

CLOSURE PLAN FOR ASH POND E

PLANT BRANCH
PUTNAM COUNTY, GEORGIA

FOR



Georgia
Power

November 2018



11/14/2018

Geosyntec[®]
consultants

engineers | scientists | innovators

Geosyntec Consultants
1255 Roberts Boulevard, NW, Suite 200, Kennesaw, GA 30144
(678) 202-9500

TABLE OF CONTENTS

1.	GENERAL	1
2.	NOTIFICATION	1
3.	BOUNDARY SURVEY AND LEGAL DESCRIPTION	2
4.	CLOSURE PROCEDURES.....	2
4.1	Overview.....	2
4.2	Phasing Plan.....	2
4.2.1	Phasing Overview	2
4.2.2	Phase I	3
4.2.3	Phase II	3
4.2.4	Phase III	4
4.3	Fugitive Dust Control Plan	4
4.4	Organic Materials Management.....	5
4.5	Pond Dewatering Process.....	7
4.6	Stormwater and Contact Water Management	7
4.6.1	Water Management Overview.....	7
4.6.2	Stormwater Management Features.....	8
4.7	NPDES Industrial Wastewater Discharge Individual Permit	9
4.8	Wastewater Management	9
4.9	CCR Excavation and Removal Criteria	9
4.10	Geotechnical Instrumentation	10
4.11	Site Restoration and Borrow Area Management	10
4.12	Groundwater Monitoring	10
4.13	Demolition of Ash Pond Infrastructure	11
4.14	Coordination with GA EPD Safe Dams Program	12
4.14.1	Ash Pond E Emergency Spillway Modifications.....	12
4.14.2	Interim Finger Dikes	13
4.14.3	Category I Dam	13
4.15	Drawings.....	13
5.	CERTIFICATION OF CLOSURE	14
6.	ESTIMATE OF CCR VOLUME TO BE REMOVED.....	14

TABLE OF CONTENTS (Continued)

7. VEGETATION PLAN..... 14

8. EROSION AND SEDIMENT CONTROL (E&SC)..... 14

9. COST OF CLOSURE..... 15

10. CLOSURE SCHEDULE 15

11. REFERENCES..... 16

TABLE OF CONTENTS (Continued)

LIST OF TABLES

Table 4.1	Proposed Disposition of Existing Ash Pond Infrastructure
Table 10.1	Anticipated Closure Schedule for Ash Pond E

LIST OF FIGURES

Figure 1.1	Site Layout – Topographic Map
Figure 1.2	Site Layout – Aerial Map

LIST OF ACRONYMS

ACD	Air Curtain Destructor
BMP	Best Management Practice
CFR	Code of Federal Regulations
CCR	Coal Combustion Residuals
CQA	Construction Quality Assurance
E&SC	Erosion and Sediment Controls
FT	Feet
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
GSWCC	Georgia Soil and Water Conservation Commission
H:V	Horizontal : Vertical
HDPE	High Density Polyethylene
MSL	Mean Sea Level
NPDES	National Pollutant Discharge Elimination System
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
SDP	Safe Dams Program
USEPA	United States Environmental Protection Agency
WWTS	Wastewater Treatment System

1. GENERAL

Georgia Power Company's (GPC's) Plant Branch (Site) formerly operated as a coal-fired power plant that commenced power generation in 1965. The plant, located in Putnam County, Georgia, is currently in the process of being decommissioned. Over the course of power generation at the Site, five Coal Combustion Residuals (CCR) Surface Impoundments (Ash Ponds), identified as Ash Ponds A, B, C, D, and E, were utilized (Figures 1.1 and 1.2).

Ash Pond A, the first ash pond constructed at the Site, was taken out of service in the late 1960's and was closed in April 2016 by the removal and relocation of its stored CCR to Ash Pond E. Therefore, Ash Pond A is not subject to the Georgia Environmental Protection Division's (GA EPD) Solid Waste Rule 391-3-4-.10 for Management of Coal Combustion Residuals (i.e., State CCR Rule) as the closure was completed prior to the effective date of the rule (November 22, 2016). On January 26, 2018, GPC submitted a report to the GA EPD titled *"Ash Pond A – Certification of Ash Removal, Harllee Branch Power Plant, Milledgeville, Georgia"* to provide documentation regarding the removal of CCR from Ash Pond A.

Plant Branch ceased producing electricity prior to April 2015 (the effective date of the Federal CCR Rule administered by the United States Environmental Protection Agency (USEPA) (USEPA 40 CFR §257) was October 19, 2015). Therefore, Ash Pond E is not subject to the Federal CCR Rule. Ash Pond E meets the definition of "NPDES – CCR Surface Impoundment" subject to State CCR Rule 391-3-4-.10(9)(c)7. Ash Pond E did not receive CCR on or after October 19, 2015, still contains CCR and liquids, and is located at an electric utility that has ceased producing electricity prior to October 19, 2015.

