Report of Geotechnical Assessment
Dam Safety of Coal Combustion Surface Impoundments
Plant McDonough, Smyrna, GA

AMEC Project No. 3-2106-0174.0100

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The management unit referenced herein: Southern Company, Georgia Power, Plant McDonough: Ash Pond 1, Ash Pond 2, Ash Pond 3, Ash Pond 4; was assessed on April 28th, 2010.

Signature ____

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Senior Geotechnical Engineer

List of AMEC Participants who have participated in the assessment of the management units and in preparation of the report:

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1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

AMEC was contracted by the United States Environmental Protection Agency (EPA), via contract BPA EP09W001702, to perform site assessments of selected coal combustion byproducts surface impoundments. As part of this contract with EPA, AMEC was assigned to perform a site assessment of Georgia Power Company's Plant McDonough, which is located in Smyrna, Georgia as shown on Figure 1, the Project Location Map.

A site visit to Plant McDonough was made by AMEC on April 28, 2010. The purpose of the visit was to perform visual observations and to inventory coal combustion surface impoundments, assess the containment dikes, and to collect relevant historical impoundment documentation.

AMEC engineers, Douglas Tate, PE and Mary Swiderski, EIT, were accompanied during the site visit by the following individuals:

Table 1. Site Visit Attendees

Company or Organization	Name and Title
Georgia Power Company	Tony Tramonte, Jr., Plant Manager
Georgia Power Company	Markell Heilbron, Environmental Lab Services Manager
Georgia Power Company	Tanya Blalock, Environmental Affairs Manager
Southern Company	Gary McWhorter, PE, Earth Science and Environmental Engineering
Southern Company	Hugh Armitage, PE, Senior Engineer, Hydro Services
Southern Company	Larry Wills, PE, Principal Engineer, Dam Safety, Hydro Services
Southern Company	Benjamin Gallagher, Engineer, Earth Science and Environmental Engineering
Troutman Sanders	Hollister Hill, Attorney

At the time of the site visit, the McDonough Plant was undergoing conversion from coal fired generation to gas fired turbine generation. We were informed that the use of coal fired generation was scheduled to be retired by the end of 2010.

1.2 Project Background

Coal Combustion Waste (CCW) results from the power production processes at coal fired power plants like Georgia Power's Plant McDonough. CCW is composed of fly ash, bottom ash and similar coal combustion by-products. Impoundments (dams) are designed and constructed to provide storage and disposal for the CCW that is transported by mixing the CCW with water and pumping it as slurry. Georgia Power refers to the CCW impoundments at the Plant McDonough facility as Ash Ponds 1, 2, 3, and 4.

The National Inventory of Dams (NID), administered by the U. S. Army Corps of Engineers (USACE), provides a hazard rating for many dams within the United States. According to documentation provided by Georgia Power, Ash Ponds 1, 2, and 3 do not appear on the NID. Ash Pond 4 is listed on the NID, but does not have an assigned hazard rating.

The Safe Dams Program is the body within the Georgia Department of Natural Resources Environmental Protection Division (EPD) that defines the term dam, as well as regulates dam design, construction and repair. The Safe Dams Program also evaluates dams to assign a dam category classification to each structure. Each dam within the state that is over 25 feet in height or has at least 100 acre-feet of storage capacity is assigned either a Category I or Category II classification. The Category I classification is assigned to structures "*where improper operation or dam failure would result in probable loss of human life. Situations constituting probable loss of life are those situations involving frequently occupied structures or facilities, including, but not limited to, residences, commercial and manufacturing facilities, schools, and churches*." A Category II classification indicates that "*improper operation or dam failure would not expect to result in probable loss of human life*". These definitions are from the Rules of Georgia EPD Chapter 391-3-8 Rules for Dam Safety, Section 391-3-8.02(d) and (e). There are four existing ash ponds at Plant McDonough. Although Ash Pond 1, Ash Pond 2, and Ash Pond 3 meet the Rules of Dam Safety definition of a Category II dam, the status of these structures, according to GA EPD, is unclassified. Ash Pond 4 has been assigned a Category 1 classification by the Georgia EPD. According to the Safe Dam Rules, Category I dams are permitted and monitored periodically, while Category II dams are not permitted, but are re-inventoried every 5 years. The re-inventory procedure is conducted to determine if adjacent or downstream development has changed or has been proposed to change in a manner that would necessitate a reclassification to a Category I dam.

As part of AMEC's observations and evaluations performed at Plant McDonough, AMEC completed EPA's Coal Combustion Dam Inspection Checklists and CCW Impoundment Inspection Forms. Inspection forms for each CCW ash pond are presented in Appendix A. The Impoundment Inspection Forms include a section that assigns a "Hazard Potential" that is used to indicate what would occur following failure of an impoundment. The EPA's "Hazard Potential" choices include "Less than Low", "Low", "Significant", and "High". Based on the site visit evaluation of the impoundments, AMEC engineers assigned a "Low Hazard Potential" classification to the Ash Ponds 1, 2 and 3. As defined on the Inspection Form, a "Low Hazard Potential" classification is reserved for dams 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 owner's property*." Ash Pond 4 was assigned a "High Hazard Potential" classification. Dams assigned a "*High Hazard Potential" classification are those dams "where failure or misoperation will probably cause loss of human life."*

1.2.1 State Issued Permits

The Georgia Department of Natural Resources has issued Georgia EPD National Pollutant Discharge Elimination System (NDPES) Permit No. GA0001431 to Georgia Power Company. This NPDES Permit authorizes the Georgia Power Company to discharge from Plant McDonough to the Chattahoochee River. The permit became effective on June 28, 2004 and was set to expire on December 31, 2008. However, the Georgia EPD has initiated a basin wide permitting strategy whereby permits are reissued within groups of river basins during specific years. As part of that process, permits are extended until such time that they can be reissued within their basin grouping. The EPD has extended Georgia Power's NDPES Permit GA0001431 for Plant McDonough until such time that it can be reissued within the appropriate river basin group.

On June 22, 1979, in accordance with the provisions of the Georgia Safe Dams Act of 1978 and the Rules and Regulations promulgated pursuant thereto, the Georgia EPD issued Dam Operation Permit No. E-033-021-0165 (also used as the dam identification number), including General Dam Operating Conditions, to the Georgia Power Company for Plant McDonough Ash

Pond 4. The permit remains in effect following years of acceptable inspections by GA EPD and satisfactory operation and reporting by Georgia Power.

1.3 Site Description and Location

Georgia Power Plant McDonough is located in Smyrna, Georgia. The facility is near the intersection of Georgia Highway 280 and Interstate 285, northwest of Atlanta, in Cobb County, Georgia. The area surrounding the plant boundary is a concentrated mix of industrial, commercial, and residential development. The Chattahoochee River is located directly adjacent to the facility's southeast side. The distance between the closest point of the ash ponds and the Chattahoochee River is between approximately 900 and 1,100 feet in the case of Ash Ponds 1, 2, and 4, and 1,600 feet in the case of Ash Pond 3. The Photo Site Plan, included as Figure 2, shows the location of the four ash ponds on the site, the coal pile runoff pond, and their proximity to the river.

An aerial photograph of the region indicating the location of Plant McDonough's ash ponds in relation to schools, hospitals, and other critical infrastructure located within approximately 5 miles down gradient of the ash ponds is included as Figure 3, the Critical Infrastructure Map. A table that provides names and coordinate data for the infrastructure is included on the map.

1.4 Ash Ponds

Plant McDonough is a coal-fired steam plant that produces ash as a residual of the coal combustion process. In this process, two types of ash are generated: fly ash and bottom ash. Bottom ash, the heavier and coarser of the two, is wet sluiced to Ash Pond 2, where it settles from the water in a concrete chamber and convoluted settling channel. The settled ash is removed for sale or dry stacking. The decant water is then pumped into Ash Pond 3, routed through its channel, finally discharging into Ash Pond 4. We understand that Plant McDonough processes approximately 90 percent of the fly ash that is produced as a dry waste product. The fly ash is dry stacked atop portions of Ash Pond 3 or Ash Pond 4 or sold when a market for the product exists. When fly ash is wet sluiced, it is discharged directly into Ash Pond 3 where the fly ash settles out into the channel bottom as the flow moves toward Ash Pond 4. The channel in Ash Pond 3 is occasionally dredged for settled fly ash. The dewatered ash is placed in one of the facility's dry stacking areas.

The ash handling summery detailed above was provided to AMEC by Southern Company engineers responsible for design and evaluation of the Plant McDonough facility operational processes. Southern Company is the parent company of Georgia Power. Design and communication documents provided to AMEC by Southern Company and Georgia Power indicate the following shared background for Ash Ponds 1 through 4.

- Each of the four ash ponds at Plant McDonough contain fly ash, bottom ash, boiler slag, pyrites, and low volume waste as defined under 40 CFR 423.11.
- Design of each of the four ash ponds was performed by a professional engineer.
- Ash Pond 4 was constructed under the supervision of a professional engineer, but to date, Georgia Power has not been successful in locating information to document the supervisory condition that existed during construction of Ash Ponds 1, 2, and 3.
- Regular, periodic, formal, documented inspection of each of the four ash ponds is currently performed by a professional engineer.

- Weekly or daily walk-over checks are made by Georgia Power personnel trained for dam and impoundment inspection.

Ash pond views and typical embankment cross sections are illustrated on Figures 4 and 5, and 6, 7, 8, and 9, respectively. Background information that is specific to each ash pond is presented in the following sections. More comprehensive information is provided in Section 2, Field Assessment.

1.4.1 Ash Pond 1

Ash Pond 1 was commissioned in 1964 with a total storage capacity of 880,000 cubic yards (CY), a corresponding surface area of 25.3 acres, and a maximum embankment height of 30 feet. The pond was in service until approximately 1968, and then removed from service at full storage capacity. At present, Ash Pond 1 no longer receives liquid-borne material, is filled and covered, inactive, and used as a lay-down and parking area. Based on current survey data, the maximum dike and minimum toe elevations are approximately 802 and 754, respectively.

1.4.2 Ash Pond 2

Ash Pond 2 was commissioned in 1968 with a total storage capacity of 190,000 CY, a corresponding surface area of 6.5 acres, and a maximum embankment height of 16 feet. This pond is currently used as a dewatering facility for bottom ash. Bottom ash, sluiced to Ash Pond 2 from the plant facility, is excavated for market or stored in one of Plant McDonough's permitted dry stacking facilities. Ash Pond 2 is filled nearly to capacity and only small volumes of material are temporarily stored in this pond for dewatering depending upon Plant McDonough's operational requirements. Based on current survey data, the maximum dike and minimum toe elevations are approximately 810 and 784, respectively.

1.4.3 Ash Pond 3

Ash Pond 3 was commissioned in 1969 with a total storage capacity of 1,036,000 CY, a corresponding surface area of 23 acres, and a maximum embankment height of 39 feet. Currently, this pond receives liquid born wastes during sluicing operations for fly ash. Although the date of the current volume measurement is unknown, at present, there is thought to be 1,036,000 CY of material stored in Ash Pond 3. According to Georgia Power, the capacity of this pond was expanded in 1995 and again in 2006 with Georgia EPD's approval of a dry ash stacking plan for the storage of ash within the existing pond boundaries. In addition, current survey data indicates the maximum dike and minimum toe elevations are approximately 845 and 815, respectively, while the top of ash stack elevation is approximately 880.

1.4.4 Ash Pond 4

Ash Pond 4 was commissioned in 1972, but not put into use until mid 1977. This pond was designed with a total storage capacity of 3,220,000 CY, a corresponding surface area of 41 acres, and a maximum embankment height of 68.6 feet. A portion of Ash Pond 4 serves as a co-treatment facility that receives low-volume wastes. The remaining portion of Ash Pond 4 acts as a sedimentation basin for a dry stacking operation that was permitted by EPD in 1995 and again in 2006. As of May 2009, the volume of material stored in Ash Pond 4, as reported by Georgia Power, was 2,988000 CY. In addition, current survey data indicates the maximum dike and minimum toe elevations are approximately 846 and 768, respectively. The top of ash stack and bottom of pond elevations are approximately 860 and 819, respectively.

To construct Ash Pond 4, an existing stream diversion was required. The diversion was accomplished by routing approximately 2,900 feet of 90-inch diameter fiberglass lined, reinforced concrete pipe across the bottom of Ash Pond 4. This culvert, or “tunnel” as plant personnel refer to it, enters the pond area under the north embankment and exits under the south embankment at approximate embankment stations 33+00 and 15+00, respectively.

1.4.5 Other Impoundments

According to the Process Flow Diagram in the facility’s NDPES permit (MCD-API 048), a Coal Storage Pile Runoff Pond receives flow from a site water treatment pit sump and emergency overflow from Ash Ponds 2, 3 (hydraulically connected to Ash Pond 4) and 4.

1.5 Previously Identified Safety Issues

Discussions with plant personnel and review of provided documentation indicate that there are no current or previously identified safety issues within the past 5 years at Plant McDonough.

1.6 Site Geology

A summary or the regional geology was prepared by Southern Company Generation Technical Services, Inc. as part of the *Report of Study of Removal of Dike Material and Fly Ash from Ash Pond Nos. 1 and 3*, dated May 2009 (MCD-API 044). Section 4.1 states “the regional geology was found by reviewing the Geologic Map of Georgia, 1976. This map indicates that the site is located in the Blue Ridge and Piedmont Province. The site is located near the juncture of the biotite gneiss formation and the Button Mica Schist. The biotite gneiss formation consists of the units of metamorphic rock displaying gneissic banding, strong foliation, and relatively high biotite-mica content. The Mica Schist formation includes a wide variety of mica schists containing biotite and/or muscovite with lesser units of graphite schist, gneisses, and amphibolites.”

In general, piedmont soil is weathered from partially to fully metamorphosed bedrock of the type described above. There is usually no distinct or abrupt change from soil to bedrock, but a general increase in strength and consistency with increasing depth. An intermediate phase (between bedrock and soil) is known as saprolite, which is chemically weathered rock that is mostly soft or friable and commonly retains the structure of the parent rock since it is autochthonously formed in place. Piedmont soil is most usually composed of silt, clayey silt, or sandy silt but can be sand or clay as well.

1.7 Inventory of Provided Materials

Southern Company and Georgia Power provided AMEC with numerous documents pertaining to the design and operation of Plant McDonough. These documents were used in the preparation of this report and are listed in Appendix D, Inventory of Provided Materials.

2.0 FIELD ASSESSMENT

2.1 Visual Observations

AMEC performed visual inspections of Plant McDonough's Ash Ponds 1, 2, 3, and 4 on April 28th, 2010. Assessment of the ash ponds was in general accordance with *FEMA's Federal Guidelines for Dam Safety, Hazard Potential Classification System for Dams, April 2004*. The EPA Coal Combustion Dam Inspection Checklist and CCW Impoundment Inspection Form were completed for each ash pond during the site visit. The completed forms were provided to the EPA via email five business days following the site visit. Completed checklist forms can be found in Appendix A. Additionally, photographs were taken of each impoundment. The site photo log map, photos, and descriptions can be found in Appendix B. Rainfall data from for the Smyrna, Georgia area was collected for the 30 days prior to the site visit. The monthly rainfall looks typical. Table 2 below summarizes the rainfall data.

Table 2. Plant McDonough Rainfall Data

Rainfall Prior to Site Visit	
Date	**Rainfall (in.)**
April 20, 2010	0.27
April 21, 2010	0.0
April 22, 2010	0.0
April 23, 2010	0.0
April 24, 2010	1.81
April 25, 2010	0.0
April 26, 2010	0.0
April 27, 2010	0.0
Total (7 days prior to visit)	**2.08**
Total (30 days prior to visit)	**2.56**

2.2 Visual Observations - Ash Pond 1

Ash Pond 1 historically received liquid-borne CCW materials. This pond became inactive in the late 1960's when it was filled to capacity with CCW. Currently, Ash Pond 1 is filled and covered, inactive, and used as a lay-down and parking area for the current construction activities. At the time of the site visit, standing liquid was not observed in the pond. Ash Pond 1 is capable of impounding water and it has a functional drop inlet decant; however, the decant flow capacity is not known.

2.2.1 Ash Pond 1 - Embankments and Crest

Ash Pond 1 has a side-hill configuration. According to design drawings, the embankment is approximately 30 feet high and the pool area is 25.3 acres. In general, the crest and downstream embankment was covered with moderate vegetation (photos 1-3 through 1-7). A chain link fence is present at the shoulder of the embankment, which restricts access to the slope.

2.2.2 Ash Pond 1 - Outlet Control Structure

The primary outlet structure is a square concrete, vertical, drop inlet with a 36-inch diameter, corrugated metal pipe (CMP), located in the southern end of Ash Pond 1 (photos 1-1 and 1-2). Water discharges through this structure to an unnamed creek, which then flows south to the Chattahoochee River. At the time of the site visit, water appeared to be tricking into the drop inlet from joints in its sides (probably precipitation seeping through the ash) and then exiting through the decant pipe. AMEC was able to observe the decant outlet and the water appeared to be flowing clear and unobstructed (photos 1-3 and 1-4). No open channel spillway was present at Ash Pond 1.

2.3 Visual Observations - Ash Pond 2

Ash Pond 2 historically received liquid-borne CCW materials and was filled to capacity with CCW. The surface of Ash Pond 2 is currently used as a dewatering facility for bottom ash. Ash Pond 2 is capable of impounding water and it has a functional drop inlet decant; however, the decant flow capacity is not known.

2.3.1 Ash Pond 2 - Embankments and Crest

Ash Pond 2 has a side-hill configuration along the southern and eastern dikes, but is incised along the remainder of the structure. Ash Pond 2 has a 16-foot high embankment with a pool area of 6.5 acres. At the time of the site visit, the freeboard was approximately 2 feet. Currently, the pond is primarily dry and is partially used as a dewatering and processing area. Steep slopes and an uneven ground surface, which consisted of minor bulges and depressions, were noted along the southern slope (photo 2-1). The dikes appeared to be maintained and mowed at the time of the site visit.

2.3.2 Ash Pond 2 - Outlet Control Structure

The emergency decant outlet is a sloped concrete drop inlet with a 30-inch diameter CMP outlet pipe. The inlet, on the southern end of the pond, is fitted with a baffled type grate (photos 2-3 and 2-4). Flow enters the grated structure, travels beneath the embankment structure via a 30-inch CMP and then discharges into the coal pile runoff pond (Figure 2 and photo 2-5). Normal operational discharge from Ash Pond 2 is achieved by pumping flow into Ash Pond 3 as necessary based on facility operation.

2.4 Visual Observations - Ash Pond 3

Ash Pond 3 was primarily dry at the time of the site visit. The majority of this pond is filled and is used, primarily, as a lay-down area. This pond also provides storage for permitted dry-ash stacking. Despite being primarily dry, Ash Pond 3 does currently receive liquid borne waste from two sources. Flow comes either directly from the plant during sluicing operations for fly ash (photo 3-2) or as pumped decant flow from Ash Pond 2's bottom ash settling operation. A serpentine channel constructed inside this pond, the "S-curve" as it is known at Plant McDonough (Appendix B, Figure B-3), conveys liquid from either source directly into Ash Pond 4, without impounding. The channel length and layout lowers the energy of the flow and provides detention time that allows a portion of the suspended solids to settle out of the slurry before reaching Ash Pond 4. According to plant personnel (MCD-API 076), "the settled ash is periodically excavated and stored in the dry stack."

2.4.1 Ash Pond 3 - Embankments and Crest

Ash Pond 3 has a side-hill embankment 39 feet high and a pool area of 25 acres. The dikes appeared to be maintained and mowed (photo 3-4). Axial and lateral drains are present in Ash Pond 3. Four lateral drains are present along the southern and south-western downstream toe. Station numbers for these drains were not provided. During the site visit, lateral drain 3-3 was noted to be flowing, which was typical according to on-site personnel. Drawings indicate axial drains are present along the southern and south-western downstream toe. Ash Pond 3 is capable of impounding water and it has a functional drop inlet decant; however, the decant flow capacity is not known. The western side of the pond embankment faces Maner Rd SE; residential and business neighborhoods are present west of the dam.

2.4.2 Ash Pond 3 - Outlet Control Structure

The original primary discharge structure does not currently discharge decant flow for Ash Pond 3. The structure, a 36-inch vertical CMP riser connected to a 24-inch diameter CMP, was observed along the southeastern portion of the pond (photo 3-1) and discharges to an incised sediment basin (Figure 2) for newly constructed plant facilities. The outlet pipe was observed to be unobstructed, however it appeared to have been recently damaged by construction equipment (photo 3-5). The original design of Ash Pond 3 included an open channel spillway at the northeast corner of the impoundment. That structure has subsequently been changed to a culvert at the end of the "S" channel, which discharges into Ash Pond 4. The current primary flow outlet from Ash Pond 3 is the serpentine channel that discharges directly into Ash Pond 4. This channel forms a direct hydraulic connection between the two ponds. There is at least one roadway, with an associated flow through culvert, at about the midway point of the channel's flow path. Neither the channel nor the culvert capacities are known. Although the NPDES Process Flow Diagram does not indicate that Ash Pond 3 has an emergency overflow discharge, the site visit and historical construction drawings indicate that a trapezoidal channel located between Ash Ponds 3 and 4 (and indicated as the emergency discharge for Ash Pond 4) may function as some type of emergency discharge for Ash Pond 3 as well.

