the unit are not released into the environment.

Figure 1



100' 0 100' 200'

24" X 36" SCALE: 1" = 100'

N

SURVEY DONE BY MORRISON SURVEYING, INC ON MAY AND OCTOBER 2015.

NOTE:

1) HORIZONTAL CONTROL IS REFERENCED TO NAD 83 LA SOUTH ZONE AS PER O.P.U.S. SOLUTION AT MSI NETWORK BASE STATION.

2) VERTICAL CONTROL IS REFERENCED TO NAVD 88 GEOID 12A AS PER O.P.U.S. SOLUTION AT MSI NETWORK BASE STATION.

3) ONLY THOSE UTILITIES EVIDENT FROM A CAREFUL VISUAL INSPECTION OF THE SITE ARE SHOWN AND MAY NOT REPRESENT ALL UTILITIES PRESENT.

4) STANDARD FIELD CALIBRATIONS FOR EQUIPMENT WERE PERFORMED. THIS SURVEY AND ACCURACY RESULTS ARE WITHIN MANUFACTURER'S SPECIFICATIONS.

5) THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF THE SURVEY MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

6) STATE PLANE COORDINATES ARE REFERENCED TO NORTH & SOUTH PLANT MONUMENTS.

NORTH MONUMENT		
STATE PLANE COORDINATE	*PLANT COORDINATE*	
N 654941.39	*N 12799.99*	
E 2664674.94	*E 11995.00*	
SOUTH MONUMENT		
STATE PLANE COORDINATE	*PLANT COORDINATE*	*ELEV.*
N 654141.56	*N 11999.99*	*17.42'*
E 2664681.28	*E 11995.00*	

NAVD 88 GEOID 12A ELEV. = 15.74'

7) THIS SURVEY IS A COMPILATION OF DATA COLLECTED IN MAY 2015 & OCTOBER 2015.

8) BOUNDARY LINE AND EASEMENT DATA WAS TAKEN FROM REFERENCE MAPS PROVIDED.

COAL ASH DISPOSAL LANDFILL PROPOSED 70' (NAVD) CAP PLAN

NELSON COAL GENERATING STATION

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DATE	DESCRIPTION	BY
	REVISIONS	

SCALE: AS NOTED	DRAWN BY: Y.S.	1
DATE: AUGUST 29, 2016	CHECKED BY: T.E.	FIG. NO.
JOB NO. 15-125		