Ash Pond E will be closed by removal. This closure strategy will eliminate the need for future maintenance and long-term post-closure care. GPC will accomplish this by closing the ash pond by removing CCR to a new, fully lined, on-site CCR landfill and/or selling for beneficial reuse by others. Drawings depicting existing conditions, CCR removal, and final conditions illustrate the closure activities.

2. NOTIFICATION

GPC will submit a Notice of Intent to close Ash Pond E to the GA EPD Director no later than the date it initiates closure of the ash pond.. Closure activities will commence according to the closure schedule presented in Section 10 of this Closure Plan. Depending on the actual CCR excavation rate achieved during closure activities, complete CCR removal and final restoration of the ash pond, in accordance with this Closure Plan, will be accomplished within approximately ten (10) to fifteen (15) years following the beginning of closure activities.

3. BOUNDARY SURVEY AND LEGAL DESCRIPTION

In accordance with State CCR Rule 391-3-4-.10(9)(b)(3), a sealed boundary survey of the Site property and the legal description of the CCR permit boundary are included on Sheets 3 and 4 in Exhibit 8. The total area bounded by the CCR permit boundary is approximately 542.6 acres.

4. CLOSURE PROCEDURES

4.1 OVERVIEW

The purpose of this section of the Closure Plan is to describe the steps and procedures required to close the Plant Branch ash ponds in a manner consistent with recognized and generally accepted engineering practices. Though wetland and stream delineations are not required for closure-by-removal, GPC has located these features by surveying the area for natural resources. No wetlands and streams have been identified within the waste boundary of Ash Pond E.

The major steps to close Ash Pond E include: clearing and grubbing, dewatering, construction-phase stormwater and contact water management, excavating and transporting the CCR to a permitted disposal location (i.e., the new onsite CCR landfill) or selling it to an ash marketer for beneficial reuse, treating CCR contact water via the on-site wastewater treatment system (WWTS) to meet discharge requirements, partially or completely removing the Category I Dam and the interim finger dikes, and backfilling areas within the former Ash Pond E footprint as well as temporary stormwater diversions with earthen fill to blend in with surrounding grades.

4.2 PHASING PLAN

4.2.1 PHASING OVERVIEW

CCR removal for Ash Pond E will generally occur in a phased manner. A conceptual phasing approach with three phases has been developed. The sequence of the conceptual phases and phase activities is summarized below. Phasing activities may be adjusted based on approval of the Engineer, with the requirement that regulatory criteria related to stormwater and contact water management are met. The phasing approach is presented on Sheets 10 through 12, Phasing Plans I through III, of the permit drawings.

4.2.2 PHASE I

Phase I consists of preparation activities required to take place prior to initiation of CCR removal within Ash Pond E (including the finger areas). These activities include: (i) a stormwater diversion to the north of Ash Pond E and the east of Finger 1 will be constructed to reduce run-on into Ash Pond E; (ii) the Ash Pond E emergency spillway grading will be modified to lower and widen the spillway; and (iii) contact water will be gravity drained or pumped to generally maintain a target water surface elevation of 421 feet mean sea level (ft msl) or below.

4.2.3 PHASE II

Phase II consists of the dewatering and removal of CCR from Fingers 1, 2, and 3, and construction of interim finger dikes which will reduce stormwater run-on into Ash Pond E and facilitate CCR removal within the main Ash Pond E footprint.

Phase II will be executed in stages, with the option to install temporary berms or channels around the fingers to divert run-on around the working areas of the fingers to either downstream of the working areas within the fingers or directly into Ash Pond E. Temporary berms will also be constructed as needed within the working areas of the fingers to isolate dewatering and removal operations.

Interim finger dikes will be constructed at the appropriate stage within Phase II with an adequate offset from the excavated CCR in Ash Pond E. The Finger 1, Finger 2, and Finger 3 dikes will be 41.5, 38, and 28 feet in height, respectively, and will be classified as Category II Dams and subclassified as large dams (at Fingers 1 and 2) or medium dam (at Finger 3) under the GA EPD SDP. The interim finger dikes will include overflow weirs (i.e., emergency spillways) to concentrate potential flow that discharges from the fingers into Ash Pond E. To comply with the regulatory criteria, as well as prevent backflow of contact water from Ash Pond E into the fingers, the water surface elevation of Ash Pond E will be generally maintained at a target water surface elevation of 418 ft msl or below via gravity draining or pumping.