2.5 Visual Observations - Ash Pond 4

Ash Pond 4 is a co-treatment facility that receives liquid CCW overflow from Ash pond 3 and dry-stack fly ash from Plant McDonough. Ash Pond 4 has about 1/3 of its surface area as free water with the remainder used for dry-stack and construction lay-down area. The pond is roughly triangular with an earthen dike located from the northern to the southern boundary of the triangle, the west and southwest being higher ground. The north dike faces a public thoroughfare (Plant Atkinson Rd SE): both light industrial and business neighborhoods are present to the north and northeast of the pond.

2.5.1 Ash Pond 4 - Embankments and Crest

Ash Pond 4 is a 68 foot high, earthen embankment, with a 41 acre pool area. A freeboard of approximately 10 feet was noted during AMEC's site visit (photo 4-10). The dikes appeared to be maintained and mowed. The dam was designed with an internal drainage system and the outlets were observed to be working; sediment free water was noted to flow out of several of the drains. A total of 19 lateral drains are located along the embankment of Ash Pond 4. During the site inspection Drain 15 was noted to be flowing (photo 4-2), which according to on-site personnel, is typical. Additionally, two weirs (east and west weir) are located at the downstream toe of the north end of the embankment (photo 4-3).

Several locations along the eastern downstream face lacked vegetation; however, reseeding efforts were in progress during the site visit (photos 4-4). Additionally, a bulge was noted along the eastern downstream crest. Site personnel explained that the bulge had been noted previously and had not changed for several years.

2.5.2 Ash Pond 4 - Outlet Control Structure

The primary outlet for Ash Pond 4 is a sloping concrete structure connected to a 24-inch diameter fiber glass pipe. The 24-inch diameter pipe was placed inside the original 36-inch diameter pipe and outer area grouted closed when Plant McDonough initiated water reuse. The concrete structure supports an adjustable trash rack/screen and stop log unit so the water level can be adjusted from time to time as needed by facility operations. The inlet is located along the southern edge of the ash pond. Flow from this primary outlet discharge structure is conveyed to the power plant for reuse and recycling purposes. Although the outlet of the primary discharge was totally enclosed, flow from Ash Pond 4 was seen flowing clear at a reuse line sampling point located within the power plant. According to plant personnel, the permitted regular discharge (NPDES 01 Final Discharge) also exits the pond through the 24-inch diameter pipe, but is diverted to the Chattahoochee River between the pond and the reuse flow destination.

A trapezoidal, open channel emergency spillway is located along the northwestern corner of the pond and was dry at the time of the site visit. The spillway was measured and found to be approximately 4 feet deep, with approximate top and bottom widths of 47 feet and 15 feet, respectively. The earthen trapezoidal channel carries flow to a 48-inch vertical inlet with a 36-inch diameter CMP outlet pipe. There were no connective elevations, flows, or hydraulic calculations in the provided documentation to identify the controlling hydraulic structure at this location, but it would appear to be the control section of the emergency spillway. According to the NPDES Process Flow Diagram, the emergency discharge from Ash Pond 4 is tributary to the Coal Pile Runoff Pond, located south of Ash Pond 2. The spillway was noted to have some overgrown vegetation (photo 4-9).

2.6 Monitoring Instrumentation

Historically, impoundment monitoring equipment such as piezometers and lateral embankment drains were used at the Plant McDonough facility. A description of this instrumentation and their locations throughout the facility is provided below.

2.6.1 Ash Ponds 1 and 3

Piezometers

In May 2009, a geotechnical investigation (which included Standard Penetration Test and Cone Penetrometer Test borings) was completed to gain an understanding of Ash Ponds 1 and 3, as well as the ash fill contained within each structure. Borings were extended to depths just below the maximum height of the embankments, and borings were located within the ash to determine the thickness of the ash. Eight and seven borings were completed in Ash Ponds 1 and 3, respectively. Three temporary piezometers were installed in each ash pond, however, no well details were provided. Recent readings, as reported in the "Report of Study of Removal of Dike Material and Fly Ash From Ash Ponds Nos. 1 and 3", dated May 2009 are shown below in Table 3. Piezometer locations are provided in Figure 4. The study stated that plant personnel intended to read the piezometers monthly,but there was no other reference to data piezometers located in Ash Pond 3 beyond that shown in Table 3.

Table 3. March 2009 Study Ash Ponds 1 and 3 Piezometer Data

		March 16, 2009		April 20, 2009	
Piezometer	Bottom of Piezometer Elevation* (MSL)	Depth (ft)	Elevation (MSL)	Depth (ft)	Elevation (MSL)
AP1-1	756.5	24.78	769.17	23.06	770.89
AP1-5	Not Provided	28.66	769.82	27.24	771.24
AP1-7	Not Provided	29.49	767.90	28.25	768.84
AP3-1	814.0	23.45	821.84	21.36	823.93
AP3-2	816.7	11.13	831.40	11.00	813.43
AP3-5	811.7	26.90	819.28	26.15	820.03

*Bottom of Piezometer Elevation Determined by AMEC using Boring Logs from January 2009.

In support of the 2010 stability analysis a total of 4 additional borings were completed in Ash Pond 1. Two piezometers (AP1-10, and AP1-13) were installed in order to observe water levels within the embankment. Based on boring and well logs provided in the 2010 stability analysis, the wells were generally installed with a 2-inch Schedule 40 PVC pipe and a 10-foot well screen at the base of the boring. Year 2010 recorded piezometer levels for Ash Pond 1 can be found in Table 4, while piezometer locations can be identified on Figure 4.

Lateral and Axial Drains

Lateral and axial drains are not present in Ash Pond 1.

Axial and lateral drains are present in Ash Pond 3, see Figure 5 for drain locations. As illustrated by "Plant McDonough-Atkinson Site Surveillance Map" dated January 4, 1996, four lateral drains (drains 3-2, 3-3, 3-4, and 3-5) are present along the southern and south-western downstream toe. Station numbers for these drains were not provided. During the site visit, lateral drain 3-3 was noted to be flowing, which was typical according to on-site personnel. It was observed that on drawing "Plant Jack McDonough/Atkinson Ash Pond Details of Underground Drainage" dated May 12, 1969, additional 6 to 8-inch CMP lateral drains are indicated to be present at stations 14+85, 15+85, and 16+85 along the south-western toe, however these drains do not appear on the later 1996 drawing.

In addition to lateral drains, axial drains are present in Ash Pond 3. According to drawing "Plant Jack McDonough/Atkinson General Layout and Details of Ash Pond", dated February 19, 1958, axial drains appear along the southern and south-western downstream toe. Along the south-western toe the axial drain consists of a drainage ditch, which at approximately Station 15+10, transitions into a 6-inch perforated pipe and drainage filter, this further transitions into an 8-inch perforated CMP and graded filter.

2.6.2 Ash Pond 2

Piezometers

In support of the 2010 stability analysis a total of 7 borings were completed in Ash Pond 2. Three piezometers (AP2-02, AP2-04, and AP2-05) were installed in order to observe water levels within the embankment. Table 4 provides year 2010 piezometer level data for Ash Pond 2, while Figure 4 illustrates piezometer locations. Based on boring and well logs provided with the 2010 stability analysis, the wells were generally installed with a 2-inch diameter PVC pipe and a 10-foot well screen at the base of the boring. No lateral or axial drains were noted for Ash Pond 2.

Table 4. May 2010 Plant McDonough Stability Analyses Ash Ponds 1 and 2 Piezometer Data

Groundwater Elevation in Piezometer												
	Ground Surface Elev.	Bottom of Screen Elev.	Bottom of Ash Elev.*	1/28/2010	2/8/2010	2/10/2010	2/11/2010	3/8/21010	3/23/2010	4/19/2010	4/29/2010	5/9/2010
AP1-1	793.5	756.5	766.1	776.0		776.6		776.6	776.9	776.5	776.2	776.5
AP-1-5	798.5	758.5	746.0	778.5	778.3			778.7	779.0	779.0	778.6	778.8
AP1-10	798.6	738.6	751.8					771.8	772.1	771.3	771.2	771.9
AP1-13	755.7	715.2	766.1					-	754.0	754.9	755.0	**
AP2-2	802.5	768.9	766.0				784.1	783.6	783.6	783.1	781.8	783.2
AP2-4	808.3	779.0	778.0					790.5	790.5	790.0	789.9	790.2
AP2-5	807.7	780.0	778.0					791.6	791.8	791.3	791.4	**

*based on adjacent borings
**-not accesible

2.6.3 Ash Pond 4

Piezometers

A total of 24 piezometers were installed at various locations around Ash Pond 4. Sixteen were installed by Law Engineering Testing Company (now known as MACTEC) at various locations within the embankment in November, 1976. A total of six additional piezometers were installed at station 17+15 in support of slope stability analyses performed on Ash Pond 4. Three of the six piezometers (AP-1, AP-2, and AP-3) were installed in 1981 by Atlanta Testing & Engineering. In 1998, the three remaining piezometers (P-4B, P-5B, and P-6B) were installed along the crest, mid-point, and toe of the embankment. Typical monitoring well construction consisted of a 2-inch diameter PVC riser pipe and a 10 to 50-foot slotted screen, depending upon the piezometer location.

According to provided quarterly reports, piezometer readings are normally recorded by plant personnel on a monthly basis. Standpipe piezometer locations for Ash Pond 4 are shown on Figure 5, while Appendix C contains corresponding data graphs.

In October of 2004 during a quarterly inspection, a leak was noted inside the 90-inch culvert tunnel beneath the ash pond, downstream of a 1970's repair location. In March, 2005 grouting efforts for the leak were completed. Following this process, piezometer P-10A never recovered, leading on-site personnel to presume the well screen had been grouted. To continue monitoring the embankment, P-10C was installed at this location. Since relining the 90-inch culvert tunnel in 2007, the piezometers have seen a gradual increase in piezometric levels. Currently P-10C is approximately one foot higher than P-10A.

Piezometer P-8R was destroyed in December 2004 when a contractor backed over it. Piezometer P-8B was installed in its place in August, 2005. Readings for the new instrumentation have been consistent with the previous reading for P-8R. Table 5 below provides a summary of Ash Pond 4 piezometer data.

Table 5. Plant McDonough Ash Pond 4 Piezometric Data

Piezometer ID	Year Installed	General Comments (As of January 8, 2010 4th Quarter Report 2009)
Station 6+75		
P-1	1977	Operating within historic range for a pond level of 834.5 to 835 feet MSL.
P-1A	1977	
P-2	1977	
Station 17+15		
P-4	1977	Operating within historic range for a pond level of 834.5 to 835 feet MSL.
P-4A	1977	
P-5	1977	
P-6	1977	
AP-1	1981[1]	
AP-2	1981[1]	
AP-3	1981[1]	
P-4B	1998[2]	
P-5B	1998[2]	
P-6B	1998[2]	
Station 25+00		
P-7R	1977	Operating within historic range for a pond level of 834.5 to 835 feet MSL.
P-7AR	1977	Has returned to historic elevations, recent rise in piezometer levels expected to be from rainfall from fall months.
P-8B	2005	Has returned to historic elevations, recent rise in piezometer levels expected to be from rainfall from fall months.
P-8R	1977	Damaged, Unable to Obtain Readings
P-9R	1977	Has returned to historic elevations, recent rise in piezometer levels expected to be from rainfall from fall months.
Station 33+00		
P-10A	1977	Since relining of 90” diameter pipe in December 2007, pz’s have displayed a gradual increase in piezometric levels.
P-10B	1977	
P-10C	2005	Since relining of 90” diameter pipe in December 2007, pz has displayed a gradual increase in piezometric levels, somewhat erratic behavior since September 2009.
P-11	1977	Operating within historic range for a pond level of 834.5 to 835 feet MSL.
P-12	1977	
P-13	1977	

Note[1]-Date estimated from Atlanta Testing and Engineering Ash Pond Slope Investigation, Dated September 2, 1981.
Note[2]-Date Estimated from Plant McDonough Quarterly Reports, indicate piezometer readings beginning in 1998. Additionally, stability analysis for Ash Pond #4, dated June 1, 1998, design calculations from Anita Brown, note 7, mention addition of three piezometers at station 17+15 along the crest, mid-point, and toe.

<u>Lateral Drains</u>

A total of 19 lateral drains are located along the embankment of Ash Pond 4, see Figure 5 for drain locations. During the site inspection Drain 15 was noted to be flowing, which according to on-site personnel, is typical. Additionally, two weirs (east and west weir) are located at the downstream toe of the north end of the embankment. The most current quarterly report provided (dated January 8, 2010) stated that flows for the two weirs has remained close to or slightly below their historical range. In regards to the drains, flow for Drain No. 1 increased significantly during and following slope modifications and road reconstruction along the south dike in June 2009. Drain 1 was rebuilt to capture the additional seepage that resulted from the work on the south dike. Flow for Drain 15 increased close to historic levels, which is expected to be a result of heavy rainfall during the fall months.

3.0 DATA EVALUATION

3.1 Design Assumptions

AMEC has reviewed the design assumptions related to the design and analysis of the hydraulic adequacy and stability of Ash Ponds 1 through 4 based on the results of our site visit and the historical impoundment information provided to us by Georgia Power. The design assumptions are described in the following sections.

3.2 Hydrologic and Hydraulic Design

Ash Pond 4 is classified as a Category I dam, and carries a GA EPD sub-classification of "large dam" as defined in *Dam Safety Rule 391-3-8-.02 Definitions. (h) and (k)*. According to *Dam Safety Rule 391-3-8-.09 Standards for the Design and Evaluation of Dams, (1) "*new and existing dams shall be" *(3) (f)* "capable of passing a fraction of the flood developed from the PMP hydrograph depending on sub-classification of the dam," and that the design storm for a "large dam" sub-classification is defined as "50 percent of the PMP." AMEC asserts that the impoundment is designed to contain the runoff due to some design storm event. That containment ability appears to be possible due to the relatively small watershed area (essentially the surface area of the hydraulically connected Ash Pond 3 and Ash Pond 4) and the storage capacity between normal pool elevation and the crest of the dam, less the required freeboard. However, verification was not possible because information regarding hydraulic and hydrologic design was not provided within the time available to prepare this report.

Ash Ponds 1, 2 and 3 are uncategorized according to GA EPD, therefore, these ponds are not subject to Dam Safety Rules for Category I and II dams. However, these ponds all have the capacity to store surface water, yet the flow capacity of their decant systems is unknown. In AMEC's opinion, the flow capacity of each decant system should be estimated and evaluated against a design storm appropriate for the size of the dam and its watershed area. If a decant system for a particular impoundment is found to be inadequate, then the impoundment should be provided with an appropriate emergency overflow structure. Alternatively, if the pond is inactive and unlikely to be reactivated, the "dam" can be breached or the pond area graded so that the pond can no longer impound water.

3.3 Structural Adequacy & Stability

The Georgia Department of Natural Resources Environmental Protection Division outlines standards for the design and evaluation of new and existing dams in Standards for the Design and Evaluation of Dams *(Rule 391-3-8-.09)*. Section *391-3-8-.09* (3) (a) of the Rule states that all (Category I, not Category II as excluded in 391-3-8-.04 Scope and Exclusions., subsection (d)) "dams must be stable under all conditions of construction and/or operation of the impoundment." Earthen embankments, when analyzed to determine safety factors using the methods, guidelines, and procedures of the agencies listed in the regulations, can be considered to have acceptable stability if the analyses yield at least the minimum safety factors shown in Table 5, as outlined in *Rule 391-3-8-.09 (3) (a) (1)*.

To analyze the structural adequacy and stability of the Ash Ponds at Plant McDonough, AMEC reviewed the material provided by Georgia Power with respect to the load cases shown in Table 6. Factors of safety documented in the provided material were compared with those factors outlined in Table 6 to help determine whether the impoundments meet the minimum requirements for acceptable stability.

Table 6. Georgia EPD Minimum Required Dam Safety Factors

Load Case	Required Minimum Factor of Safety(1)
End of Construction (2)	1.3
Steady State Seepage at flood stage	1.5
Steady State Seepage at normal stage with Seismic Loading	1.1
Rapid Drawdown	1.3
Submerged Toe with Rapid Drawdown	1.3

(1) From Georgia Environmental Rule 391-3-8 Dam Safety, subsection .09 Standards for the Design and Evaluation of Dams.
(2) Only applicable to newly constructed dams.

AMEC reviewed the May 2009 Study of Removal of Dike Material and Fly Ash from Ash Pond Nos. 1 and 3, as well as the October 1981, June 1998, and November 2008 stability analyses for Plant McDonough's Ash Pond 4. The recently completed May 2010 Georgia Power stability analysis for Ash Ponds 1 through 4 was reviewed as well and is summarized in Section 3.3.5. These reports were reviewed to determine the way the dike structures were modeled and to determine whether the calculated factors of safety were sufficient, compared to that required by the Georgia EPD newly constructed and existing dams, to prevent a failure of the impoundment that would cause release of any liquid-borne material.

3.3.1 Ash Ponds 1 and 3- Structural Adequacy & Stability

<u>May 2009 Study</u>

In May 2009, Southern Company Generation (SCG) Technical Services prepared *Study of Removal of Dike Material and Fly Ash from Ash Pond Nos. 1 and 3*. According to the study, the work "*was conducted to determine the feasibility of removing dike material and/or fly ash for use as structural fill for additional plant structures. The study included the determination of engineering properties of both materials, the in-situ properties of both materials, and the stability of the pond structures during and after the removal process.*"

Several borings were drilled in the dike crest and in the ash. Those borings located "*along the dike crest extended to depths just below the maximum height of the dikes. Ash material borings were drilled to determine the thickness of the ash at each location.*" The conditions encountered in the soil test borings "*indicated the dikes were constructed of silty sand and/or sandy silt and appeared to be moderately to well compacted. The soil contained various amounts of mica, fragments of weathered rock, and quartz pebbles. This material was reported to be consistent with residual overburden encountered in other areas of the site. The ash borings were said to be visually classified using conventional soil terms as silt or sandy silt. In-situ conditions were difficult to obtain since the ash was highly dilatant.*" Cone penetrometer and standard penetration tests "*indicated that the ash is of very low consistency.*" Sandy material was found in many ash bore samples. This finding, more so in Ash Pond 1, led those preparing the Study to conclude that "*much of the material was possibly a mixture of fly ash and bottom ash.*" Laboratory tests performed on the soil samples, including relatively intact Shelby tube and bulk samples, are presented in Tables 7 and 8.

Table 7. May 2009 Study Ash Ponds 1 and 3 Triaxial Strength Tests

Boring	Depth (ft)	Material Description	Sample 1**	Sample 2**	Sample 3**	c (psf)	Φ (deg)	c’ (psf)	Φ` (deg)
			γ_{dry} (PCF)	γ_{dry} (PCF)	γ_{dry} (PCF)				
AP1-1	5.0-5.5	Clay (CL)	110.8	110.8	110.8	120	21.8	180	28.8
AP1-1	6.5-7.5	Ash	80.4	80.4	-	0	27.2	0	32.4
AP1-3	15.5-17.0	Clay (CL)	104.8	99.2	101.3	570	25.8	80	33.0
AP1-5*	11.0-12.0	Ash	71.6	76.9	-	700	34.8	500	40.6
AP1-5	20.5-22.0	Clay (CL)	97.4	99.8	104.8	860	20.5	600	32.7
AP1-6	12.5-13.0	Ash	63.4	63.4	63.4	140	16.9	0	35.5
AP1-7	10.5-11.0	Silty Sand (SM)	107.4	107.4	107.4	210	22.8	490	31.0
AP1-7	11.5-12.0	Ash	74.5	74.5	74.5	0	35.4	0	34.0
AP3-1	21.5-23.0	Sandy Silt (ML)	102.6	102.6	102.6	580	22.7	170	35.0
AP3-2	5.0-10.0	Ash	66.4	66.4	66.4	430	28.1	60	33.2
AP3-3	10.5-12.0	Sandy Silt (ML)	106.1	110.8	102.4	420	21.3	280	29.8
AP3-5*	5.0-10.0	Silt (ML)	110.2	110.2	110.2	517	21.6	183	26.8
Dry Stack	0.0-5.0	Ash	110.2	110.2	110.2	1170	19.4	1030	22.8

*Values averaged from multiple interpretations of the test data.
**Data obtained by AMEC from QORE lab data dated January 2009.

Table 8. May 2009 Study Ash Ponds 1 and 3 Standard Proctor Tests

Boring	Depth (ft)	Maximum Dry Density (pcf)	Optimum Water Content (%)
Dry Stack	n/a	71.5	36.2
AP3-2	5.0-10.0	67.8	39.5
AP3-5	5.0-10.0	112.5	14.6

Positive conclusions regarding the use of fly ash as structural fill were described with the stipulation that “*the fly ash should be properly placed and compacted*.” Tests also indicated that fly ash possessed strength parameters that were suitable for “*some structural fill applications.*” One potential issue SCG Technical Services noted was that the “*dry density of ash was very low, lower than the 90 to 100 pcf that is recommended for structural fill*.”