Upon construction of the finger dikes and removal of the upgradient CCR and six inches of underlying foundation soil, the Fingers 1, 2, and 3 detention/storage areas will be considered stormwater management features. Concrete riser outlet structures and outlet pipes will be installed within the fingers to detain stormwater and increase detention/storage capacity within them. Stormwater diversions will be constructed between Fingers 1 and 2 and Fingers 2 and 3 to convey flow from the outlet pipes. Once the fingers are considered stormwater features, they will discharge through stormwater

diversions to Beaverdam Creek, and ultimately to Lake Sinclair. They will no longer be part of the water management system that impounds water behind the Category I Dam or operate as part of the NPDES-CCR Surface Impoundment. Also, pumps will be installed in Fingers 1 through 3 to remove the collected stormwater to downstream stormwater management features to the extent practicable.

4.2.4 PHASE III

Phase III consists of the dewatering and removal of CCR from the remainder of Ash Pond E. This phase will be executed in stages, with temporary berms, channels, and sediment/stormwater basins installed within Ash Pond E, as needed, to isolate CCR dewatering and removal areas, divert contact water runoff to downgradient locations within Ash Pond E, and manage runoff in areas where CCR removal is completed as stormwater. CCR removal will generally progress from higher to lower elevation areas, to limit the volume of water to be managed during removal activities. Phase III will be finished upon complete removal of CCR material and 6-inches of foundation soil from Ash Pond E. Following the end of Phase III, but prior to the beginning of restoration grading, described in Section 4.11 of this plan, runoff generated and collected within Ash Pond E will be managed as discharges covered under the applicable NPDES construction stormwater discharge general permit, NPDES industrial stormwater discharge general permit, and/or the facility's NPDES industrial wastewater discharge individual permit.

Georgia Power will amend the Closure Plan whenever there is a change that would substantially affect the Closure Plan or unanticipated events necessitate a revision of the closure plan. The Closure Plan will be amended no later than 30 days following a triggering event.

4.3 FUGITIVE DUST CONTROL PLAN

This fugitive dust control plan identifies and describes the CCR fugitive dust control measures that GPC will use to minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from ash ponds, roads, and material handling activities. GA EPD State CCR Rule 391-3-4-.10(2)(a) (incorporating 40 CFR § 257.53 by reference) defines "fugitive dust" as "solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than through a stack, or chimney."

Fugitive dust originating from the ash ponds and ash pond closure activities will be controlled using water suppression or polymer tackifiers.

The fugitive dust control measures identified and described in this plan were adopted and implemented based upon an evaluation of site-specific conditions and are determined to be applicable and appropriate for the Plant Branch ash pond closures. Evaluation included assessing the effectiveness of the fugitive dust control measures for the facility, taking into consideration various factors such as site conditions, weather conditions, and operating conditions.

CCR that is transported via truck and/or rail cars to on-site and off-site locations will be conditioned to an appropriate moisture content to reduce the potential for fugitive dust.

Water suppression or polymer tackifiers will be used as needed to control fugitive dust on facility roads used to transport CCR and other CCR management areas. Speed limits will be utilized to reduce the potential for fugitive dust. Trucks used to transport CCR will be filled to or under capacity to reduce the potential for material spillage.

GPC and construction personnel will assess the effectiveness of the control measures by performing visual observations of the ash ponds and surrounding areas and implementing appropriate corrective actions for fugitive dust, as necessary. Logs will be used to record the utilization of water-spray equipment.

Any complaint received from a citizen regarding a CCR fugitive dust event at the facility will be documented and investigated. Appropriate steps will be taken, including any corrective action, if needed.

4.4 ORGANIC MATERIALS MANAGEMENT

Ash Pond E contains a variety of vegetation from trees and underbrush to non-woody plants. Woody vegetation will be cut above the ground surface and removed prior to removing CCR. Vegetation and wood waste will be managed in the following manner:

1. Trees and logs may be harvested, windrowed, or stockpiled for mulching prior to off-site disposal, chipped for use on-site as a best management practice (BMP) measure, burned through approved methods, or disposed of at a permitted landfill.
2. Large bushes may be windrowed, or stockpiled for mulching prior to disposal, burned through approved methods, or disposed of at a permitted landfill.

3. Stumps and tree roots may be windrowed, or stockpiled for mulching prior to disposal, chipped for use on-site as a BMP measure, burned through approved methods, or disposed of at a permitted landfill.
4. Grass and brush may be windrowed, or stockpiled for mulching prior to disposal, or disposed of at a permitted landfill.

Remaining wood waste from grubbing work within the CCR footprint will be managed and kept separate from surface-cut wood waste. Woodwaste that contains CCR will be managed within the ash pond limits in the following manner:

1. Stumps and tree roots may be mechanically screened to remove CCR, windrowed or stockpiled for mulching prior to disposal, burned through approved methods, or disposed of at a permitted landfill.
2. Grass and bushes may be mechanically screened to remove CCR, and windrowed or stockpiled for mulching prior to disposal at a permitted landfill.

The following procedures will be followed for on-site burning:

1. Use an air curtain destructor (ACD) for all burning. Obtain an ACD Permit by submitting an online permit application at <http://www.gatrees.org/online-permits/AddACDPermit.cfm?County=Putnam>. Burn Type 13 “Land Clearing – Burning with Air Curtain Destructor” is allowed for Putnam County as long as the following conditions are met:
 - (i) Authorization for such open burning is received from the fire department having local jurisdiction over the open burning location prior to initiation of any open burning at such location (if required);
 - (ii) The location of the ACD is at least 300 feet from any occupied structure or public road. An ACD used solely for utility line clearing or road clearing may be located at a lesser distance upon approval by the GA EPD;
 - (iii) No more than one ACD is operated within a ten (10)-acre area at one time or there must be at least 1,000 feet between any two ACDs;
 - (iv) Only wood waste consisting of trees, logs, large brush, and stumps which are relatively free of soil are burned in the ACD;
 - (v) Tires or other rubber products, plastics, heavy oils, or asphaltic based or impregnated materials are not used to start or maintain the operation of the ACD;

- (vi) The ACD is constructed, installed, and operated in a manner consistent with good air pollution control practices for minimizing emissions of fly ash and smoke;
 - (vii) The cleaning out of the ACD pit is performed in a manner to prevent fugitive dust; and
 - (viii) The ACD cannot be fired before 10:00 a.m. and the fire must be completely extinguished, using water or by covering with dirt, at least one hour before sunset.
2. Follow GA EPD's guidance document "Open Burning Air Curtain Destructor Operation Guide".
 3. Obtain a burn permit from the Georgia Forestry Commission.
 4. Putnam County is subject to the GA EPD Summer Burn Ban (May 1st – September 30th). Therefore, ACD burning operations at Plant Branch will cease from May 1st through September 30th unless otherwise approved by the Georgia Forestry Commission or local fire department, whoever has local jurisdiction over the ACD operation.

4.5 POND DEWATERING PROCESS

Dewatering will include removing water using a variety of methods, including but not limited to passive, gravity-based methods (e.g. rim ditches) and/or active dewatering methods (e.g. pumps and well points) as needed to allow for CCR excavation and transportation. CCR contact water and legacy wastewater from the ash ponds will be further treated by an on-site WWTS. Water will be managed and discharged in accordance with the Site's approved National Pollutant Discharge Elimination System (NPDES) Industrial Wastewater Discharge Individual Permit GA0026051 and the approved Ash Pond Dewatering Plan [GPC, 2017]. The Ash Pond Dewatering Plan was approved by GA EPD Watershed Protection Branch in June 2017 and describes treatment processes, monitoring and best management practices necessary to comply with the NPDES Industrial Wastewater Discharge Individual Permit requirements.

4.6 STORMWATER AND CONTACT WATER MANAGEMENT

4.6.1 WATER MANAGEMENT OVERVIEW

During CCR removal, run-on stormwater, and run-off contact water (e.g., stormwater that has come into contact with CCR) will be controlled with best management practices such as channels, diversion berms, and pumps and

managed in accordance with the NPDES Construction Storm Water and Industrial Wastewater Discharge Individual permits. GPC will prepare a phased Erosion, Sedimentation and Pollution Control Plan that will be followed for closure construction activities, as needed.

During CCR removal activities, stormwater run-on into the ash pond will be minimized to the extent practicable through the use of finger dikes, temporary berms and diversion ditches. The Phasing Plan, presented in Section 4.2 of this plan and in Sheets 10 through 12 of the permit drawings, describes stormwater diversions and finger detention areas to be constructed to manage stormwater run-on and runoff during CCR removal and site restoration activities. Water management during CCR removal at Ash Pond E will be conducted such that regulatory criteria related to stormwater and contact water management (i.e., design storms and appropriate freeboard) contained in the State CCR Rule and the Georgia Rules for Dam Safety are satisfied.

4.6.2 STORMWATER MANAGEMENT FEATURES

As described in the Phasing Plan in Section 4.2 of this plan and depicted in Sheets 10 through 12 of the permit drawings, stormwater during CCR removal at Ash Pond E is managed through the use of temporary and permanent diversions (i.e., channels) constructed around Ash Pond E and between Fingers 1, 2, and 3, and through the creation of detention areas within the fingers, upon the removal of CCR from these areas.

The diversions connect Finger 3 to Finger 2, Finger 2 to Finger 1, and convey the discharge from Finger 1 to Beaverdam Creek and ultimately towards Lake Sinclair. The diversions are designed as trapezoidal in shape with 3 horizontal to 1 vertical (3H:1V) side slopes, and grass or riprap lining.