SCG Technical Services evaluated slope stability using the Morgenstern-Price method on several profiles to model the condition following ash removal (purpose of the Study), as well as the existing dike configuration. The document did not include stability analysis figures or conclusions for Ash Pond 1; discussion was provided only for Ash Pond 3. See Section 3.3.3

below for the stability analysis results for Ash Pond 3 from the May 2009 Study by SCG Technical Services.

The final conclusion topic discussed for Ash Pond 3 was groundwater within the ash pond. Piezometer location AP3-2 indicated a water level 11 feet below the ground surface. Also noted was that surficial ash at the location of AP3-2 became soupy with increased traffic, due to the high dilatancy of the material.

See Section 3.3.5 for results of Southern Company's May 2010 Stability Analysis for Ash Pond 1.

3.3.2 Ash Pond 2 - Structural Adequacy & Stability

No historic documentation was provided for any stability analyses performed for this pond.

See Section 3.3.5 for results of Southern Company's May 2010 Stability Analysis for Ash Pond 2.

3.3.3 Ash Pond 3 - Structural Adequacy & Stability

See the SCG Technical Services prepared *Study of Removal of Dike Material and Fly Ash from Ash Pond Nos. 1 and 3*, prepared in May 2009, previously discussed in Section 3.3.1 and Tables 6 and 7 for background and supporting information for Ash Pond 3. The May 2009 Study provided calculated stability analysis factors of safety for Ash Pond 3, only, with the current serpentine channel condition. Those factors, for deep and shallow failures, were reported as 1.54 and 1.65, respectively.

The analyses appear to neglect the surcharge due to dry ash stacking. The phreatic surfaces used for the analyses don't appear to model the peak pool elevation or storm surcharge and storage (e.g., worst case design); instead; they seem to indicate normal day to day operations.

See Section 3.3.5 for results of Southern Company's May 2010 Stability Analysis for Ash Pond 3.

3.3.4 Ash Pond 4 - Structural Adequacy & Stability

<u>1981 Stability Analysis</u>

In October 1981, Southern Company Services performed a stability analysis for Ash Pond 4 in response to a July 1981 Georgia Power request for the analysis due to piezometer readings that showed high internal pressures. The analysis report indicated that the stability factors were computed using the New York State and Simplified Bishop Methods in the SNOB-I program. The McDonnell Douglas program McAuto was used to verify the section with the lowest factor of safety as defined by the SNOB-I analyses. The report indicates in-situ effective soil strength characteristics were determined by plotting p versus q stress paths from R triaxial test data along with soil boring logs that were supplied by Atlanta Testing and Engineering Co. The values used for foundation rock were reported to be recommended by Law Engineering Testing Company in their report of January 2, 1969, LETCO Job No. 5862. Table 9 indicates the soil parameters that were reported as best fitting the in-place conditions.

Table 9. 1981 McDonough Ash Pond 4 Stability Analysis Soil Parameters

Material	Φ, Friction Angle (deg)	C', Cohesion (psf)	γ, Unit Weight (pcf)
Fill	32	100	120
Foundation Soils	32	420	120
Foundation Rock	80	3,000	150

The analysis further states that since the pond is not subject to rapid water surface fluctuations, the highest phreatic water surface recorded over the previous four years was used in the calculations. Additionally, only the steady state condition was analyzed for the downstream slope since it would present the more critical case. Embankment station 17+15, which is located on the east embankment approximately 150 feet north of the dike's intersection with the 90-inch stream diversion pipe, represents the typical cross section analyzed. Although the analysis cover letter states that results are shown in a tabulated form, the tabulated results were not included in the documentation received by AMEC. The cover letter does provide the following results of the analysis:

1. Figure A (missing from AMEC's copy): Typical Failure Surface encountered through fill material. Minimum Factor of Safety of 1.53.
2. Figure B: Typical Failure Surface encountered through fill and soil foundation material. Minimum Factor of Safety of 2.12.

<u>1998 Stability Analysis</u>

A request for a stability analysis was again made by Georgia Power in early 1998 for Ash Pond 4 to determine if the structure would be stable if the water surface elevation was raised to the design level of 840 feet. The design calculations stated that in 1998, piezometer levels had remained relatively constant at a pond elevation of 834 feet, but that there were four isolated seeps at the toes. The rest of the embankment and toe areas remained fairly dry and drain and weir flows had remained constant. The following design criteria and assumption notes were provided with this study.

1. The SLOPE/W program was used to calculate factors of safety under various conditions.
2. Original cross section data for Stations 6+75, 25+00, and 33+00 was used; Land Department cross sectional survey data was used for Station 17+15 in place of original data; several other cross sections in the vicinity of Station 17+15 were drawn and analyzed.
3. The highest average piezometer levels for the previous 5 years (1993 through 1997) were used.
4. Soil data from 1981 was analyzed to create an envelope of soil strength parameters. Various C' and Φ' values were used.
5. Peak acceleration with 2% probability of exceedence in 50 years was determined by USGS hazard maps.
6. Comparative safety criteria were taken from Georgia EPD's "Rules for Dam Safety".
7. Except for Station 25+00, there are no fill piezometers. All piezometers exist at the foundation/fill contact or go below into foundational material. Piezometers were placed at the crest, mid-point and toe of the embankment at Station 17+15.

8. New piezometer data was used for all sections except Stations 6+75 and 25+00.
9. A new section at Station 15+00 (drop inlet) was modeled. This was considered to be the critical section when two-dimensional analysis methods are used.
10. Cohesion and unit weight values were determined from the 1981 soil test data. An envelope of high to low cohesion numbers was defined, and a number in the 30% range was chosen.

The results of the stability analysis are shown below in Table 10. Soil parameters reported as used in the analysis include a C' of 100 psf and Φ' of 33.8° for fill material and a C' of 103 psf and Φ' of 37.6° for virgin material.

Table 10. June 1998 McDonough Stability Analysis Summary

	Factors of Safety		
	Steady State	**Earthquake**	**Rapid Drawdown**
Section 6+75	2.1	1.4	1.3
Section 15+00	1.5	1.1	Same as 17+15
Section 17+15	1.8	1.2	1.5
Section 25+00	1.6	1.2	1.4
Section 33+00	2.2	1.5	1.6

<u>2008 Stability Analysis</u>

The 2008 stability analysis of Ash Pond 4 was performed to determine whether removal of material from the pond's downstream slope, which was necessary for the construction of a permanent access road to connect Plant McDonough to the newly constructed combined cycle Units 4 and 5, would affect stability of the southern portion of the embankment. The SLOPE/W 2007 stability program was used in the analysis.

Although the 2008 report references Figures 1, 2 and 3 as existing and proposed dike and road alignments in plan and profile views, these figures were not included in the documentation provided to AMEC. Two cross sections, A-A and B-B, were analyzed in the study. Attached photographs, showing approximate locations of these cross sections, and an attached figure, illustrating the location of borings performed for the analysis, indicate the cross sections of interest, A-A and B-B, appear to have been located between approximate dike Stations 7+50 and 9+00, respectively.

The design parameters used in the stability calculations are shown in Table 11 and are stated to have been based on tests performed on samples collected from the boring log locations. Two road surface options were considered in the study, roller compacted concrete (RCC) and pavement with retaining wall. Stability analysis results are illustrated in Table 12.

Table 11. 2008 McDonough Stability Analysis Soil Parameters

Material	γ (pcf)	C' (psf)	Φ (deg)
Embankment Fill - silt and silty sand	120	120	31
Base Residuum - silty sand	120	60	36
Roller Compacted Concrete	150	21,600	45
Heavy Duty Concrete Pavement	150	21,600	45
Aggregate Base	150	0	50
Ash	95	0	27

Table 12. 2008 McDonough Stability Analysis Summary

Conditions	Calculated FOS (A-A) Approx. Sta 7+50	Calculated FOS (B-B) Approx. Sta 9+00	Required FOS (Minimum)
	RCC Option		
End of Construction/Steady State Seepage	N/A	2.0	1.5
Steady State Seepage with Seismic (@0.12g)	N/A	1.6	1.1
Rapid Drawdown from Normal Pool (assumes only water)	N/A	1.3	1.3
	Pavement with Retaining Wall Option		
End of Construction/Steady State Seepage	1.8*	2.1	1.5
Steady State Seepage with Seismic (@0.12g)	1.4*	1.6	1.1
Rapid Drawdown from Normal Pool (assumes only water)	1.3*	1.3	1.3
	Interim Construction		
End of Construction/Steady State Seepage	1.8	1.9	1.5
Steady State Seepage with Seismic (@0.12g)	1.4	1.5	1.1
Rapid Drawdown from Normal Pool (assumes only water)	1.3	1.3	1.3

*No retaining wall at this location

The 2010 Plant McDonough Stability Analysis for Ash Ponds 1 through 4, prepared by Southern Company Services, Inc., transcribes the results from the 1998 and 2008 stability analyses for Ash Pond 4. No new data for Ash Pond 4 was analyzed or reported in the May 2010 Study.

3.3.5 May 2010 Southern Company Comprehensive Stability Analysis

Southern Company Services completed and provided documentation for the May 2010 Slope Stability Analyses for Ash Pond Dikes 1, 2, 3, and 4 (May 2010 Study), (MCD-API 076). Cross sections modeled in the analyses are illustrated on Figure 4. According to the May 2010 Study, Southern Company's methodology and software use included:

- Slope stability was evaluated using GeoStudio 2007 (Version 7.16, Build 4840), Copyright 1991-2010, GEO-SLOPE International, Ltd.

- Procedures outlined in Duncan and Wright's *Soil Strength and Slope Stability* (2005) for analyzing slope stability using software were generally utilized in the analysis.

- The Morgenstern-Price method was used to analyze stability for each ash pond.

- Failure circles were searched using both the grid and radius and exit and entry methods. Grid and radius reports were reported.

- No short-term "construction" cases were considered during this stability analysis because the dikes were constructed decades ago. Ash Ponds 1, 2, and 3 are full of ash, slope failure of the upstream face is not a possible mode of failure for these dikes.

- The pseudostatic method and Geostudio 2007 software were used to analyze stability under seismic load. The mapped, site-modified, spectral seismic acceleration was used to calculate the pseudostatic acceleration following the procedure described in *Pseudostatic Coefficient for use in Simplified Seismic Slope Stability Evaluation* (2009) by Bray and Travasarou.

- The staged method described by Duncan for stability analysis under rapid drawdown was performed in Geostudio 2007. Ash Ponds 1, 2, and 3 are full of ash, slope failure of the upstream face is not a possible mode of failure for these dikes.

The following criteria and assumptions were described by Southern Company Services in the May 2010 Study:

The 2002 probabilistic earthquake acceleration mapped by the USGS for the vicinity of Plant McDonough is 0.298 for short-period structures on Site Class C soil profile (2% PE/50 years). The corresponding pseudostatic acceleration coefficient (K_h) is 0.095g based on an allowable crest displacement of two inches using the Bray and Travasarou procedure. Previously, a K_h of 0.12 g was used at the site, and this conservative value was used for the analyses in this report.

The 100-year flood elevation mapped by FEMA for the vicinity of Plant McDonough is approximately Elev. 771. The dikes at Ash Pond 2, 3, and 4 are above this 100-year flood elevation; therefore, downstream rapid drawdown is not considered a possible mode of failure for these dikes.

Current required minimum criteria (factors of safety) were taken from US Corps of Engineers Manual EM 1110-2-1902, October 2003. Current minimum criteria for seismic loading taken from the Georgia Department of Natural Resources, Environmental Protection, Rules for Dam Safety.

Four newly constructed piezometers in Ash Pond 1 and seven newly constructed piezometers in Ash Pond 2 provided the recently collected soil data. Southern Company Services completed two of the eleven borings, while a contractor identified as Ranger completed the remainder.

Water elevations within the dikes and the foundation soils were obtained by temporary piezometers that were installed in the dike crest and dike toe of Ash Pond 1 (February and March 2010) and Ash Pond 2 (February 2010).

Following a thorough review of historical field data, as well as recently collected data from March and April of 2010, soil properties, including unit weight, angle of internal friction, and cohesion, for ash, dike and foundation materials used in the stability analyses were selected by Southern Company. Soil properties for Ash Ponds 1, 2, and 3 are provided in Table 13. Calculated factors of safety were reported by Southern Company as shown in Table 14.

Table 13. May 2010 Plant McDonough Stability Analyses Soil Properties

Soil Description	Moist Unit Weight, pcf	Effective Stress Parameters		Total Stress Parameters	
		Cohesion (pcf)	Phi Angle (°)	Cohesion (pcf)	Phi Angle (°)
Ash Pond 1					
Consolidated Ash	90	0	27	--	--
Fill	120	100	28	100	20
Dike-Compacted Fill	125	125	33	200	22
Foundation-Residual Soil	125	50	35	200	20
Partially Weathered Rock	125	0	38	500	22
Ash Pond 2					
Cover-Lean Clay	120	100	20	--	--
Consolidated Ash	90	0	27	--	--
Probable Fill	110	0	29	100	20
Dike-Compacted Fill	125	125	33	200	22
Foundation-Residual Soil	125	50	35	200	20
Partially Weathered Rock	125	0	38	500	22
Ash Pond 3					
Consolidated Ash	90	0	27	--	--
Dike-Compacted Fill	125	110	32	200	22
Foundation-Residual Soil	125	50	35	200	20
Partially Weathered Rock	125	0	38	500	22

Table 14. May 2010 Plant McDonough Stability Analyses Calculated Factors of Safety

Condition	Computed Factor of Safety	Required Minimum Factor of Safety[1]
Ash Pond 1 - Section AP1-A		
Downstream, Steady State	1.6	1.5
Downstream, Seismic	1.2	1.1
Downstream, Rapid Drawdown	1.3	1.3
Ash Pond 1 - Section AP1-B		
Downstream, Steady State	1.4	1.5
Downstream, Seismic	1.1	1.1
Downstream, Rapid Drawdown	1.2	1.3
Ash Pond 2 - Section AP2-A		
Downstream, Steady State	2.2	1.5
Downstream, Seismic	1.7	1.1
Ash Pond 2 - Section AP2-B		
Downstream, Steady State	1.8	1.5
Downstream, Seismic	1.4	1.1
Ash Pond 3 - Section AP3-A		
Downstream, Steady State	1.9	1.5
Downstream, Seismic	1.4	1.1

Notes: 1 - The current required minimum criteria (factors of safety) were taken from US Corps of Engineers Manual EM 1110-2-1902, October 2003. Current minimum criteria for seismic loading taken from the Georgia Department of Natural Resources, Environmental Protection, Rules for Dam Safety.

The results of the 1998 and 2008 studies were transcribed to the May 2010 Study. No new data for Ash Pond 4 was analyzed or reported.

All factors of safety were determined to be greater than the minimum required by GA EPD and US Corps of Engineers stability criteria except for Ash Pond 1, cross section AP1-B. The report comments on this less than minimum factor of safety, stating that "in this area, the dike is slightly steeper than the design (1.8H:1V compared to 2H:1V). However, EM1110-2-1902 indicates existing dams may be considered safe with less than the minimum design criteria on the basis of previous history. There has been no evidence of stability problems of the Ash Pond 1 dikes since construction in 1960."

The May 2010 Study reports an effective phi angle of 27 degrees for the consolidated ash in Ash Pond 2. However, the borings and CPT soundings indicated that the ash is very weak. The reported effective phi angle does not appear to be consistent with the results from the borings and CPT soundings. This issue may require further clarification and possibly examination of the raw test data.

Although optimizations of the failure surfaces for non-circular surfaces provides a more conservative estimate of the minimum factor of safety, in general, the slope stability analyses calculations performed for the May 2010 Study were limited to circular failure surfaces. Likewise, the use of cohesion in effective stress slope stability analyses is not fully endorsed by the state of the practice in geotechnical engineering. Effective soil cohesion can vary depending upon environmental and state of stress variations.

3.4 Foundation Conditions

Ash Pond 2 is the only impoundment that was constructed by a process where the dike was formed by cutting existing material from the proposed impoundment interior and compacting in the dike, thus creating a combination incised and diked impoundment. Dikes for Ash Pond 1, 3, and 4 were constructed of native soil. The soils included clayey silts, sandy clays and silty clays.

Based upon the design documents that were reviewed, the foundation preparation and conditions appear to have been satisfactory for all four ash ponds. The documents indicate that the foundation area was properly stripped and the deleterious material (alluvium) was removed prior to constructing the embankments.

3.5 Operations, Maintenance, Instrumentation and Inspections

3.5.1 Operation and Maintenance

SC Generation Hydro Services performs quarterly safety and surveillance inspections of the berms at Plant McDonough and provides summary reports to Georgia Power. AMEC was provided copies of these reports from the 2005 First Quarter Report through the 2009 Fourth Quarter Report (11 total), with the exception of the following: Second quarter report 2005, First, Second, Third Quarter report 2006, First, Second and Fourth Quarter report 2007, and Second Quarter report 2008 and 2009. The range of data reviewed represents four years of operation.

According to the reports, there have not been any safety issues that have occurred at the plant in the past four years of operation. Review of these reports indicates that Plant McDonough is operated and maintained well. The reports and any maintenance recommendations are clearly written and typically shown as addressed on the following quarterly report discussion of past recommendations. The facility has occasional instances of minor slope sloughing, excessive vegetation, and maintenance for the 90-inch diversion tunnel but typically only recommend routine maintenance. The site visit and observation performed by AMEC in April 2010 showed no major operational or maintenance issues that needed to be addressed.

3.5.2 Instrumentation

AMEC understands that data from the piezometers installed in Ash Ponds 1, 2, 3, and 4 will provide additional information that facility personnel will use to guide operation and maintenance of the facility. Currently, Ash Pond 1 contains a total of 5 temporary piezometers which were installed in support of the 2009 and 2010 slope stability analysis. Three piezometers were installed in Ash Pond 2 during the same 2010 slope stability analysis. Three piezometers were installed in Ash Pond 3 during the 2009 study. In addition to 24 piezometers at Ash Pond 4, the pond contains two weirs, which are also monitored on a monthly basis for flow volumes. Plant personnel plan to collect data from the piezometers on a monthly basis. There is no other instrumentation at the facility for pond monitoring.

3.5.3 Inspections

Although Ash Ponds 1, 2, and 3 are considered Category II structures as defined in the Dam Safety Rule, their status, according to GA EPD is currently unclassified. The state does, however, reevaluate each Category II dam every 5 years to determine if adjacent downstream development has increased to a level that would prompt a change in the assigned dam classification category.

Ash Pond 4 is considered a Category I dam, which means that the dam is permitted and monitored periodically. Inspections of Ash Pond 4 by GA EPD, Safe Dams Program were provided for 2006, 2007, 2008, 2009, and 2010. Review of these inspection reports indicate that Plant McDonough is regularly maintained. The reports comment upon occasional instances of sloughing, bare areas, wet areas, and excessive vegetation. The past five years of inspections indicate no major operational or maintenance issues.

4.0 COMMENTS AND RECOMMENDATIONS

4.1 Acknowledgement of Management Unit Conditions

I certify that the management units referenced herein (Ash Ponds 1, 2, 3, and 4) were personally assessed by me and was found to be in the following condition: **Satisfactory**.

A satisfactory management unit is described as having no existing or potential management unit safety deficiencies that are recognized. Acceptable performance is expected under all applicable loading conditions (static, hydraulic, seismic) in accordance with the applicable criteria. Minor maintenance items may be required.

Additional Information regarding recommendations for instrumentation and analyses can be found in Sections 4.2 through 4.4.

4.2 Hydrologic and Hydraulic Recommendations

Plant McDonough's Ash Ponds 1, 2, and 3 are not classified by state of Georgia EPD. Ash Pond 4, classified by EPD as Category 1, has a wet storage area and is hydraulically connected (downstream of) AP3. AMEC recommends that Georgia Power determine what rainfall event is appropriate for each ash pond and then evaluate if each ash pond can safely contain or pass the inflow due to the design storm.

4.3 Geotechnical and Stability Recommendations

AMEC recommends that clarification of how the engineering soil strength parameters were determined from the testing laboratory data. AMEC recommends that the stability analyses include design storm peak/surcharge stage water levels that reflect appropriate phreatic surfaces due to pre-saturation by appropriate antecedent precipitation and the limited outflow capacity of the pond. Likewise, the stability analyses should consider all critical stages during the life of the facility, such as maximum pool area and surcharge due to maximum ash stack storage height, as well as likely loading combinations (maximum ash stack storage and earthquake or maximum pool area and design storm inflow). Furthermore, the previous analyses limit the failure surfaces to circular surfaces; AMEC recommends that the slope stability analyses include slip surface optimization to allow for noncircular failure surfaces. Results for stability analyses for Ash Pond I, cross section AP1-B fail to meet the minimum safety factors for rapid drawdown and steady state conditions for the downstream slope. Management or construction modifications should be investigated to improve the dike stability in this area.

The west flank of Ash Pond 3 is near a public thoroughfare (Maner Rd SE) and, at the time of the site visit, it was estimated that failure of the dike on that side would not result in loss of human life and only affect areas within the Georgia Power facility. However, due to the proximity of the roads and businesses, as well as an apartment complex further downstream, it is AMEC's opinion that additional analyses are warranted to verify the assumptions made during the site visit. Dam break analysis using GIS and modern computer modeling techniques could be employed to conservatively estimate the inundation area and to indicate possible impacted structures.

4.4 Inspection Recommendations

AMEC has reviewed provided information and inspection records and determined that Georgia Power has adequate inspection practices. We recommend that Plant McDonough continue the current inspection program and practices.

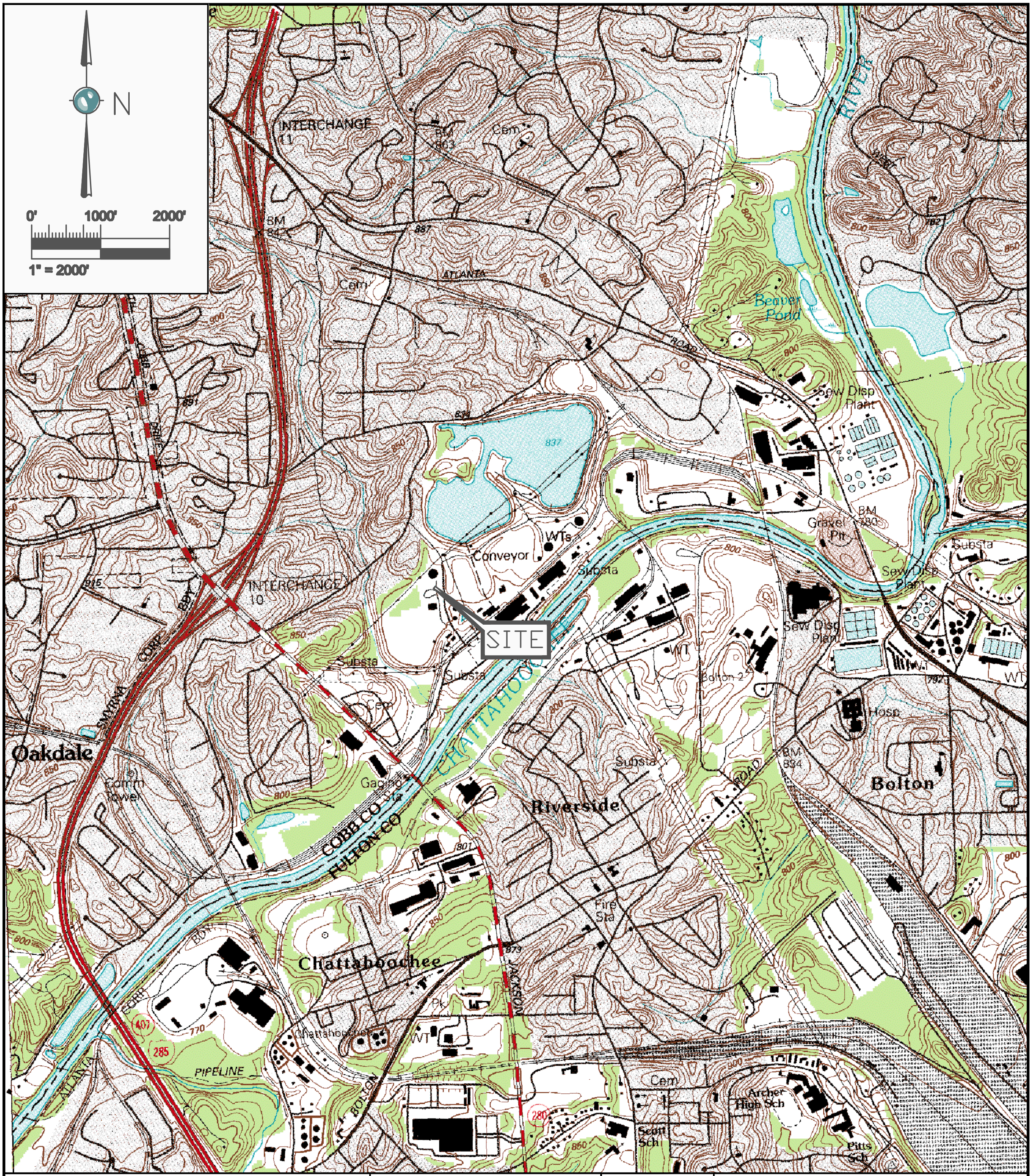
5.0 CLOSING

This report is prepared for the exclusive use of the Environmental Protection Agency for the site and criteria stipulated herein. This report does not address regulatory issues associated with storm water runoff, the identification and modification of regulated wetlands, or ground water recharge areas. Further, this report does not include review or analysis of environmental or regional geo-hydrologic aspects of the site, except as noted herein. Questions or interpretation regarding any portion of the report should be addressed directly by the geotechnical engineer.

Any use, reliance on, or decisions to be made based on this report by a third party are the responsibility of such third parties. AMEC accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The conclusions and recommendations given in this report are based on visual observations, our partial knowledge of the history of Plant Hammond impoundments, and information provided to us by others. This report has been prepared in accordance with normally accepted geotechnical engineering practices. No other warranty is expressed or implied.

FIGURES



AMEC Earth & Environmental

690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, Ky 40299
(502) 267-0700

CLIENT LOGO

CLIENT: ENVIRONMENTAL PROTECTION AGENCY

PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS

DWN BY: CAE

DATUM:

DATE: 5/19/10

TITLE:

GEORGIA POWER
PLANT MCDONOUGH SMYRNA, GA
SITE LOCATION MAP

CHK'D BY: MS

REV. NO.:

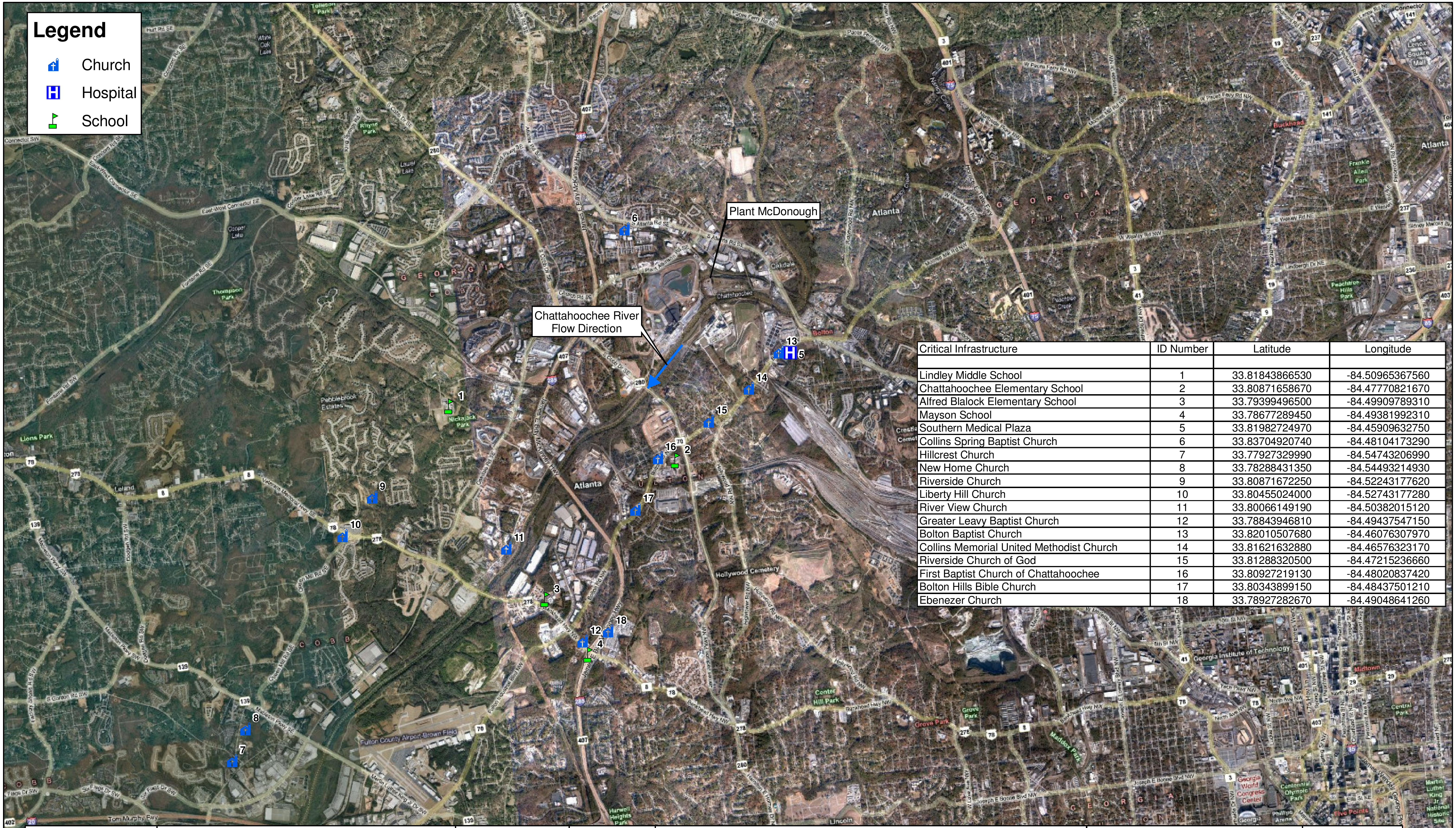
PROJECT NO: 3-2106-0174.0100

PROJECTION:

SCALE: AS SHOWN

FIGURE No. 1

ENVIRONMENTAL PROTECTION AGENCY		DWN BY: ATJ DWN BY: MS	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. No.: A Date: 5-26-2010
AMEC Earth & Environmental 690 Commonwealth Business Center 11003 Bluegrass Parkway Louisville, KY 40299		Datum: NAD 83 Projection: Albers Scale: As Shown	GEORGIA POWER PLANT MCDONOUGH SMYRNA, GA SITE PLAN	Project No: 3-2106-0174-0100 Figure No: 2



Critical Infrastructure	ID Number	Latitude	Longitude
Lindley Middle School	1	33.81843866530	-84.50965367560
Chattahoochee Elementary School	2	33.80871658670	-84.47770821670
Alfred Blalock Elementary School	3	33.79399496500	-84.49909789310
Mayson School	4	33.78677289450	-84.49381992310
Southern Medical Plaza	5	33.81982724970	-84.45909632750
Collins Spring Baptist Church	6	33.83704920740	-84.48104173290
Hillcrest Church	7	33.77927329990	-84.54743206990
New Home Church	8	33.78288431350	-84.54493214930
Riverside Church	9	33.80871672250	-84.52243177620
Liberty Hill Church	10	33.80455024000	-84.52743177280
River View Church	11	33.80066149190	-84.50382015120
Greater Leavy Baptist Church	12	33.78843946810	-84.49437547150
Bolton Baptist Church	13	33.82010507680	-84.46076307970
Collins Memorial United Methodist Church	14	33.81621632880	-84.46576323170
Riverside Church of God	15	33.81288320500	-84.47215236660
First Baptist Church of Chattahoochee	16	33.80927219130	-84.48020837420
Bolton Hills Bible Church	17	33.80343899150	-84.48437501210
Ebenezer Church	18	33.78927282670	-84.49048641260

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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

DRAWN BY: ATJ
CHK'D BY: MS
DATUM: NAD83
PROJECTION: Albers
SCALE: AS SHOWN
DATE: 5/21/2010

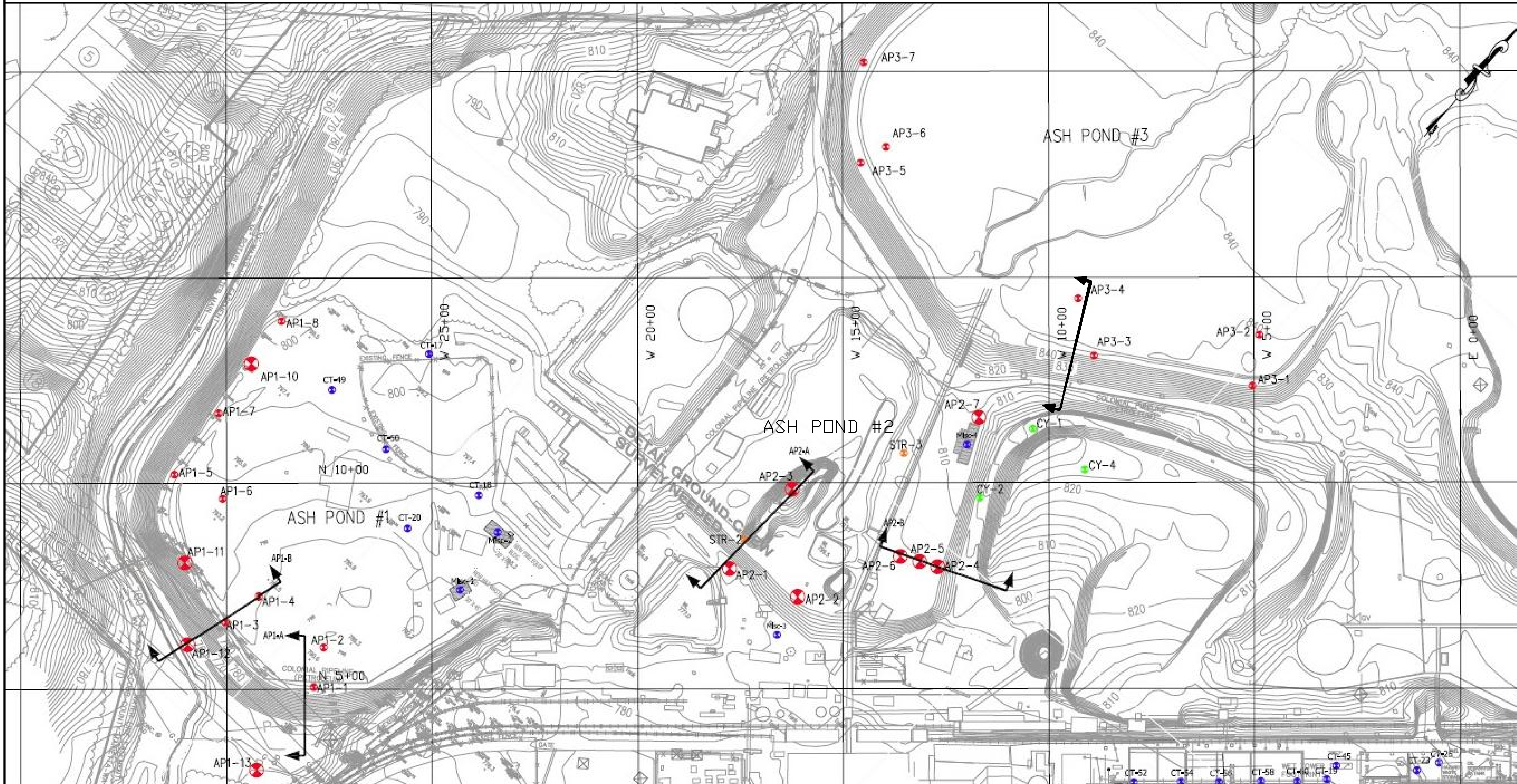
ASSESSMENT OF DAM SAFETY OF
COAL COMBUSTION SURFACE IMPOUNDMENTS

GEORGIA POWER
PLANT MCDONOUGH SMYRNA, GA
CRITICAL INFRASTRUCTURE

N
0 1 Miles
0 1 Kilometers

Notes: Critical infrastructure data provided by ESRI

FIGURE
3



NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT

0' 125' 250' 375'

1" = 250'

CLIENT LOGO

CLIENT: ENVIRONMENTAL PROTECTION AGENCY

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Louisville, Ky 40299
(502) 267-0700

DWN BY:	CAE
CHK'D BY:	MS
DATUM:	
PROJECTION:	
SCALE:	AS SHOWN

PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS

TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH PONDS 1, 2 AND 3 PIEZOMETER LOCATIONS AND 2010 STABILITY ANALYSIS CROSS SECTIONS

DATE:	6/2/10
PROJECT NO:	3-2106-0174.0100
REV. NO.:	
FIGURE No.	4

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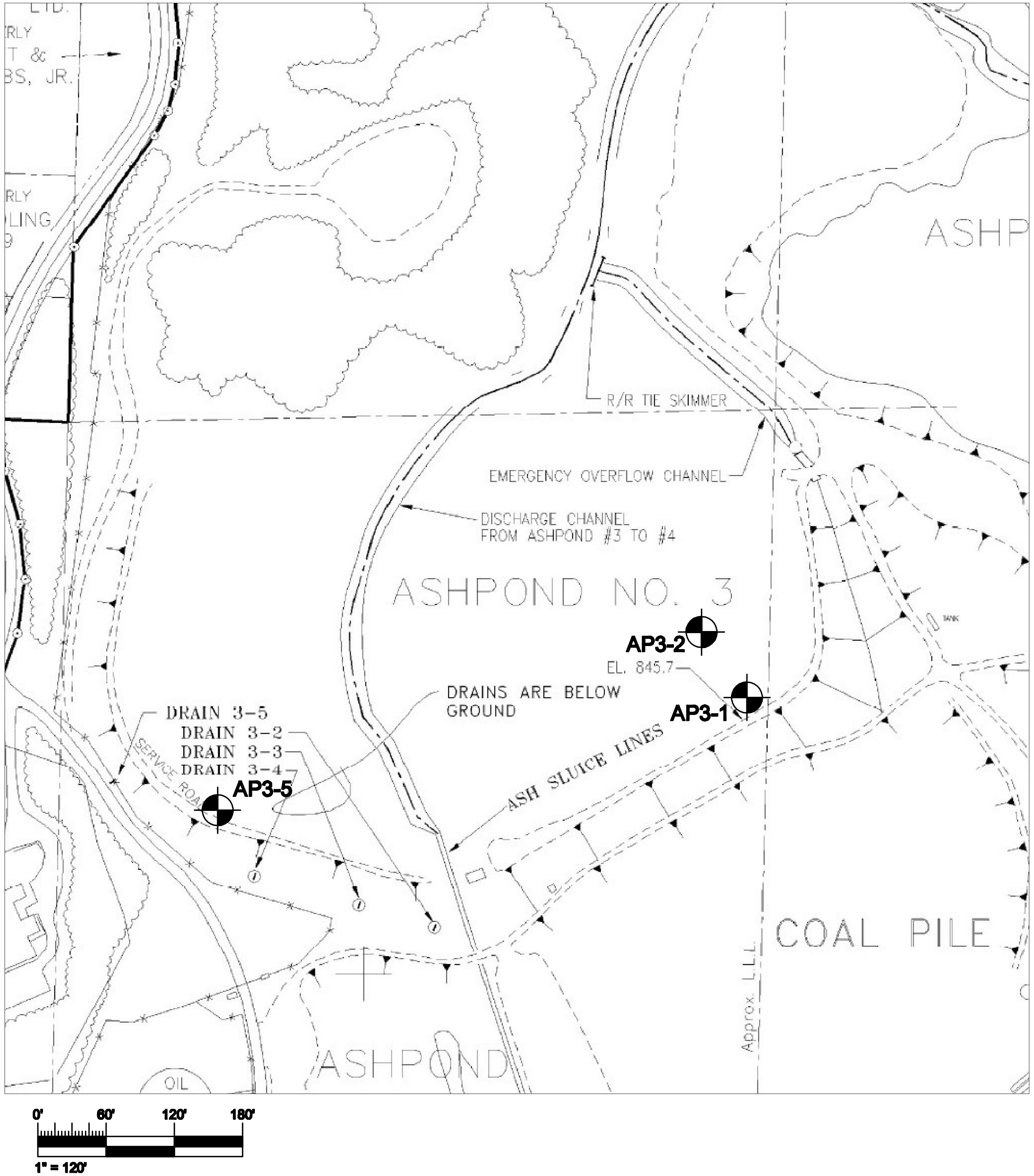