The finger detention areas provide stormwater storage to minimize runoff contributing to Ash Pond E during CCR removal activities that would require dewatering. The finger detention areas are created by the construction of the interim finger dikes after the removal of CCR and 6-inches of foundation soils. Stormwater within the finger detention areas is discharged through (i) concrete riser structures with outlet pipes to the downstream diversions; (ii) pumps installed in the finger detention areas; (iii) emergency spillways located in the finger detention area crests to the downstream diversions; and (iv) emergency spillways located in the interim finger dikes into Ash Pond E.

4.7 NPDES INDUSTRIAL WASTEWATER DISCHARGE INDIVIDUAL PERMIT

Plant Branch currently discharges stormwater and/or wastewater under NPDES Industrial Wastewater Discharge Individual Permit GA0026051 with an effective date of November 1, 2017. This permit governs discharges into Lake Sinclair from outfalls 03, 04, 05, and 06. GPC submitted an Ash Pond Dewatering Plan [GPC, 2017] to GA EPD Watershed Protection Branch which was approved in June 2017. The permit establishes effluent limitations and monitoring requirements, which GPC will follow for discharges from the WWTS.

4.8 WASTEWATER MANAGEMENT

During ash pond closure, CCR contact water and legacy wastewater from the ash pond will be treated by an on-site WWTS. The wastewater will be treated to meet the NPDES permit effluent discharge requirements. Treatment methods may include physical-chemical processes such as flocculation, clarification, and filtration. The WWTS is located immediately to the east of Ash Pond B. The WWTS will not be decommissioned until verification of CCR removal is completed and wastewater treatment is no longer needed at the Site.

4.9 CCR EXCAVATION AND REMOVAL CRITERIA

The CCR will be excavated considering many site-specific factors including access into and out of the ash pond, haul routes, dewatering methods, detailed CCR excavation and final restoration phasing plans, the excavation working face size, and excavation and hauling methods. In addition, GPC will establish methods for observing, monitoring, and documenting CCR excavation and compliance with the approved Closure Plan.

“CCR removal” refers to the process of verifying and documenting that the CCR has been removed from the ash pond. The ash pond is known to contain a mixture of fly ash and bottom ash collectively referred to as CCR. The CCR removal verification is based on removing visible CCR and a minimum of six additional inches of soil.

The documentation of this procedure is presented in Section 2 of the companion Construction Quality Assurance (CQA) Plan.

4.10 GEOTECHNICAL INSTRUMENTATION

Geotechnical instrumentation may be utilized to obtain subsurface information to monitor ground conditions during CCR removal. Instrumentation may include settlement plates, slope inclinometers, vibrating wire piezometers, standpipes, and other instruments.

4.11 SITE RESTORATION AND BORROW AREA MANAGEMENT

The post-CCR-removal final restoration grading plan for Ash Pond E will reuse soil from the breach and partial removal of the Category I Dam, Finger 1 interim dike, and Finger 2 interim dike, and full removal of the Finger 3 interim dike to achieve final grades within the ash pond footprint. The breach dimensions for the Category I Dam and interim finger dikes are such that the breach widths are greater than the maximum heights of the dams and the breach cut slopes are not steeper than 4H:1V. The diversions located north of Ash Pond E and east of Finger 1 will remain in place during Site restoration, to convey run-on away from the former Ash Pond E footprint. Stormwater will discharge to Beaverpond Creek, and ultimately to Lake Sinclair.

Engineering analyses indicate that the soil from the the breach and partial removal of the Category I Dam, Finger 1 interim dike, and Finger 2 interim dike, and full removal of the Finger 3 interim dike should be sufficient to achieve the final restoration grades. However, if additional borrow soil is needed, onsite and/or offsite borrow areas may be developed. Best management practices will be followed for grading, drainage, and erosion control in the borrow area(s).

4.12 GROUNDWATER MONITORING

Pursuant to the Rules of Solid Waste Management, Chapter 391-3-4-.10(6), GPC prepared a Groundwater Monitoring Plan (included in Exhibit 6) and installed a groundwater monitoring system within the uppermost aquifer beneath the Site. This groundwater monitoring system consists of 12 monitoring network wells and 21 groundwater piezometers located around the perimeter of Ash Pond E. Since August 2016, independent groundwater samples from each monitoring network well have been collected and analyzed for Appendix III and Appendix IV test parameters (according to State CCR Rule 391-3-4-.10(6)(b), incorporating 40 CFR §257.93 Appendix III and IV constituents by reference) to establish a background statistical dataset. As of November 2018, eight (8) out of eight (8) rounds of background sampling events have been completed. As of November 2018, the results of six (6) rounds of background sampling events can be found at the Georgia Power Company Website under Environmental Compliance. The

results of the remaining two (2) rounds of background sampling events will be posted as they become available.

Following CCR removal from Ash Pond E, GPC proposes to conduct post-CCR-removal groundwater monitoring for five (5) years to verify the completion of closure-by-removal for the ash pond by demonstrating that the groundwater monitoring concentrations at the Site do not exceed the groundwater protection standards established pursuant to GA EPD rules 391-3-4-.10(6) (incorporating 40 CFR 257.95(h)) for constituents listed in Appendix IV.