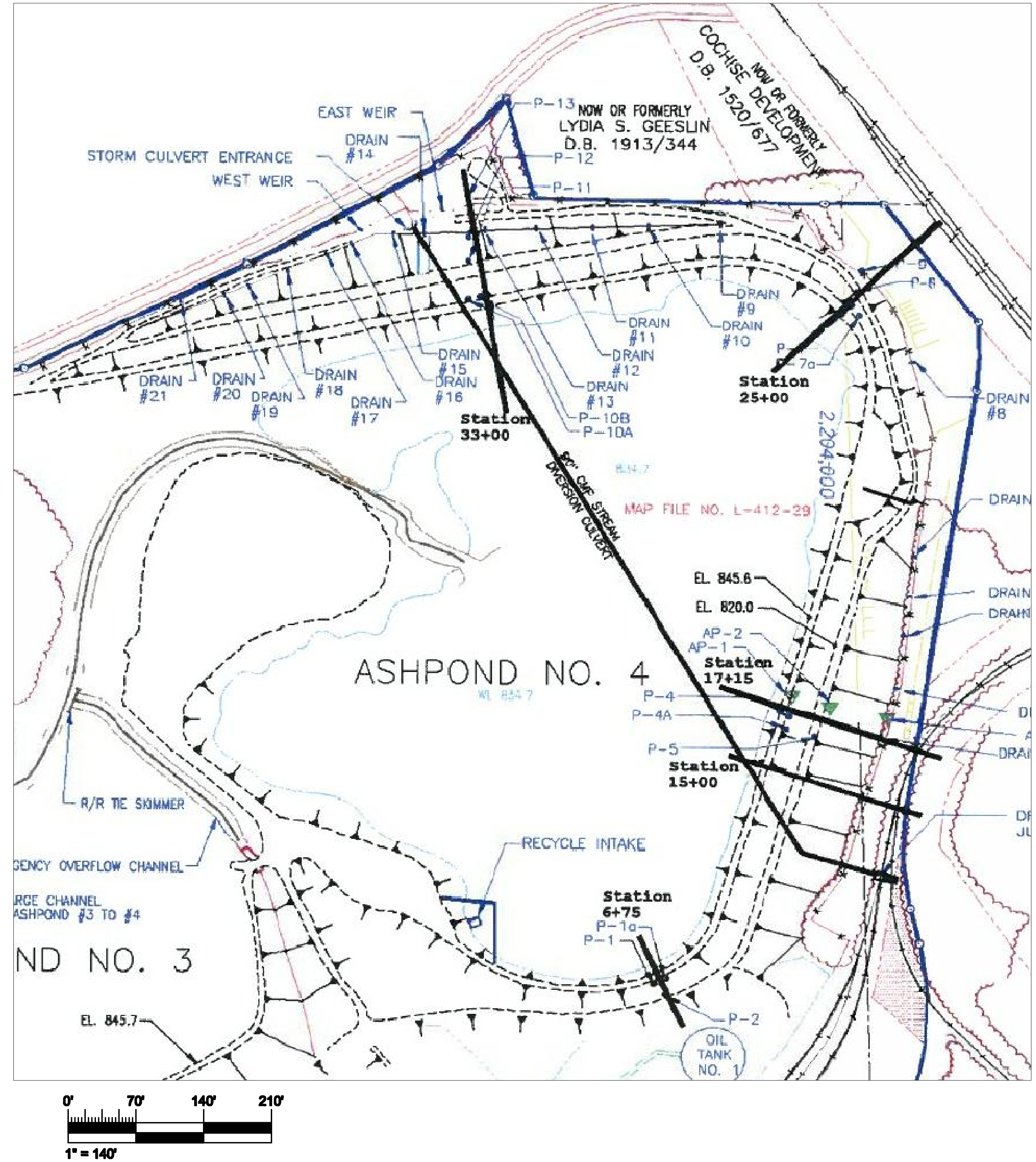

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL REPORT

CLIENT LOGO	
CLIENT:	ENVIRONMENTAL PROTECTION AGENCY
AMEC Earth & Environmental	690 Commonwealth Center, 11003 Bluegrass Parkway, Louisville, Ky 40299, (502) 267-0700
DWN BY:	CAE
CHK'D BY:	MS
DATUM:	
PROJECTION:	
SCALE:	AS SHOWN
PROJECT	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS
TITLE	GEORGIA POWER, PLANT MCDONOUGH, SMYRNA, GA. ASH PONDS 3 AND 4 PIEZOMETER AND DRAIN LOCATIONS AND 2010 STABILITY ANALYSIS ASH POND 4 CROSS SECTIONS
DATE:	6/2/10
PROJECT NO:	3-2106-0174.0100
REV. NO.:	
FIGURE No.	5

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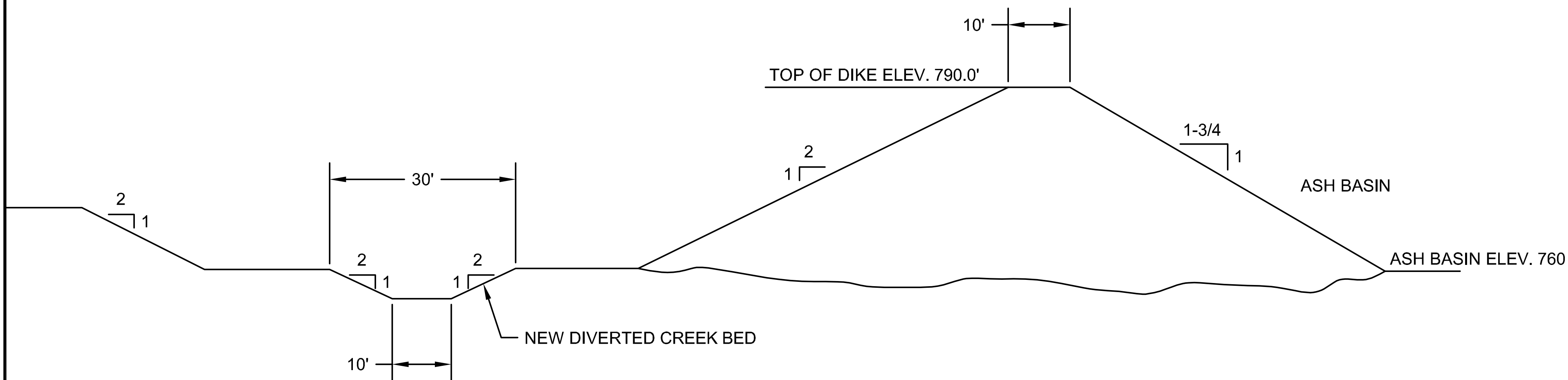
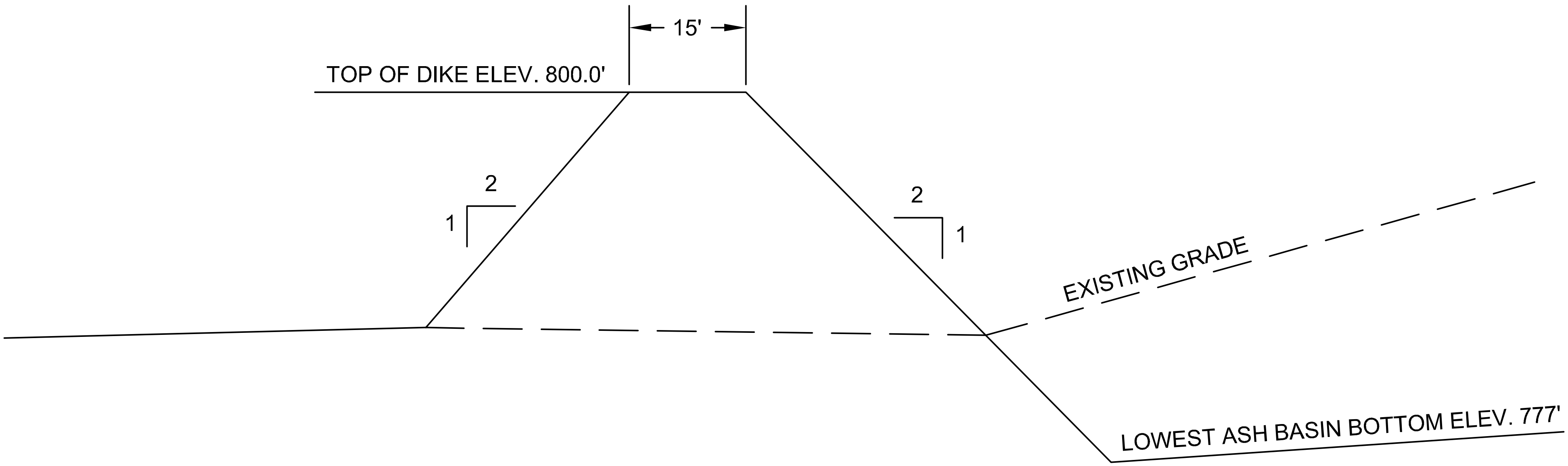
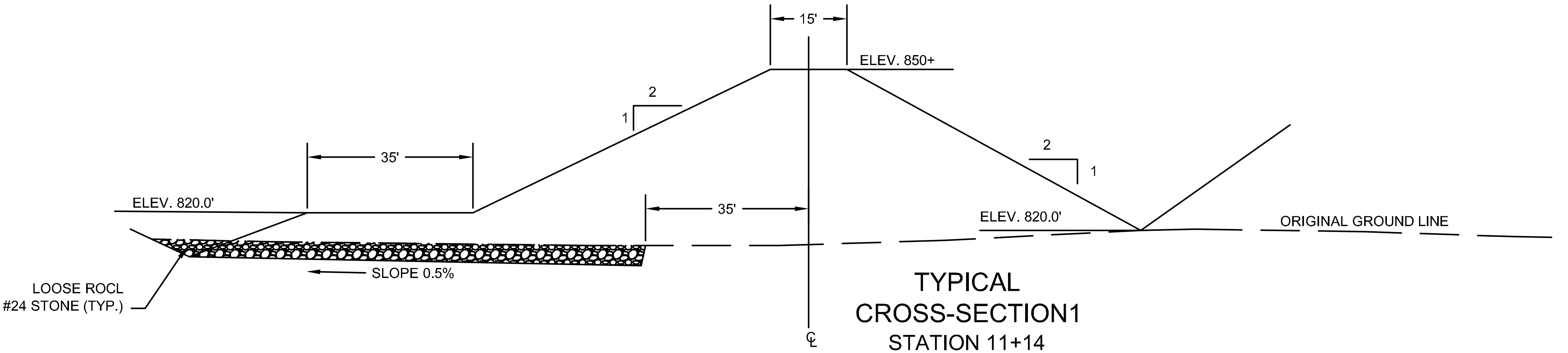


* BASED ON MAY 1960 DESIGN DRAWINGS; MAY 2009 DIKE CREST HIGH POINT IS ELEVATION 800'

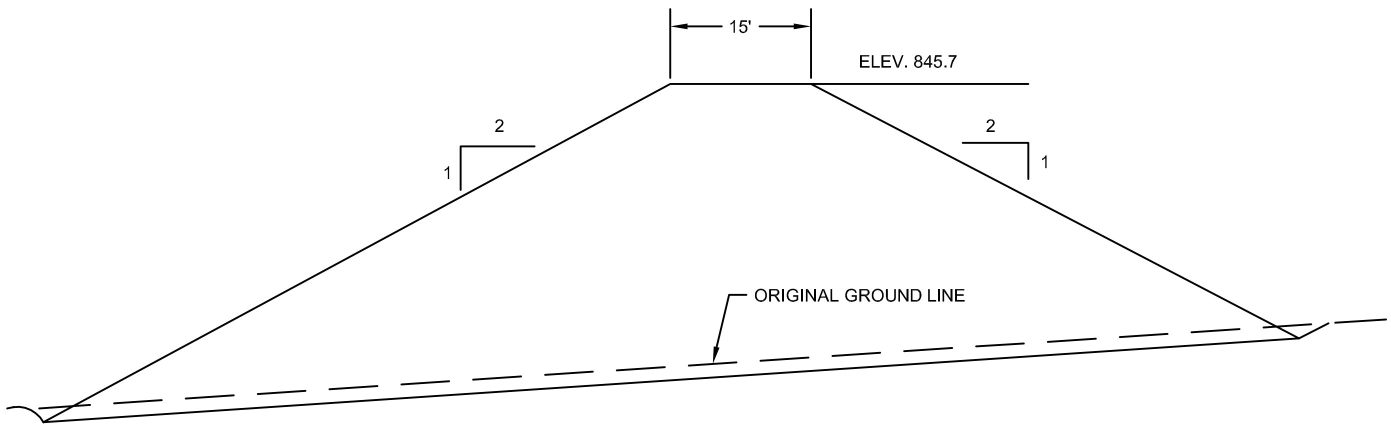
CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	DWN BY: CAE CHK'D BY: MS	PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. NO.: A DATE: 6/2/10
AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	DATUM: PROJECTION: SCALE: NTS	TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. TYPICAL CROSS-SECTION MCDONOUGH ASH POND 1	PROJECT NO: 3-2106-0174.0100 FIGURE No. 6



CLIENT LOGO	CLIENT: ENVIRONMENTAL PROTECTION AGENCY	DWN BY: CAE	PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. NO.: A
		CHK'D BY: MS		DATE: 6/2/10
AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700		DATUM:	TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. TYPICAL CROSS-SECTION MCDONOUGH ASH POND 2	PROJECT NO: 3-2106-0174.0100
		PROJECTION:		FIGURE No. 7
		SCALE: NTS		



TYPICAL
CROSS-SECTION1
STATION 11+14



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		CHK'D BY: MS		DATE: 6/2/10
AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	DATUM:	TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. TYPICAL CROSS-SECTIONS A-A & E-E MCDONOUGH ASH POND 3	PROJECT NO: 3-2106-0174.0100
		PROJECTION:		FIGURE No. 8
		SCALE: NTS		

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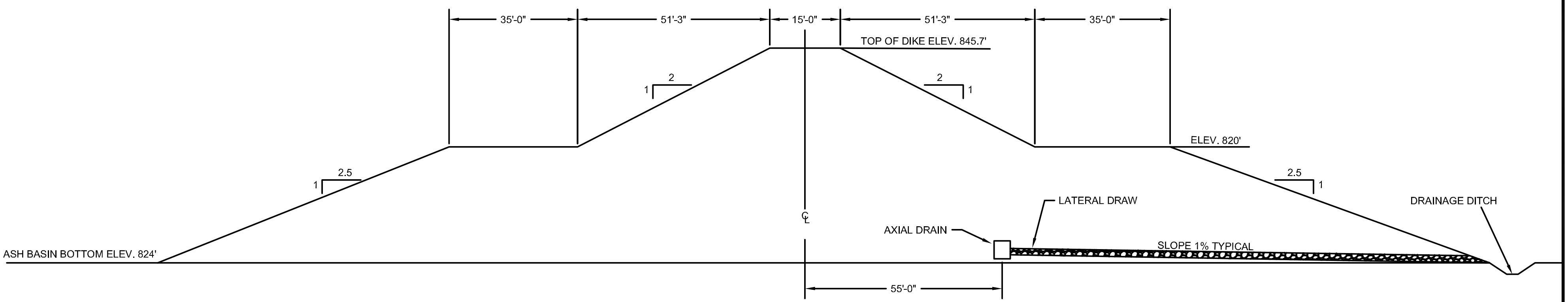

CLIENT LOGO

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DWN BY: CAE
CHK'D BY: MS
DATUM:
PROJECTION:
SCALE: NTS

PROJECT
ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS

TITLE
GEORGIA POWER
PLANT MCDONOUGH, SMYRNA, GA.
TYPICAL CROSS-SECTIONS
MCDONOUGH ASH POND 4

REV. NO.: A
DATE: 6/2/10
PROJECT NO: 3-2106-0174.0100
FIGURE No. 9

APPENDIX A
Waste Impoundment Inspection Forms

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name: Plant McDonough	Date: 4/28/10
Unit Name: Ash Pond #1	Operator's Name: Georgia Power
Unit I.D.: Ash Pond #1	Hazard Potential Classification: High Significant Low
Inspector's Name: Doug Tate, P.E., Mary Swiderski	

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Quarterly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	N/A		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	785'		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	N/A		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	790'		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	N/A		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation, stumps, topsoil in area where embankment fill will be placed)?	X		From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	X		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?	N/A		"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?		X	Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?		X	22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?		X
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
2/13	No pool in impoundment.

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # GA0001431

INSPECTOR Doug Tate, P.E. Mary Swiderski

Date 4/28/10

Impoundment Name Plant McDonough – Ash Pond #1
Impoundment Company Georgia Power
EPA Region 4
State Agency (Field Office) Address Georgia Department of Natural Resources
MLK Jr. Dr., Suite 1152 East Tower
Atlanta, GA 30334

Name of Impoundment Ash Pond #1
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update ______

	Yes	No
Is impoundment currently under construction?		X
Is water or ccw currently being pumped into the impoundment?		X

IMPOUNDMENT FUNCTION: Inactive- covered. Previously (late 1960's) received liquid-bourne materials.

Nearest Downstream Town : Name Smyrna,
Distance from the impoundment 0 miles
Impoundment
Location: Longitude -84 Degrees 28 Minutes 49 Seconds
Latitude 33 Degrees 49 Minutes 24 Seconds
State GA County Cobb

Does a state agency regulate this impoundment? YES ______ NO X

If So Which State Agency?______

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

______**LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

__X__**LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those 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 owner's property.

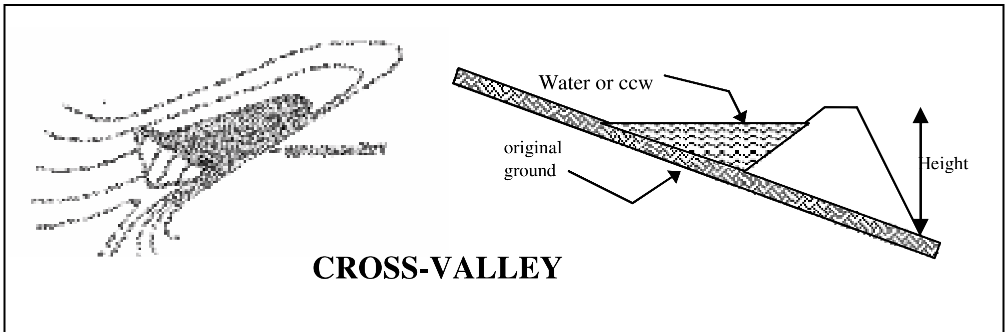
______**SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

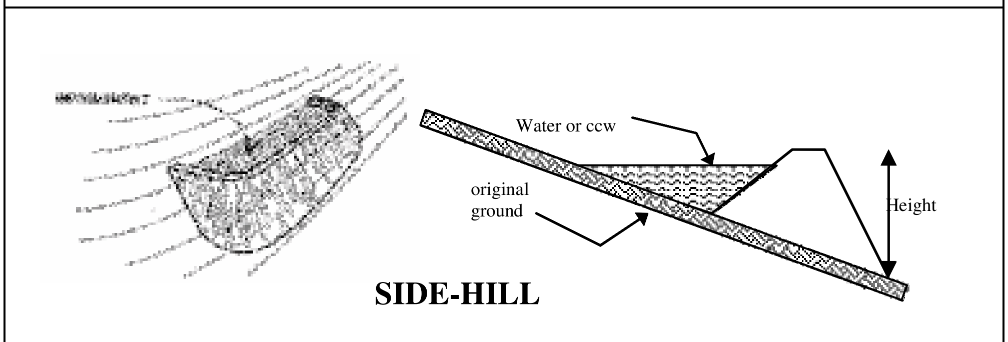
______**HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

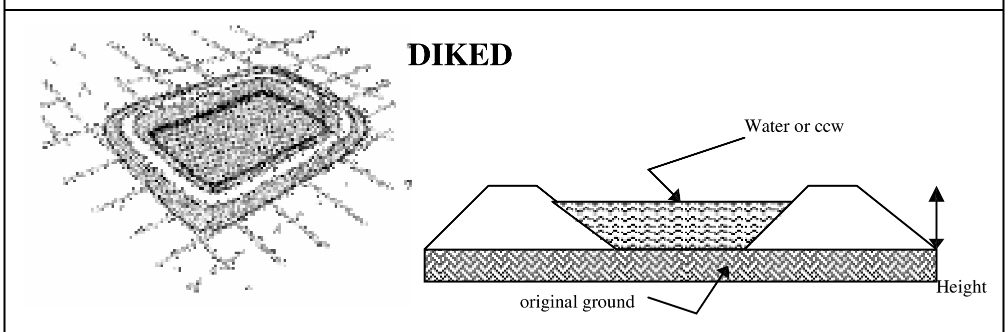
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

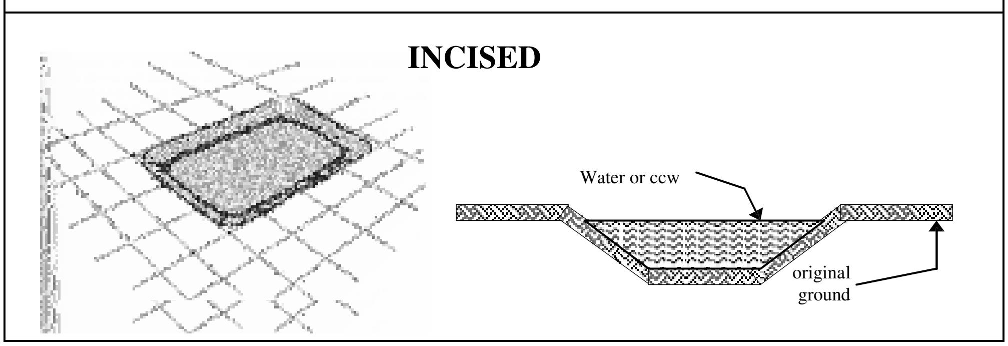
- CCW material in pond is covered and has drained for decades, surface of impoundment is used for lay-down yard,
- Access roads adjacent to pond would act as a catchment and barrier to the Chattahoochee River and surrounding community,
- Damage from failure limited primarily to owners property,
- No probable loss of human life, and
- Economic and/or environmental losses would be expected to be low.