4.13 DEMOLITION OF ASH POND INFRASTRUCTURE

Various plant and ash pond infrastructure will be demolished before, during or after ash pond closure. The coal-fired plant is being demolished separately from the ash pond closure project and the demolition is anticipated to be completed before the ash pond closure begins.

The disposition of various plant and ash pond infrastructure in and around Ash Pond E varies. Some infrastructure will need to remain functional during ash pond closure. Some infrastructure will be demolished during ash pond closure. Other infrastructure may be repurposed to support ash pond closure.

The disposition of ash pond infrastructure is summarized in the following table.

Table 4.1. Proposed Disposition of Existing Ash Pond Infrastructure

Existing Ash Pond Infrastructure	Maintain Functionality During CCR Removal	Demolish or Abandon During CCR Removal	Potential Repurpose for Ash Pond Closure	Demolish or Abandon During Dam Removal
36" HDPE Pipe (Ash Pond E to Ash Pond D Overflow Pipe)			X	X
Pozzalime Feeder		X		
24" HDPE Pipe (Former Sluice Line)			X	X
Ash Pond E Piezometers (in pond)		X		
Ash Pond E Piezometers (in dike)	X			X
Ash Pond E Blanket Drain and Transverse Drain Pipe	X			X
Ash Pond E Lateral/Finger/Sand Toe Drains	X			X
Ash Pond E Collector Sumps from Drains	X			X
Ash Pond E HDPE Sump Pump-back Line	X			X
Ash Pond E Relief Wells and Sumps	X			X
Drainage Ditches at Toe of Dam (with structures and piping)	X			X
Ash Pond E Primary Outlet Structure	X	X		
Ash Pond E Emergency Spillway (earthen structure)	X	X		
30" Discharge Pipe (abandoned)		X		

4.14 COORDINATION WITH GA EPD SAFE DAMS PROGRAM

GPC will coordinate with the GA EPD SDP related to activities associated with the Ash Pond E emergency spillway, the interim finger dikes, and the Category I Dam, as follows.

4.14.1 ASH POND E EMERGENCY SPILLWAY MODIFICATIONS

In the initial phase (Phase I) of closure activities, the Ash Pond E emergency spillway is proposed to be modified to achieve a spillway elevation of 428 ft msl (lowered from 430 ft msl) with a width of 150 feet (widened). If the modification to the Ash Pond E emergency spillway is retained during the

detailed design, a meeting will be scheduled with the GA EPD SDP to discuss required submittals and consultations.

4.14.2 INTERIM FINGER DIKES

In the second phase (Phase II) of closure activities, interim dikes are proposed to manage and control run-on to Ash Pond E, creating impoundments in Fingers 1, 2, and 3. Due to the dike heights, the interim finger dikes will be classified as Category II Dams. “Proposed or Existing Information For Inventory and Classification” forms will be submitted to the GA EPD SDP for each of the interim finger dikes. If the GA EPD SDP agrees with the Category II classification, no further action (i.e., submittals) will be required for these structures.

4.14.3 CATEGORY I DAM

In the third phase (Phase III) of closure activities, the Ash Pond E impoundment will be dewatered and CCR plus 6-inches of foundation soils will be removed from Ash Pond E, up to the Category I Dam. No impacts to the Category I Dam are planned until dewatering and CCR removal are complete.

As described in Section 4.11 of this plan, Site restoration activities include the breach and partial removal of the Category I Dam. Approximately one year prior to the planned date of the breach, GPC will submit a breach application form, plan view, and cross sections of the breach to the GA EPD SDP. Once the breach is approved by the GA EPD SDP and breach construction is complete, the GA EPD SDP will make a site visit to confirm completion, and if satisfied, the GA EPD SDP will recommend removing the permit for the Category I Dam at Ash Pond E.

4.15 DRAWINGS

Permit drawings, titled “Plant Branch CCR Surface Impoundment Closures, Ash Pond E Closure-by-Removal, Permit Drawings”, have been prepared depicting existing, interim, and final conditions associated with closure construction. The Existing Site Conditions drawing (Sheet 5) show the current topography and site features, as well as the existing groundwater monitoring well and piezometer network. The CCR Removal Plan drawing (Sheet 6) portrays interim conditions showing the expected CCR removal grades accounting for over-excavating six inches of soil, prior to the partial removal of the Category I Dam. The Restoration Grading Plan drawing (Sheet 7) portrays the post-dam breach grades, restoration grades, and final stormwater management measures. The

drawings also identify select infrastructure remaining or demolished at the interim and final conditions.