CONFIGURATION:









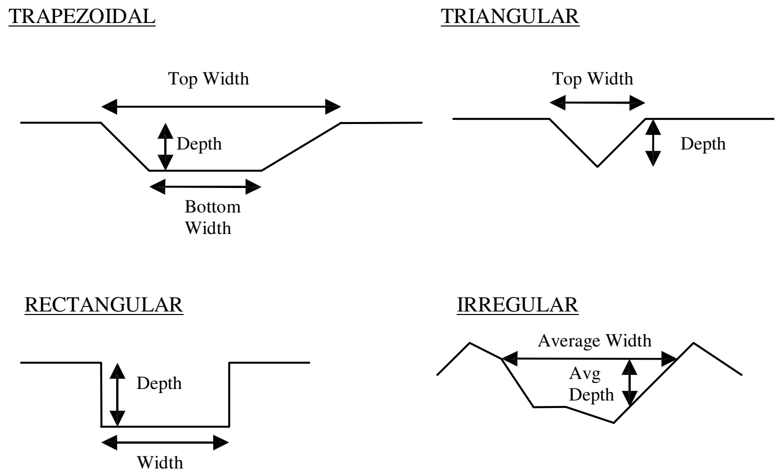
______Cross-Valley
__X__Side-Hill
______Diked
______Incised (form completion optional)
______Combination Incised/Diked

Embankment Height ___30_____feet   Embankment Material Earthen Mtls.____
Pool Area 25.3 (no water present) acres   Liner __N/A______________________
Current Freeboard __~5'________ feet   Liner Permeability __N/A____________

TYPE OF OUTLET (Mark all that apply)

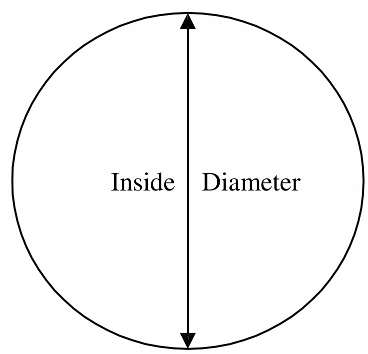
_N/A__Open Channel Spillway
______Trapezoidal
______Triangular
______Rectangular
______Irregular

______depth
______bottom (or average) width
_____top width



_Primary___Outlet

_36”__inside diameter



Material
__X___corrugated metal
______welded steel
______concrete
______plastic (hdpe, pvc, etc.)
______other (specify) ______________________

Is water flowing through the outlet? YES ___X____ NO _______

______No Outlet

______Other Type of Outlet (specify) ____________________________________

The Impoundment was Designed By _Owner’s Chief Engineer (PE)_____________
____

Has there ever been a failure at this site? YES ___________NO ____X______

If So When? ____________________________

If So Please Describe : ____

Has there ever been significant seepages at this site? YES ________NO ___X___

If So When? ______________________________

IF So Please Describe: ____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES ________NO ___X___

If so, which method (e.g., piezometers, gw pumping,...)? ____________________

If so Please Describe : ____________________

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name: Plant McDonough | Date: 4/28/10

Unit Name: Ash Pond #2 | Operator's Name: Georgia Power

Unit I.D.: Ash Pond #2 | Hazard Potential Classification: High Significant Low

Inspector's Name: Doug Tate, P.E., Mary Swiderski

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Quarterly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	N/A		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	798' +/-		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	N/A		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	800'		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?		X	Is water exiting outlet flowing clear?	N/A	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation, stumps, topsoil in area where embankment fill will be placed)?	X		From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	X		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?		X	Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?		X	22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?		X
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
2	No pool.
20	No water exiting outlet.

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # GA0001431

Date 4/28/10

INSPECTOR Doug Tate, P.E. Mary Swiderski

Impoundment Name Plant McDonough – Ash Pond #2
Impoundment Company Georgia Power
EPA Region 4
State Agency (Field Office) Address Georgia Department of Natural Resources
MLK Jr. Dr., Suite 1152 East Tower
Atlanta, GA 30334

Name of Impoundment Ash Pond #2
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update ______

	Yes	No
Is impoundment currently under construction?		X
Is water or ccw currently being pumped into the impoundment?	X	

IMPOUNDMENT FUNCTION: Dewatering Facility for bottom ash

Nearest Downstream Town : Name Smyrna,
Distance from the impoundment 0 miles
Impoundment
Location: Longitude -84 Degrees 28 Minutes 40 Seconds
Latitude 33 Degrees 49 Minutes 30 Seconds
State GA County Cobb

Does a state agency regulate this impoundment? YES ______ NO X

If So Which State Agency?______

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

______**LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

__X__**LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those 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 owner's property.

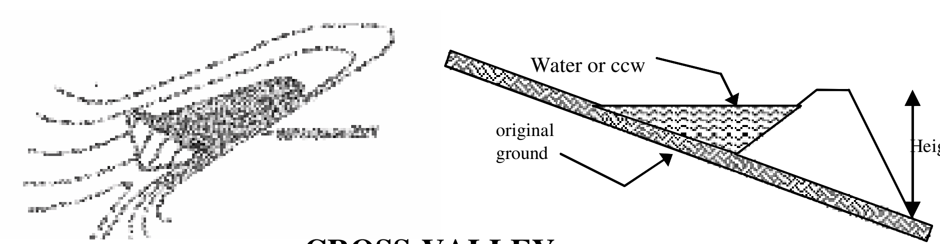
______**SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

______**HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

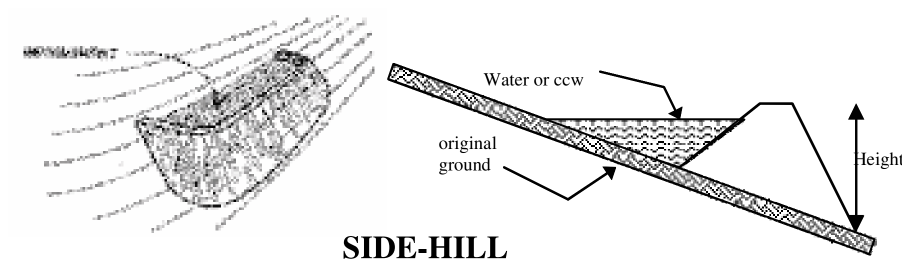
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

- Loss of life not probable due to pond location relative to majority of personnel on site.
- Due to location of Ash pond #2 within the plant, damage would primarily be limited to owner's property. Plant would be able to continue running for up to three days before removal of ccw is required. Additionally, pumps would be able to re-direct ccw to Ash Pond #3 if necessary.

CONFIGURATION:

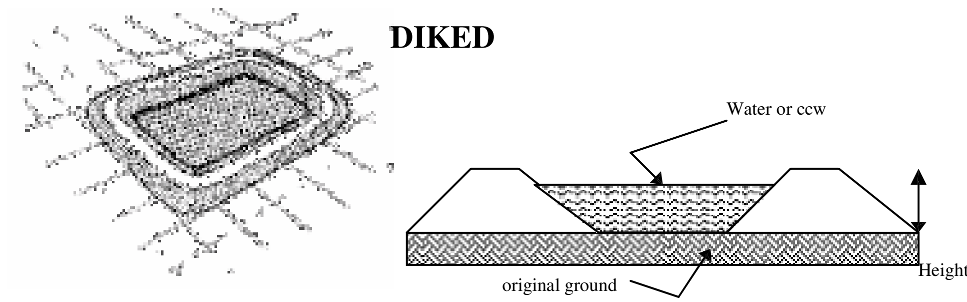


CROSS-VALLEY

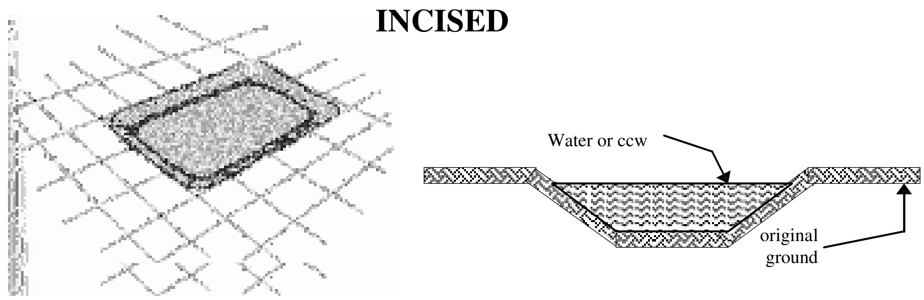


SIDE-HILL

DIKED



INCISED



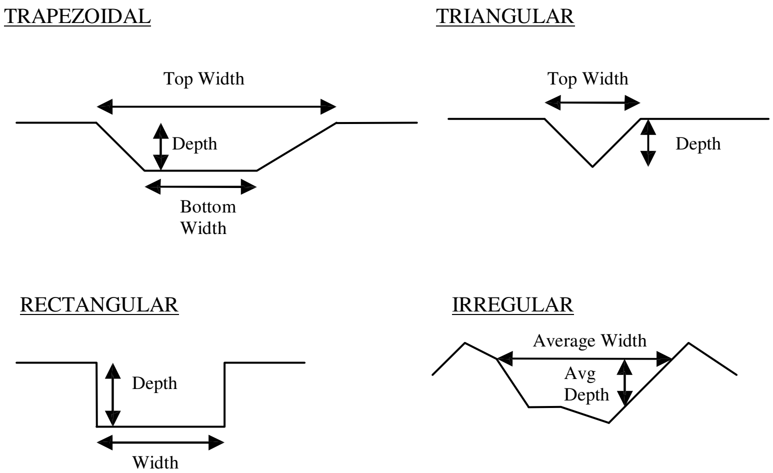
______Cross-Valley
__X__Side-Hill
______Diked
__X__Incised (form completion optional)
______Combination Incised/Diked

Embankment Height ___16_____feet Embankment Material Earthen Mtls.____
Pool Area ____6.5__________ acres Liner __N/A______________________
Current Freeboard __2'________ feet Liner Permeability __N/A____________

TYPE OF OUTLET (Mark all that apply)

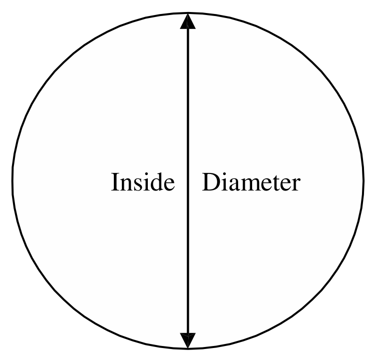
_N/A_ Open Channel Spillway
______Trapezoidal
______Triangular
______Rectangular
______Irregular

______depth
______bottom (or average) width
______top width



_Emergency_____Outlet

_36”__inside diameter



Material
_X__corrugated metal
______welded steel
______concrete
______plastic (hdpe, pvc, etc.)
______other (specify) ______________________

Is water flowing through the outlet? YES _______ NO __X___

______No Outlet

______Other Type of Outlet (specify) ________________________________

The Impoundment was Designed By _Owner’s Chief Engineer (PE)____________
____

Has there ever been a failure at this site? YES ___________NO ____X______

If So When? ____________________________

If So Please Describe : ____

Has there ever been significant seepages at this site? YES ________NO __X___

If So When? ____________________________

IF So Please Describe: ____________________________

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES ________NO ___X___

If so, which method (e.g., piezometers, gw pumping,...)? ____________________

If so Please Describe : ____________________

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name: Plant McDonough	Date: 4/28/10
Unit Name: Ash Pond #3	Operator's Name: Georgia Power
Unit I.D.: Ash Pond #3	Hazard Potential Classification: High Significant $\boxed{\text{Low}}$
Inspector's Name: Doug Tate, P.E., Mary Swiderski	

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Quarterly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	N/A		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	847.5		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	N/A		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	844		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?		X	Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?	X		From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?		X	From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?		X	Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?		X	22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?		X
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
2	No pool impounded.
12	No Trash rack in place over primary spillway

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # GA0001431 INSPECTOR Doug Tate, P.E. Mary Swiderski

Date 4/28/10

Impoundment Name Plant McDonough – Ash Pond #3
Impoundment Company Georgia Power
EPA Region 4
State Agency (Field Office) Address Georgia Department of Natural Resources
MLK Jr. Dr., Suite 1152 East Tower
Atlanta, GA 30334

Name of Impoundment Ash Pond #3
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update ______

	Yes	No
Is impoundment currently under construction?		X
Is water or ccw currently being pumped into the impoundment?	X	

IMPOUNDMENT FUNCTION: Receives liquid borne waste during sluicing operations for fly ash; ccw flow directly into Pond #4 without impounding. Also serves as dry-ash stack storage.

Nearest Downstream Town : Name Smyrna,
Distance from the impoundment 0 miles
Impoundment
Location: Longitude -84 Degrees 28 Minutes 36 Seconds
Latitude 33 Degrees 49 Minutes 39 Seconds
State GA County Cobb

Does a state agency regulate this impoundment? YES ______ NO X

If So Which State Agency?______

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

______**LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

__X__**LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those 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 owner's property.

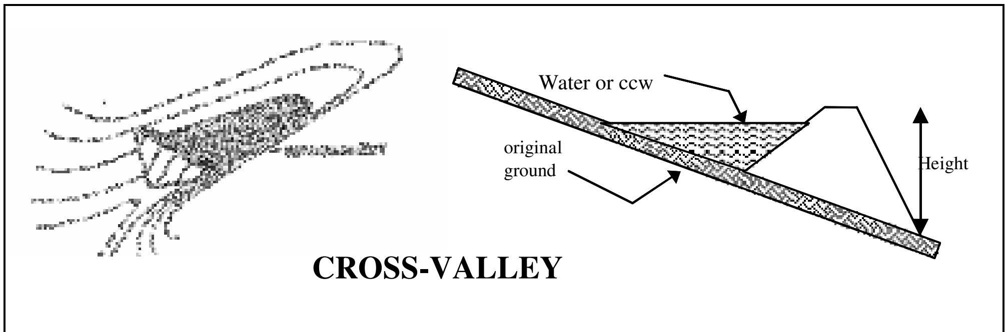
______**SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

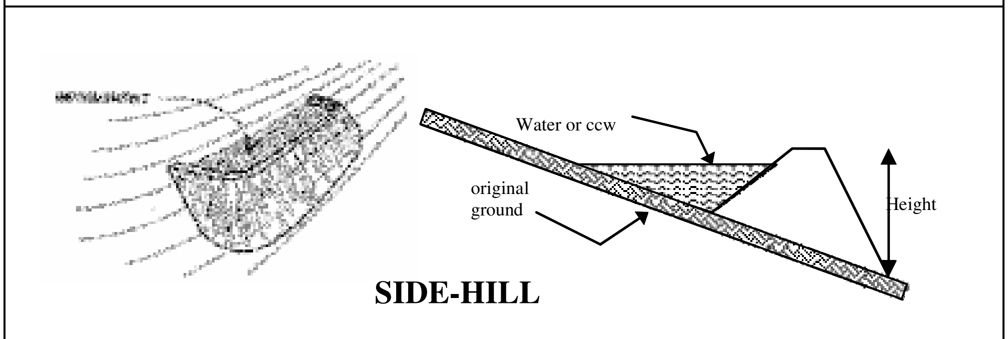
______**HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

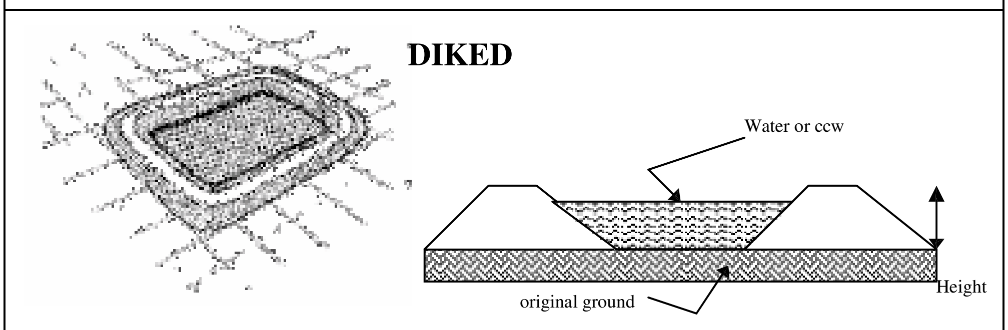
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

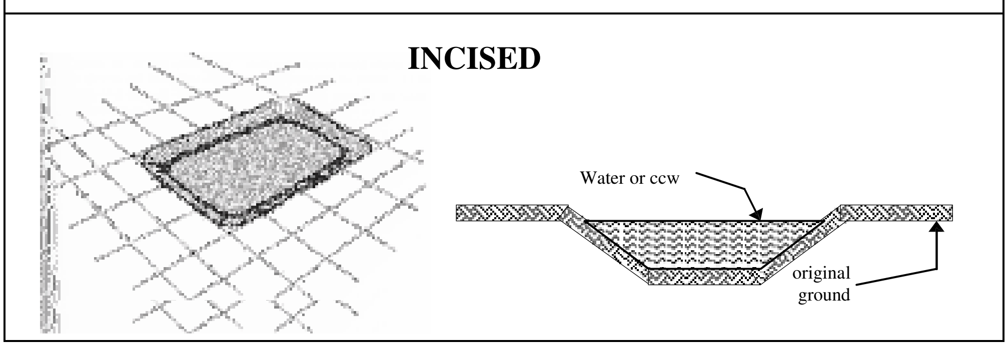
- It appears that a failure would not extend into neighborhood or public roadway located adjacent to Ash Pond #3,
- Damage would primarily be limited to Georgia Power properties,
- CCW material in pond is covered and has been actively drained for years, surface of impoundment is partially used for lay-down yard,
- Access roads would act as a catchment and barrier to the Chattahoochee River and surrounding community,
- No probable loss of human life, and
- Economic and/or environmental losses are expected to be low.

CONFIGURATION:









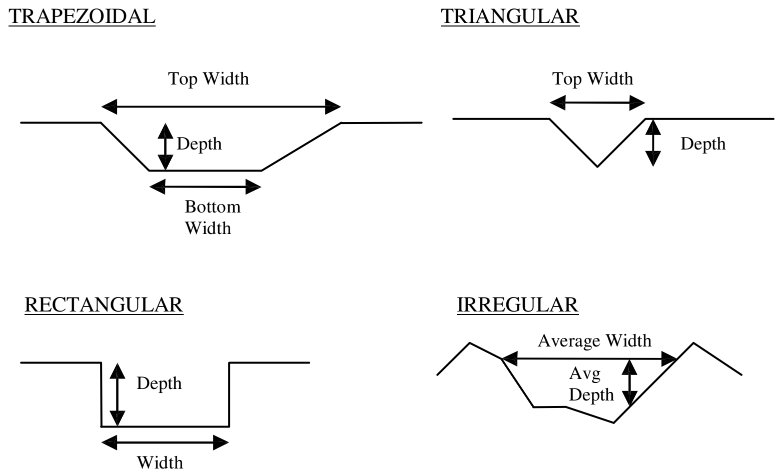
______Cross-Valley
__X__Side-Hill
______Diked
______Incised (form completion optional)
______Combination Incised/Diked

Embankment Height ___39___feet Embankment Material Earthen Mtls.____
Pool Area ___23_________ acres Liner __N/A______________________
Current Freeboard __N/A______ feet Liner Permeability __N/A____________

TYPE OF OUTLET (Mark all that apply)

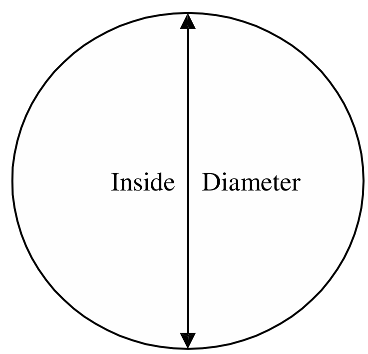
__N/A__ **Open Channel Spillway**
______Trapezoidal
______Triangular
______Rectangular
______Irregular

______depth
______bottom (or average) width
______top width



Primary___Outlet

__24"__inside diameter



Material
__X___corrugated metal
______welded steel
______concrete
______plastic (hdpe, pvc, etc.)
______other (specify) ______________________

Is water flowing through the outlet? YES _______ NO ___X___

______**No Outlet**

______**Other Type of Outlet** (specify) ________________________________

The Impoundment was Designed By __Owner's Chief Engineer_________________
____

Has there ever been a failure at this site? YES ___________NO _____X______

If So When? ____________________________

If So Please Describe : ____

Has there ever been significant seepages at this site? YES ________NO __X___

If So When? ____________________________

IF So Please Describe: ____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES ________ NO ___X___

If so, which method (e.g., piezometers, gw pumping,...)? ____________________

If so Please Describe : ______________________________

Coal Combustion Dam Inspection Checklist Form

US Environmental
Protection Agency

Site Name: Plant McDonough

Date: 4/28/10

Unit Name: Ash Pond #4

Operator's Name: Georgia Power

Unit I.D.: Ash Pond #4

Hazard Potential Classification: High Significant Low

Inspector's Name: Doug Tate, P.E., Mary Swiderski

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Quarterly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	834.5'		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	834.5'		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	840 +/-		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	846.3'		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	X		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation, stumps, topsoil in area where embankment fill will be placed)?	X		From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	X		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?		X	Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?		X	22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?		X
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # GA0001431

INSPECTOR Doug Tate, P.E. Mary Swiderski

Date 4/28/10

Impoundment Name Plant McDonough – Ash Pond #4
Impoundment Company Georgia Power
EPA Region 4
State Agency (Field Office) Address Georgia Department of Natural Resources
MLK Jr. Dr., Suite 1152 East Tower
Atlanta, GA 30334

Name of Impoundment Ash Pond #4
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update ____

	Yes	No
Is impoundment currently under construction?		X
Is water or ccw currently being pumped into the impoundment?	X	

IMPOUNDMENT FUNCTION: Co-treatment facility, receives low-volume wastes, sedimentation basin for dry stack operation.