5. CERTIFICATION OF CLOSURE

Upon completion of CCR removal, a professional engineer registered in Georgia will prepare, and GPC will submit a certification report documenting the removal to GA EPD. Pursuant to State CCR Rule 391-3-4-.10(7)(e), once all CCR removal is complete and groundwater monitoring concentrations at the Site have been demonstrated not to exceed the applicable Federal and State groundwater protection standards, GPC will submit a closure report to the GA EPD Director. The closure report will be completed on forms provided by GA EPD.

GPC, as required by the GA EPD, will submit confirmation that a notation on the property deed has been recorded in accordance with State CCR Rule 391-3-4-.10(7)(f).

6. ESTIMATE OF CCR VOLUME TO BE REMOVED

The volume of CCR in the ash pond was estimated as 10,564,000 cubic yards using AutoCAD software.

7. VEGETATION PLAN

The final restoration areas for the ash pond and the potential onsite borrow area will be seeded and maintained (fertilized) to meet the requirements in the Manual for Erosion and Sediment Control in Georgia. These areas will be stabilized as appropriate for the final conditions. Areas will be stabilized within two weeks after reaching final grades. Areas where permanent vegetation is slow to establish will receive temporary seeding. GPC may submit soil samples to the County Extension Agent (or other agronomic laboratory) for analysis and determination of proper soil amendments.

8. EROSION AND SEDIMENT CONTROL (E&SC)

Erosion and sediment control measures will be designed, permitted, installed, and maintained in accordance with the Manual for Erosion and Sediment Control in Georgia [GSWCC, 2016], the permit drawings, and the detailed design drawings prepared in accordance with the State CCR Rule. A phased Erosion, Sedimentation, and Pollution Control Plan will be prepared as part of the detailed design depicting erosion, sediment, and stormwater and contact water management strategies during CCR excavation.

9. COST OF CLOSURE

Pursuant to State CCR Rule 391-3-4-.10(9)7(vii), financial assurance is not required for Ash Pond E, because it is a NPDES-CCR Surface Impoundment and closed through removal of CCR.

10. CLOSURE SCHEDULE

The following is a conceptual-level schedule communicating the anticipated milestones of major closure activities. The schedule will be refined as closure activities begin. This schedule could extend depending on opportunities to beneficially re-use CCR and/or disposal of CCR at Plant Branch and is as follows:

Table 10.1. Anticipated Closure Schedule for Ash Pond E

Activity	Duration/Schedule
Mobilization and Site Preparation	Year 1
Ash Pond Closure Construction Activities	Year 1 to Year 15 (estimated 10 to 15 years)
Submit a Certification Report Documenting the Removal to GA EPD	Upon completion of CCR removal
Groundwater Monitoring During Ash Pond Closure	Year 1 to Year 15 (estimated 10 to 15 years)
Post CCR-Removal Groundwater Monitoring	5 years following completing closure construction
Submit a Closure Report to the GA EPD Director	Upon demonstrating groundwater monitoring concentrations at the Site do not exceed the applicable Federal and State groundwater protection standards