Nearest Downstream Town : Name Smyrna,
Distance from the impoundment 0 miles
Impoundment
Location: Longitude -84 Degrees 28 Minutes 26 Seconds
Latitude 33 Degrees 49 Minutes 45 Seconds
State GA County Cobb

Does a state agency regulate this impoundment? YES X NO____

If So Which State Agency? Georgia Dept. of Natural Resources (Safe Dam Program)

<u>HAZARD POTENTIAL</u> (In the event the impoundment should fail, the following would occur):

______**LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

______**LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those 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 owner's property.

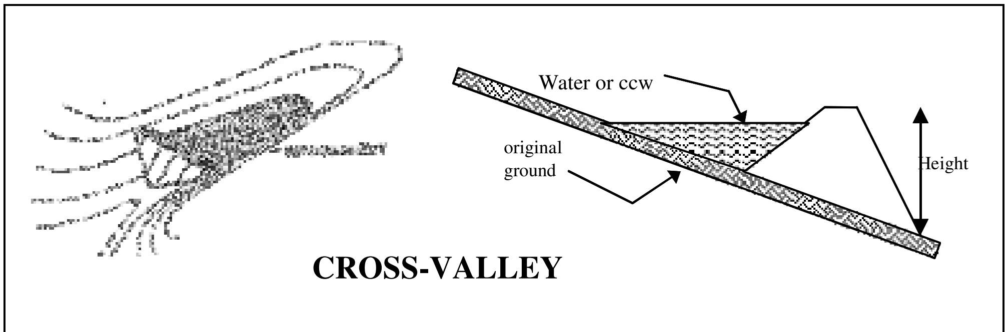
______**SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

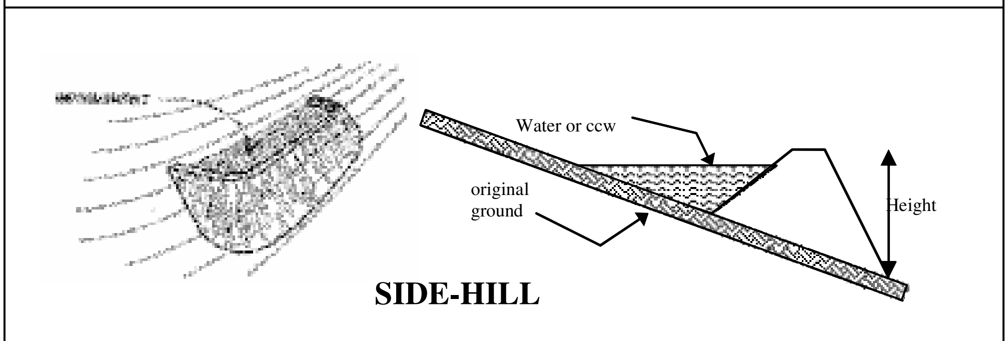
__X__**HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

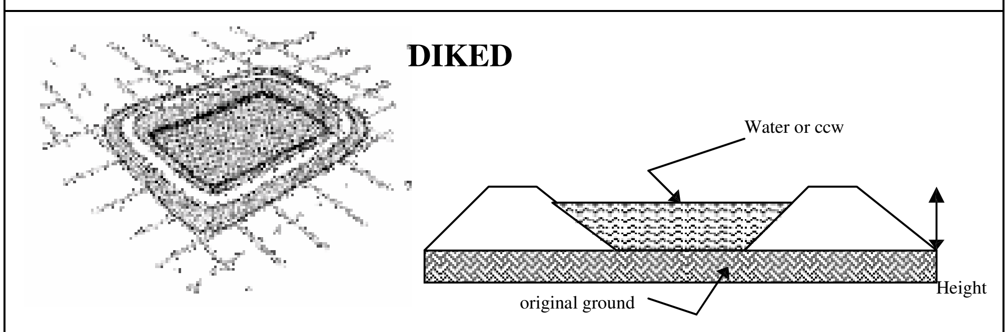
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

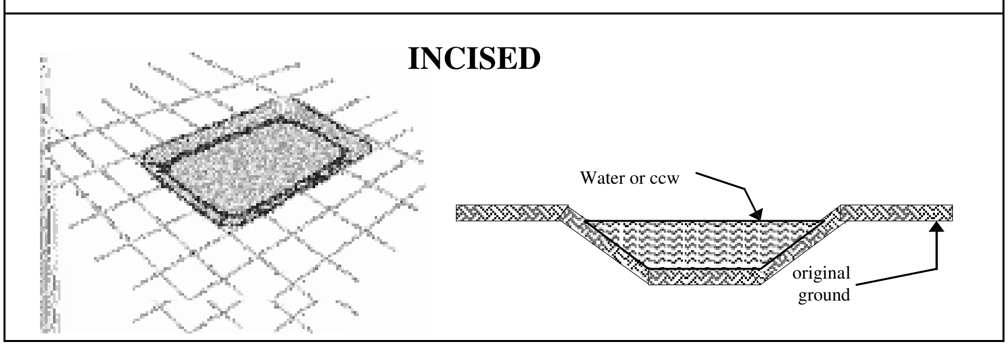
- Pond located within highly developed areas,
- State Agency classifies impoundment as high hazard, and
- Failure will probably cause loss of human life.

CONFIGURATION:







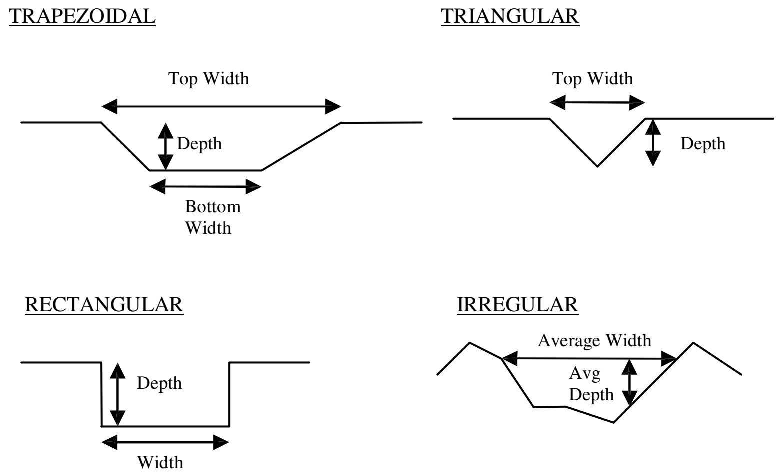


______Cross-Valley
__X__Side-Hill
______Diked
______Incised (form completion optional)
______Combination Incised/Diked

Embankment Height ___68___feet   Embankment Material Earthen Mtls.____
Pool Area ____41____ acres   Liner __N/A__________
Current Freeboard __approx 10'__ feet   Liner Permeability __N/A__________

TYPE OF OUTLET (Mark all that apply)

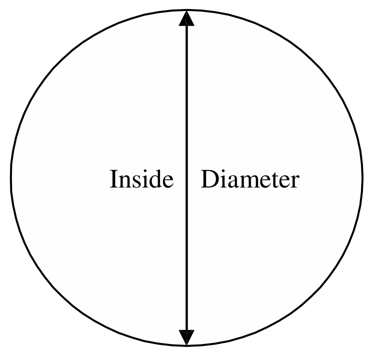
______ **Open Channel Spillway**
___X___ Trapezoidal
______ Triangular
______ Rectangular
______ Irregular



__~4'__ depth
__~15'__ bottom (or average) width
__~47'__ top width

Primary ___ Outlet

__36"__ inside diameter



Material
______ corrugated metal
______ welded steel
______ concrete
______ plastic (hdpe, pvc, etc.)
___X___ other (specify) __Fiber Glass__________

Is water flowing through the outlet? YES ___X___ NO _______

______ **No Outlet**

______ **Other Type of Outlet** (specify) ______________________________

The Impoundment was Designed By __Owner's Chief Engineer (PE)__________

Has there ever been a failure at this site? YES ___________NO _____X______

If So When? ____________________________

If So Please Describe : ____

Has there ever been significant seepages at this site? YES ________NO ___X___

If So When? ____________________________

IF So Please Describe: ____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES ________NO ___X___

If so, which method (e.g., piezometers, gw pumping,...)? ____________________

If so Please Describe : ____________________

APPENDIX B
Site Photo Log Map and Site Photos

ENVIRONMENTAL PROTECTION AGENCY		DWN BY: ATJ DWN BY: MS	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. No.: A Date: 5-26-2010
AMEC Earth & Environmental 690 Commonwealth Business Center 11003 Bluegrass Parkway Louisville, KY 40299	amec	Datum: NAD 83 Projection: Albers Scale: As Shown	GEORGIA POWER PLANT MCDONOUGH SMYRNA, GA ASH POND 1 PHOTO LOCATION MAP	Project No: 3-2106-0174-0600 Figure No: B-1

ENVIRONMENTAL PROTECTION AGENCY	DWN BY: ATJ DWN BY: MS	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. No.: A Date: 5-26-2010
AMEC Earth & Environmental 690 Commonwealth Business Center 11003 Bluegrass Parkway Louisville, KY 40299	Datum: NAD 83 Projection: Albers Scale: As Shown	GEORGIA POWER PLANT MCDONOUGH SMYRNA, GA ASH POND 2 PHOTO LOCATION MAP	Project No: 3-2106-0174-0600 Figure No: B-2

amec

	ENVIRONMENTAL PROTECTION AGENCY	DWN BY: ATJ	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. No.: A
		DWN BY: MS		Date: 5-26-2010
AMEC Earth & Environmental 690 Commonwealth Business Center 11003 Bluegrass Parkway Louisville, KY 40299	amec	Datum: NAD 83	GEORGIA POWER PLANT MCDONOUGH SMYRNA, GA ASH POND 3 PHOTO LOCATION MAP	Project No: 3-2106-0174-0600
		Projection: Albers		
		Scale: As Shown		Figure No: B-3

	ENVIRONMENTAL PROTECTION AGENCY	DWN BY: ATJ	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. No.: A
		DWN BY: MS		Date: 5-26-2010
AMEC Earth & Environmental 690 Commonwealth Business Center 11003 Bluegrass Parkway Louisville, KY 40299	amec	Datum: NAD 83	GEORGIA POWER PLANT MCDONOUGH SMYRNA, GA ASH POND 4 PHOTO LOCATION MAP	Project No: 3-2106-0174-0600
		Projection: Albers		
		Scale: As Shown		Figure No: B-4

ASH POND 1
SITE PHOTOS

1-1

PRIMARY SPILLWAY INLET

1-2

PRIMARY SPILLWAY INLET

AMEC Earth & Environmental

690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, Ky 40299
(502) 267-0700

amec

CLIENT LOGO	CLIENT: ENVIRONMENTAL PROTECTION AGENCY		
PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 1 SITE PHOTOS	CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
	PROJECTION:	SCALE:	PAGE NO. B-5

1-3

PRIMARY SPILLWAY OUTLET

1-4

PRIMARY SPILLWAY OUTLET

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 1 SITE PHOTOS	CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
	PROJECTION:	SCALE:	PAGE NO. B-6

1-5
GENERAL SITE PHOTO

1-6
GENERAL SITE PHOTO

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY

PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 1 SITE PHOTOS	CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
	PROJECTION:	SCALE:	PAGE NO. B-7

1-7

GENERAL SITE PHOTO

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700		CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 1 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO.. B-8

ASH POND 2
SITE PHOTOS

2-1

STEEP SLOPE/UNEVEN GROUND SURFACE ALONG EASTERN DIKE

2-2

TEMPORAY PIEZOMETERS AP2-2

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 2 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-9

2-3
EMERGENCY SPILLWAY

2-4
EMERGENCY SPILLWAY

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 2 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-10

2-5

EMERGENCY OVERFLOW OUTLET

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 2 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-11

ASH POND 3
SITE PHOTOS

3-1

PRIMARY OUTLET

3-2

INLET FROM POWER PLANT

AMEC Earth & Environmental

690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, Ky 40299
(502) 267-0700

CLIENT LOGO	CLIENT: ENVIRONMENTAL PROTECTION AGENCY		
PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 3 SITE PHOTOS	CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
	PROJECTION:	SCALE:	PAGE NO. B-12

3-3

GRASSY AREAS RESEEDED ON DIKE

3-4

GENERAL SITE PHOTO

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 3 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-13

3-5

OUTLET FOR PRIMARY SPILLWAY

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 3 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-14

ASH POND 4
SITE PHOTOS

4-1

ENTRANCE TO DIVERSION PIPE

4-2

DRAIN NUMBER 15 (FLOWING) ALONG WESTERN DOWNSTREAM TOE

AMEC Earth & Environmental
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, Ky 40299
(502) 267-0700

	CLIENT LOGO	CLIENT: ENVIRONMENTAL PROTECTION AGENCY	
PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 SITE PHOTOS	CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
	PROJECTION:	SCALE:	PAGE NO. B-15

4-3

WEST WEIR ALONG WESTERN DOWNSTREAM TOE

4-4

RESEEDED AREA ALONG WESTERN DOWNSTREAM TOE

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-16

4-5
OUTLET FOR DIVERSION PIPE

4-6
EMERGENCY OVERFLOW

AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700		CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	
PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS		DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 SITE PHOTOS		CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
		PROJECTION:	SCALE:	PAGE NO. B-17

4-9

OVERGROWN EMERGENCY OVERFLOW

4-10

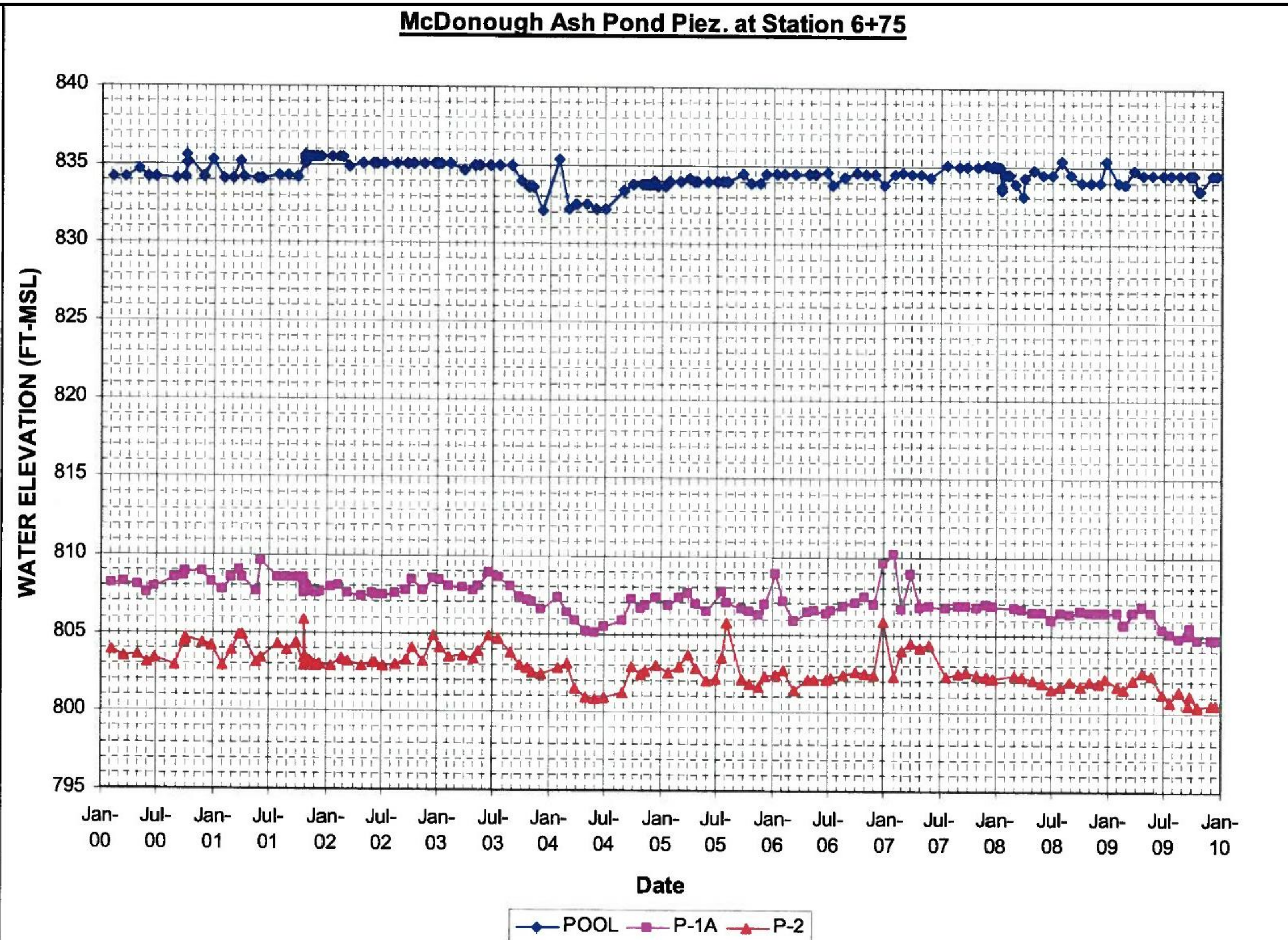
CURRENT FREEBOARD

AMEC Earth & Environmental

690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, Ky 40299
(502) 267-0700

CLIENT LOGO	CLIENT: ENVIRONMENTAL PROTECTION AGENCY		
PROJECT: ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DWN BY: CAE	DATUM:	DATE: 5/24/10
TITLE: GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 SITE PHOTOS	CHK'D BY: MS	REV. NO.:	PROJECT NO: 3-2106-0174.0100
	PROJECTION:	SCALE:	PAGE NO. B-18

APPENDIX C
Ash Pond 4 Piezometer Data Graphs



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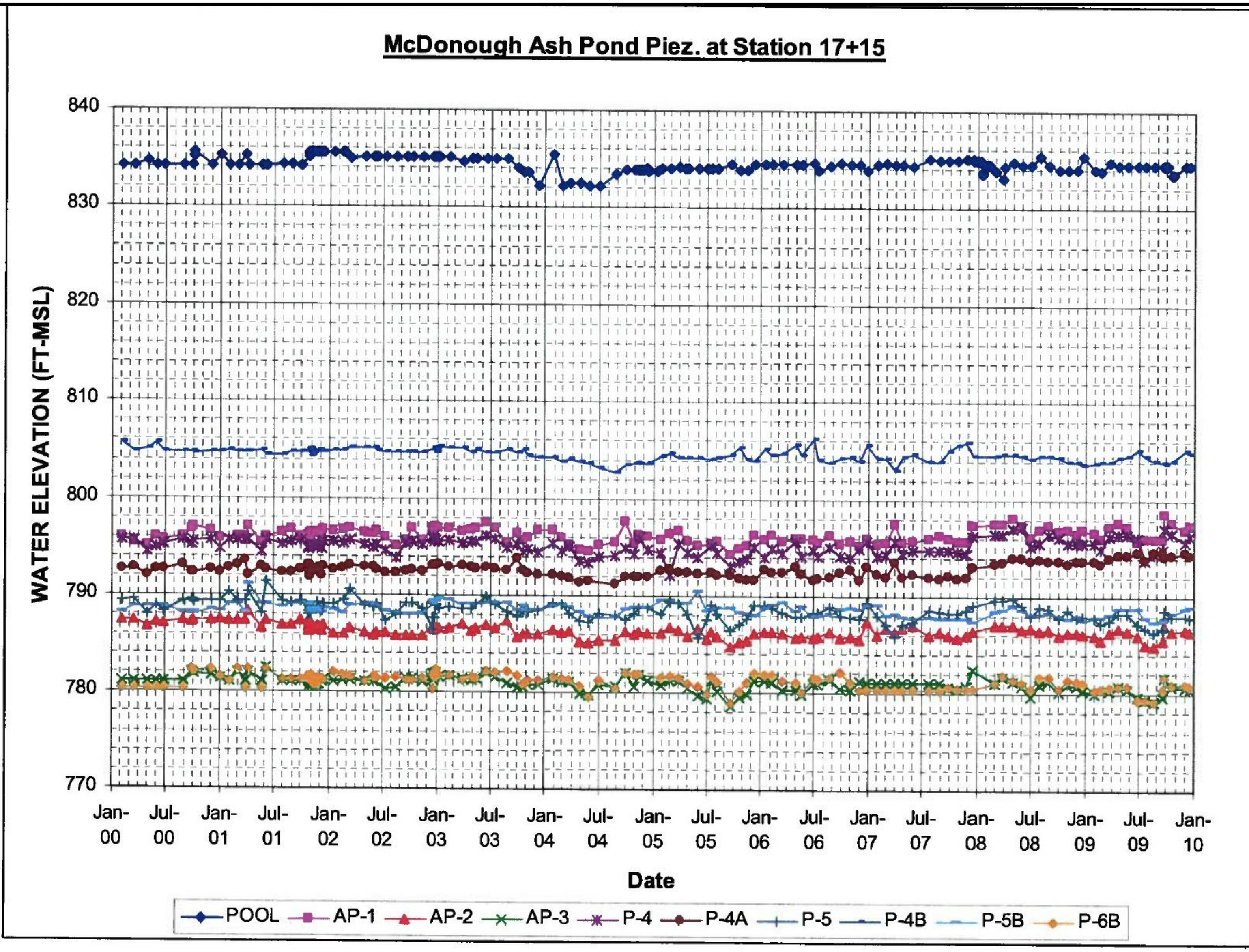
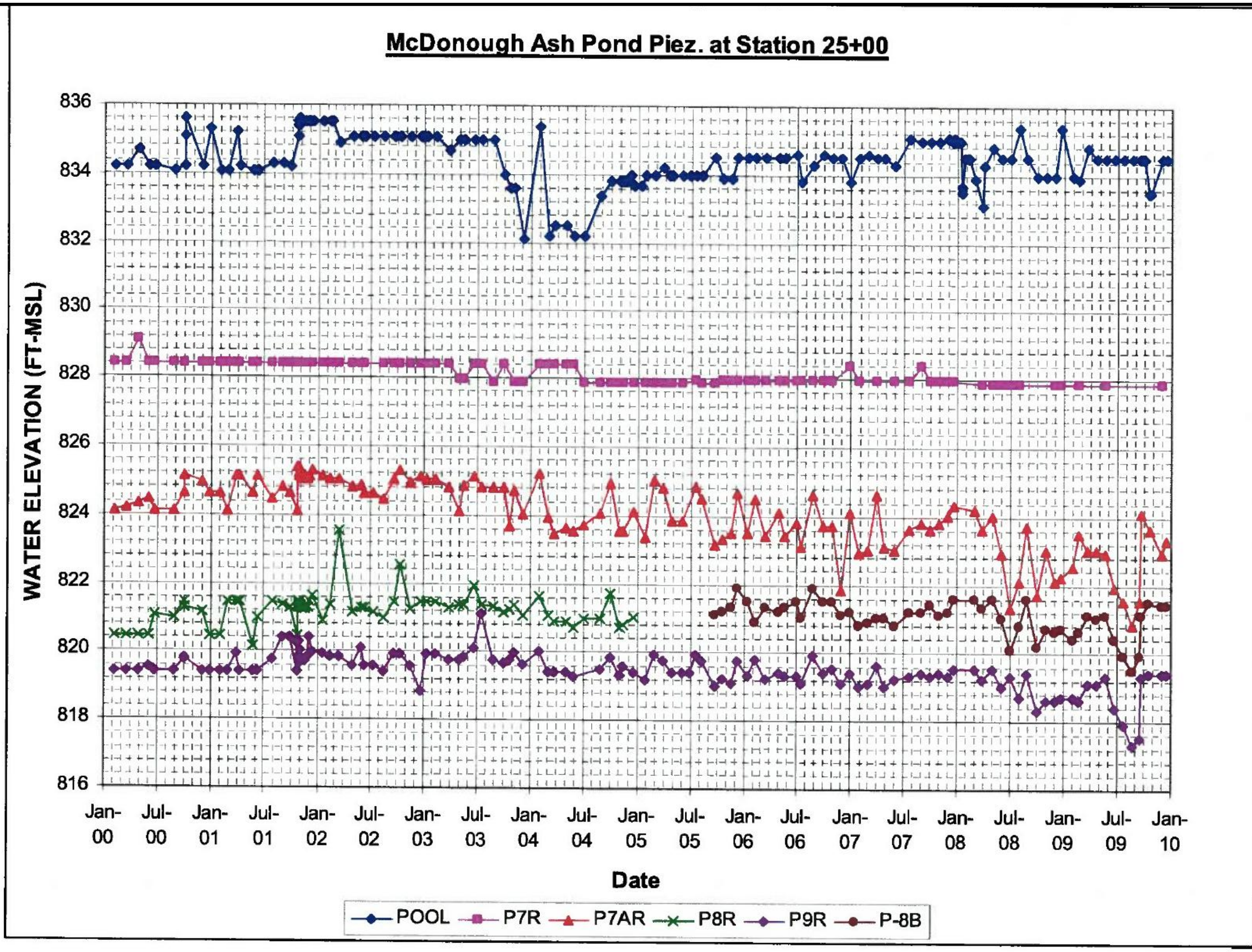
AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	DATUM: PROJECTION: SCALE: NTS	TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 PIEZOMETER DATA GRAPH STATION 6+75	PROJECT NO: 3-2106-0174.0100 PAGE NO. C-1

S:\Geosciences\Proposals\EPA Coal Impoundment Inspection\March 2010 RFP Pro\Georgia Power\Plant McDonough\PIEZOMETERgraph.dwg – C–1 – Jun. 03, 2010 8:43am – chris.eger



CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	DWN BY: CAE CHK'D BY: MS	PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. NO.: A DATE: 6/2/10
AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	DATUM: PROJECTION: SCALE: NTS	TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 PIEZOMETER DATA GRAPH STATION 17+15	PROJECT NO: 3-2106-0174.0100 PAGE NO. C-2



CLIENT LOGO	CLIENT	DWN BY: CAE	PROJECT	REV. NO.: A
	ENVIRONMENTAL PROTECTION AGENCY	CHK'D BY: MS	ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	DATE: 6/2/10
AMEC Earth & Environmental 690 Commonwealth Center 11003 Bluegrass Parkway Louisville, Ky 40299 (502) 267-0700	amec	DATUM: PROJECTION: SCALE: NTS	TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 PIEZOMETER DATA GRAPH STATION 25+00	PROJECT NO: 3-2106-0174.0100 PAGE NO. C-3

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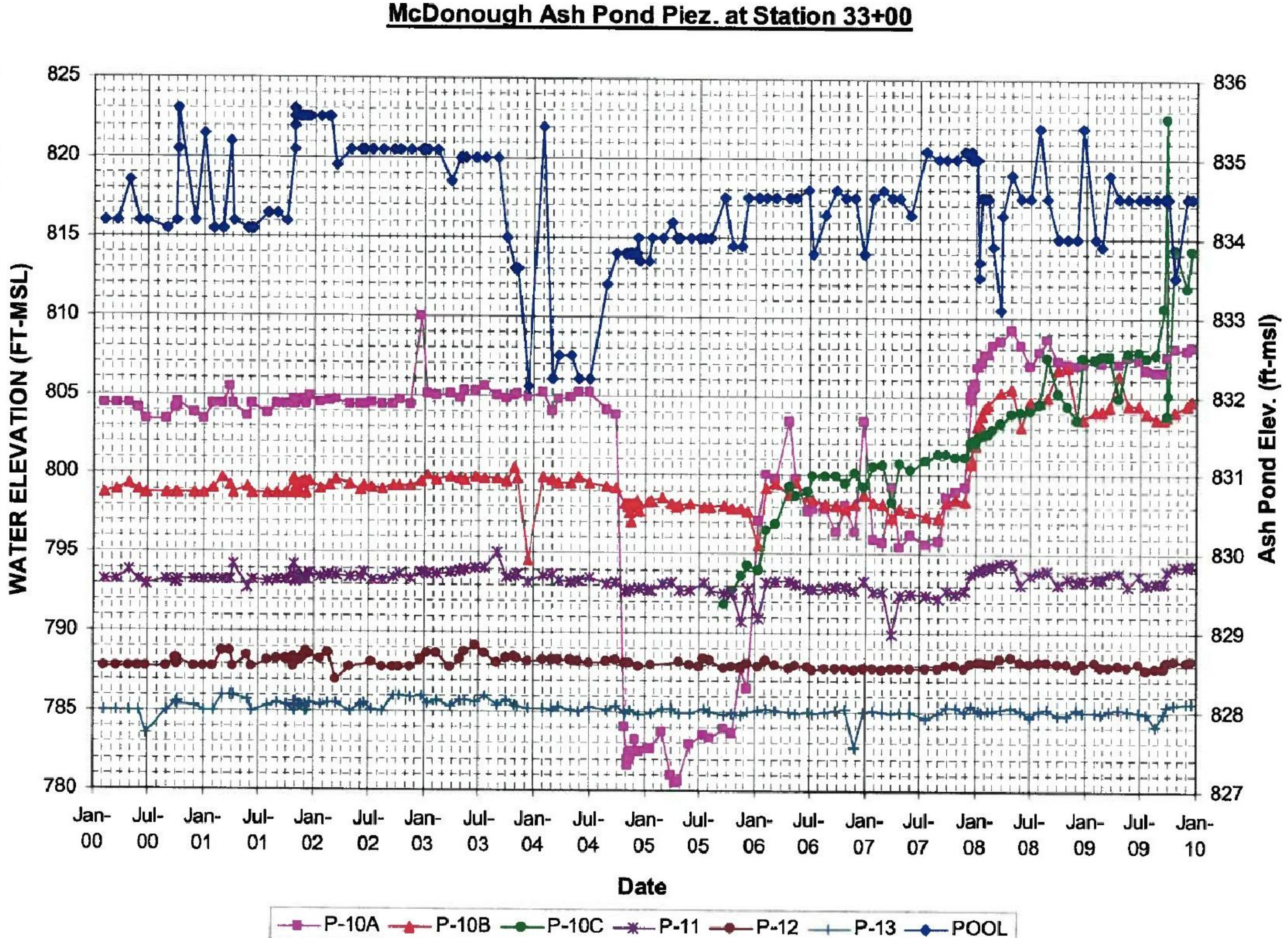

CLIENT LOGO	CLIENT ENVIRONMENTAL PROTECTION AGENCY	DWN BY: CAE CHK'D BY: MS	PROJECT ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS	REV. NO.: A DATE: 6/2/10
AMEC Earth & Environmental **690 Commonwealth Center** **11003 Bluegrass Parkway** **Louisville, Ky 40299** **(502) 267-0700**		DATUM: PROJECTION: SCALE: NTS	TITLE GEORGIA POWER PLANT MCDONOUGH, SMYRNA, GA. ASH POND 4 PIEZOMETER DATA GRAPH STATION 33+00	PROJECT NO: 3-2106-0174.0100 PAGE NO. C-4

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APPENDIX D
Inventory of Provided Materials

Bin 69010
5551 South Cobb Drive
Smyrna, Georgia 30080

GEORGIA POWER
A SOUTHERN COMPANY

Confidential Business Information – Do Not Disclose

April 28, 2010

VIA E-MAIL

Stephen Hoffman
Office of Resource Conservation and Recovery
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Re: Documents Provided to EPA and Claims of Confidentiality

Dear Mr. Hoffman:

This letter confirms the documents provided by Georgia Power to the Environmental Protection Agency (EPA) during EPA's inspection of Plant McDonough Ash Ponds on April 28, 2010. The following table lists the documents provided to EPA during the inspection. Georgia Power has provided some of the documents under a claim of confidentiality for purposes of Part 2, Subpart B of EPA's regulations. The documents claimed as confidential have been marked as such, and are noted as "Yes" under the column for CBI, which stands for confidential business information. Georgia Power also claims this letter as confidential business information due to the information it conveys with respect to Georgia Power's facilities and management practices.

Bates	Document Description	CBI
MCD-API 001	Dam Safety Surveillance Quarterly Report, 1st Quarter 2005	Yes
MCD-API 002	Dam Safety Surveillance Quarterly Report, 3rd Quarter 2005	Yes
MCD-API 003	Dam Safety Surveillance Quarterly Report, 4th Quarter 2005	Yes
MCD-API 004	Plant McDonough Surveillance, 4th Quarter 2006	Yes
MCD-API 005	Dam Safety Surveillance Quarterly Report, 3rd Quarter 2007	Yes
MCD-API 006	Dam Safety Surveillance Quarterly Report, 1st Quarter 2008	Yes

Bates	Document Description	CBI
MCD-API 007	Dam Safety Surveillance Quarterly Report, 3rd Quarter 2008	Yes
MCD-API 008	Dam Safety Surveillance Quarterly Report, 4th Quarter 2008	Yes
MCD-API 009	Dam Safety Surveillance Quarterly Report, 1st Quarter 2009	Yes
MCD-API 010	Dam Safety Surveillance Quarterly Report, 3rd Quarter 2009	Yes
MCD-API 011	Dam Safety Surveillance Quarterly Report, 4th Quarter 2009	Yes
MCD-API 012	McDonough Ash Pond, Drawing H-4	Yes
MCD-API 013	McDonough/Atkinson Site Plan Layout	Yes
MCD-API 014	Letter from Georgia Power Company to EPA re: Responses to 104(e) Request for Plant McDonough	Yes/partial as indicated
MCD-API 015	McDonough Ash Pond, Drawing H-9	Yes
MCD-API 016	McDonough Ash Pond, Drawing H-11	Yes
MCD-API 017	McDonough Ash Pond, Drawing H-68	Yes
MCD-API 018	McDonough/Atkinson Ash Pond, Drawing H-72	Yes
MCD-API 019	McDonough/Atkinson Ash Pond, Drawing H-95	Yes
MCD-API 020	McDonough/Atkinson Ash Pond, Drawing H-96	Yes
MCD-API 021	McDonough/Atkinson Ash Pond, Drawing H-97	Yes
MCD-API 022	McDonough/Atkinson Ash Pond, Drawing D-86	Yes
MCD-API 023	McDonough/Atkinson Ash Pond, Drawing D-87	Yes
MCD-API 024	McDonough/Atkinson Ash Pond, Drawing D-88	Yes
MCD-API 025	McDonough Ash Ponds 1 and 2 Stability Study	Yes
MCD-API 026	McDonough Ash Pond, Drawing B-67	Yes
MCD-API 027	McDonough Ash Pond, Drawing H-111	Yes
MCD-API 028	McDonough Ash Pond, Drawing H-113	Yes
MCD-API 029	McDonough Ash Pond, Drawing H-114	Yes
MCD-API 030	McDonough Ash Pond, Drawing H-115	Yes
MCD-API 031	McDonough Ash Pond, Drawing H-229	Yes
MCD-API 032	McDonough Ash Pond, Drawing H-249	Yes
MCD-API 033	McDonough Ash Pond, Drawing D-110	Yes
MCD-API 034	McDonough Ash Pond, Drawing E-015	Yes
MCD-API 035	McDonough Ash Pond, Drawing C-99	Yes
MCD-API 036	McDonough/Atkinson Ash Pond, Drawing E-5939	Yes
MCD-API 037	McDonough Ash Pond, Drawing H-12	Yes
MCD-API 038	McDonough Ash Pond, Drawing H-112	Yes
MCD-API 039	McDonough Boring Logs for Ash Ponds 1 and 2	Yes
MCD-API 040	McDonough well Construction Logs for Ponds 1 and 2	Yes
MCD-API 041	McDonough Ash Pond 1 Cone Penetration Log	Yes
MCD-API 042	McDonough SCS Drilling Logs Coal Yard	Yes
MCD-API 043	McDonough SCS Drilling Logs CC KV Tie line	Yes
MCD-API 044	McDonough Study of Removal of Dike Material and Fly Ash from Ponds 1 and 3	Yes
MCD-API 045	McDonough Ash Pond, Drawing ES1812S1 Ash Ponds 1 and 2 Boring Layout	Yes

Bates	Document Description	CBI
MCD-API 046	McDonough Ash Pond 3 and 4 Survey	Yes
MCD-API 047	McDonough Aerial Photograph	Yes
MCD-API 048	McDonough NPDES Flow Diagram	Yes
MCD-API 049	McDonough Georgia EPD Ash Pond 4 Inspection 2006	No
MCD-API 050	McDonough Georgia EPD Ash Pond 4 Inspection 2007	No
MCD-API 051	McDonough Georgia EPD Ash Pond 4 Inspection 2008	No
MCD-API 052	McDonough Georgia EPD Ash Pond 4 Inspection 2009	No
MCD-API 053	McDonough Cooling Tower Drilling Logs	Yes
MCD-API 054	McDonough Georgia EPD Ash Pond 4 Inspection 2010	No
MCD-API 055	Letter from Georgia EPD re: McDonough NPDES Permit	No

I trust this list is consistent with your understanding of the documents we have provided to you today and is clear with respect to Georgia Power's claims of confidentiality. Please advise me immediately if you should become aware of any discrepancy with respect to the documents Georgia Power has provided, or if there is any question as to which documents are claimed as confidential.

Sincerely,

Tony Tramonte

Tony Tramonte
Plant Manager
Plant McDonough

cc: Douglas E. Tate, P.E.
Mary Swiderski
Charles H. Huling

GEORGIA POWER
A SOUTHERN COMPANY

Confidential Business Information – Do Not Disclose

April 30, 2010

VIA E-MAIL

Stephen Hoffman
Office of Resource Conservation and Recovery
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Re: Documents Provided to EPA and Claims of Confidentiality

Dear Mr. Hoffman:

Dear Mr. Hoffman:

This letter confirms the additional documents provided by Georgia Power to the consultants of the Environmental Protection Agency (EPA) in response to EPA's inspection of Plant McDonough on April 28, 2010 have been designated as Confidential Business Information. We have affixed a unique identifying number to each document. The table below identifies all the documents provided to EPA in this supplemental production. Georgia Power has designated those documents provided to EPA as confidential with a Confidential Business Information stamp. The confidential documents have been identified below and marked as such.

Doc. Control No.	CBI
MCD-API 056	No
MCD-API 057	No
MCD-API 058	No
MCD-API 059	Yes
MCD-API 060	Yes
MCD-API 061	Yes
MCD-API 062	Yes
MCD-API 063	Yes

Doc. Control No.	CBI
MCD-API 064	Yes
MCD-API 065	Yes
MCD-API 066	Yes
MCD-API 067	Yes
MCD-API 068	No
MCD-API 069	Yes
MCD-API 070	Yes
MCD-API 071	Yes
MCD-API 072	Yes
MCD-API 073	No
MCD-API 074	Yes
MCD-API 075	Yes

I trust this letter is consistent with your understanding of the documents Georgia Power has provided, including which documents are subject to a claim of confidentiality. Please advise me immediately if you should have any question about which documents have been provided and which are confidential.

Sincerely,

Tanya Blalock

Tanya Blalock
Environmental Manager
Water and Land Programs

cc: Douglas E. Tate, P .E.
Mary Swiderski
Tony Tramonte
Charles H. Huling

Titled McDonough Documents (Listed without titles)

MCD-API 056	New Combined Cycle Units #4 and #5 at Ash Pond #4 New Transmission Structures Design Submittal for Approval Request from Southern Co. to GA EPD (5/11/09)
MCD-API 057	Approval Letter from Dallon Thomas/GA EPD to Southern Co. re: Ash Pond #4 Dam Transmission Line Install. #2 (6/4/09)
MCD-API 058	Addendum 1-Additional Submittal Info re: New Combined Cycle Units/Ash Pond #4 Trans. Line Structures: Reloc and Add. From Southern Co. to GA EPD (12/12/08)
MCD-API 059	Drilling Log McDonough – Smyrna 230 kV STR.- 7 (9/9/08)
MCD-API 060	Drilling Log McDonough – Smyrna 230 kV STR.- 6 (9/9/08)
MCD-API 061	Drill Log MCD-CC #5 230 kV Tie Line STR-3 (2/3/09)
MCD-API 062	Drill Log MCD-CC #5 230 kV Tie Line STR-2 (2/4/09)
MCD-API 063	Drill Log MCD-Peachtree 230 kV STR-1B (7/8/08)
MCD-API 064	Drill Log MCD-Smyrna 230 kV STR-4 (9/9/08)
MCD-API 065	Drill Log MCD-Smyrna 230 kV STR-3 (9/9/08)
MCD-API 066	Drill Log MCD-Smyrna 230 kV STR-2 (7/8/08)
MCD-API 067	June 1, 1998 Cover Letter and Ash Pond #4 Stability Analysis
MCD-API 068	Approval Letter from Dallon Thomas/GA EPD to Southern Co. re: Ash Pond #4 Road Installation (5/1/09)
MCD-API 069	Design Calc. Check and 2008 Stability Analysis Report for Ash Pond #4
MCD-API 070	Inquiry No. GA – 2973 Ash Pond Construction Detail Specifications – no date given
MCD-API 071	Law Engineering and Testing Report of Subsurface Investigation Plant McDonough-1968
MCD-API 072	Boring Logs for 1976 Piezometer Installations by Law Engineering and Testing
MCD-API 073	Interoffice Communication – 1/12/79, Ash Pond #4 classification as Category I structure, requirement for permit, conveyance of permit application
MCD-API 074	Boring Logs from 1981 by Atlanta Testing and Engineering for Ash Pond #4 Stability Analysis
MCD-API 075	October 1981 Cover Letter and Ash Pond #4 Stability Analysis Report
From Georgia Environmental Protection Division - NOT received from GA Power	Ash Pond #4 - Various information, documentation and GA Safe Dams Category I Dam Permit