11. REFERENCES

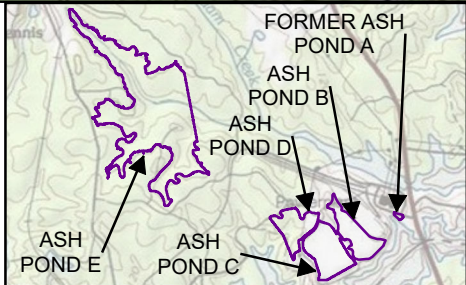
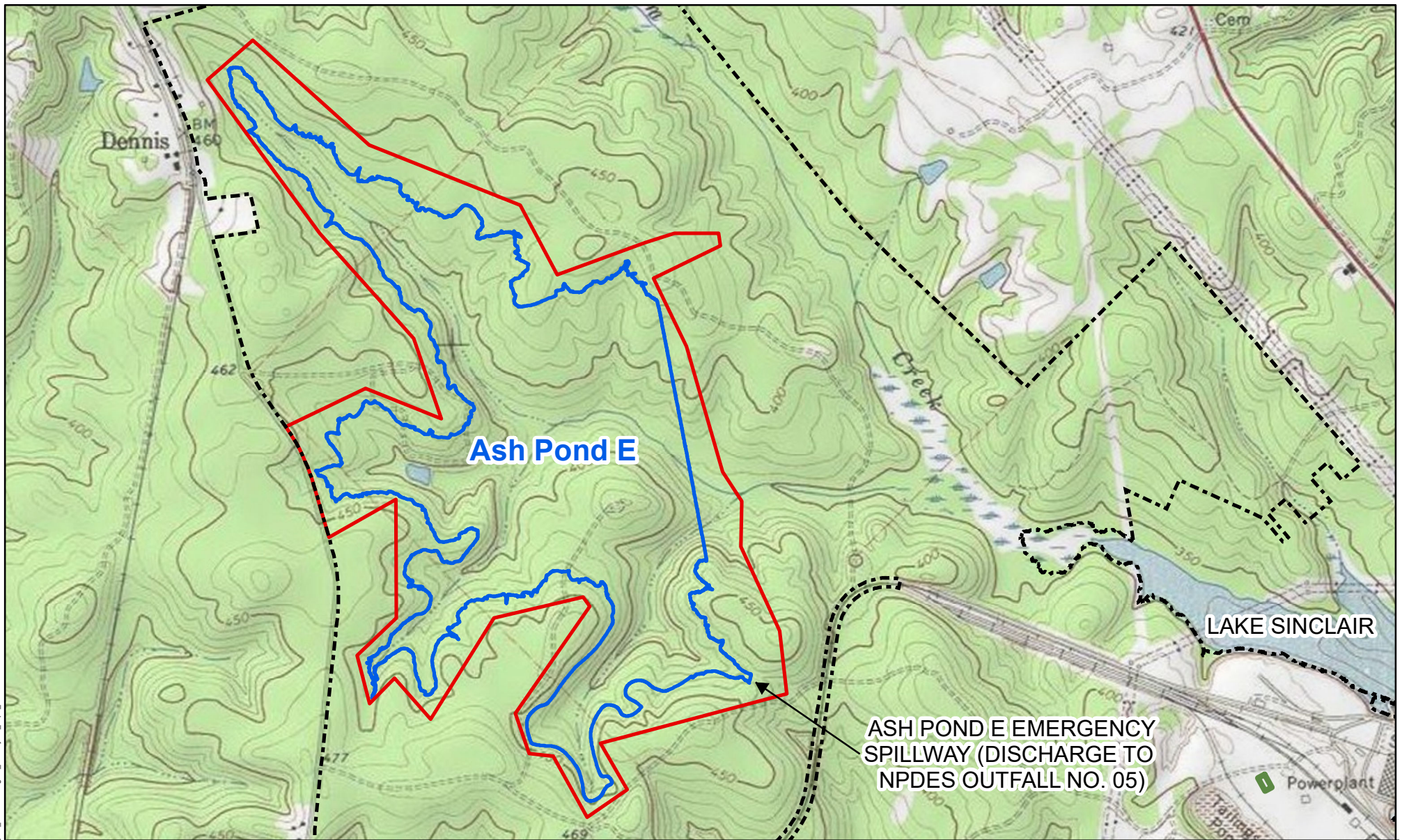
GPC (2017). "Georgia Power Plant Branch, NPDES Permit No. GA0026051, Ash Pond Dewatering Plan".

GSWCC (2016). "Manual for Erosion and Sediment Control in Georgia".

Geosyntec (2018). "Closure Plan for Ash Ponds B, C, and D, Plant Branch, Georgia Power Company".

FIGURES

\\aco-01\p1\GA Power\Plan\Branch\Plan Branch CCR Permitting\06_GIS\Map\Fig1.1_SiteLayout_Topographic_E.mxd 11/15/2018 10:42:44 AM



Legend

- Property Boundary
- Proposed CCR Permit Boundary
- Ash Pond E Boundary

Notes:
1. Service Layer Credits:
Copyright:© 2013 National
Geographic Society, i-
cubed

Site Layout - Topographic Map

Georgia Power Company
1100 Milledgeville Road
Putnam County, GA 31061

Geosyntec
consultants

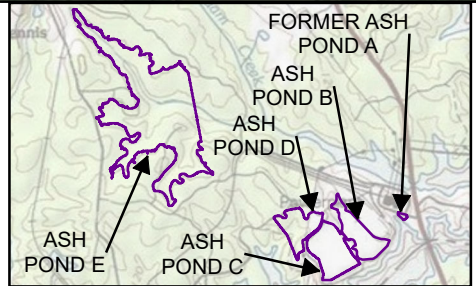
Kennesaw, GA

November 2018

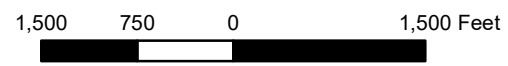
Figure

1.1

\\aco01\p1\GA Power\Plant Branch\Plan Branch CCR Permitting\06_GIS\MapXDFig1.2_SiteLayout_Aerial_E.mxd 11/15/2018 10:44:26 AM



KEY MAP



Legend

- Property Boundary
- Proposed CCR Permit Boundary
- Pond Boundary

Notes:
1. Service Layer Credits:
Copyright:© 2013 National
Geographic Society, i-
cubed
Source: Esri, DigitalGlobe,



Site Layout - Aerial Map

Georgia Power Company
1100 Milledgeville Road
Putnam County, GA 31061

Geosyntec
consultants

Kennesaw, GA

November 2018

Figure

1.2