CCR SURFACE IMPOUNDMENT EMERGENCY ACTION PLAN

Plant Gaston Ash Pond

I hereby certify that this Emergency Action Plan has been prepared in accordance with the requirements of 40 C.F.R. Part 257.73 and the State of Alabama's ADEM Admin. Code Chapter 335-13-15-.04(4).

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4/15/22

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ISSUE DATE: **April 15, 2022**
REVISION #: **1**

REVISION RECORD

In accordance with 40 C.F.R. Part 257.73 and ADEM Admin Code r. 335-13-15-.04(4), this Emergency Action Plan (EAP) must be amended whenever there is a change in conditions that would substantially affect the EAP in effect. Additionally, the EAP must be evaluated, at a minimum, every five years to ensure the information is accurate. As necessary, this EAP must be updated and a revised EAP placed in the facility's operating record as required by 40 C.F.R. Part 257.105(f)(6) and ADEM Admin. Code r. 335-13-15-.08(1)(f)6.

Revision Number	**Date**	**Sections Affected/Reason**
0	04/17/2017	Creation of Initial EAP
1	04/15/2022	Modified text to incorporate applicable ADEM Admin. Code r. 335-13-15 requirements and to update Section 2.0 to reflect current closure-related activities

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APPENDICES

ACRONYMS AND ABBREVIATIONS

ADEM	Alabama Department of Environmental Management
AEMA	Alabama Emergency Management Agency
ALDOT	Alabama Department of Transportation
APC	Alabama Power Company
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
EAP	Emergency Action Plan
EMA	Emergency Management Agency
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
H:V	Horizontal:Vertical
HDPE	High-Density Polyethylene
ID	Inside Diameter
SCS	Southern Company Services
T&PS	SCS Technical & Project Solutions

DEFINITIONS

Adverse Consequences. Negative impacts that may result from the failure of a dam. The primary concerns are loss of life, economic loss (including property damage), lifeline disruption and environmental impact.

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

CCR Surface Impoundment. A natural topographic depression, man-made excavation, or diked area which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

Dam/Dike/Embankment. Berm or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids or other materials.

Dam Failure. Catastrophic type of failure characterized by the sudden, rapid and uncontrolled release of impounded water or the likelihood of such an uncontrolled release. It is recognized that there are lesser degrees of failure and that any malfunction or abnormality outside the design assumptions and parameters that adversely affect a dam's primary function of impounding water is properly considered a failure. These lesser degrees of failure can progressively lead to or heighten the risk of catastrophic failure. They are, however, normally amenable to corrective action.

> **Imminent Failure (Condition A Emergency).** Failure of a dam/dike/embankment is imminent or has occurred.
>
> **Potential Failure (Condition B Emergency).** A potential failure condition of a dam/dike/embankment is a developing condition, but adequate time is available to properly evaluate the problem and implement corrective actions that may alleviate or prevent failure.
>
> **Non-Failure Condition.** A condition that will not, by itself, lead to a failure, but that requires investigation and notification of internal and/or external personnel.

Emergency. A condition that develops unexpectedly, endangers the structural integrity of the dam, and requires immediate action. An emergency can lead to Adverse Consequences in the event of Imminent Failure.

Filter. One or more layers of granular material graded so as to allow seepage through or within the layers while preventing the migration of material from adjacent zones.

Inundation Map. A graphic representation of the inundation zone that shows the potential impact area due to a breach of the Ash Pond. The inundation maps in this procedure are based on a specific computer-modeled dam breach scenario; therefore, the boundaries depicted are estimates for that particular model. *The models are considered conservative but larger floods could potentially occur.* Please refer to Appendix B.

Inundation Zone. Area subject to flooding in the event of increased flows due to a dam/dike/embankment failure.

Piping. The progressive development of internal erosion of the dam/dike/embankment or foundation material by seepage.

Probable Maximum Flood. The flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin.

Sunny Day Failure. A night or day failure that occurs during fair weather or when weather-related flooding is not occurring.

1.0 STATEMENT OF PURPOSE

This Emergency Action Plan (EAP) has been prepared for the Plant Gaston Ash Pond to meet the requirements of 40 C.F.R. Part 257.73(a)(3) and ADEM Admin. Code 335-13-15-.04(4)(a)3. The EAP identifies potential safety emergency conditions at the Plant Gaston Ash Pond and specifies actions to be followed to minimize potential loss of life and property damage if such conditions exist.

This EAP will provide responding personnel with:

- Pertinent information and description related to the Plant Gaston Ash Pond;
- Definition of events or circumstances that represent a safety emergency;
- Procedures that will be followed to detect a safety emergency;
- Notification procedures in the event of a safety emergency;
- Information to assist in decision making;
- A list of responsible persons and their respective responsibilities;
- Provisions for an annual face-to-face meeting with local emergency responders;
- Contact information for emergency agencies and emergency responders; and
- A map that delineates the downstream area that could be affected in the event of a failure.

2.0 FACILITY DESCRIPTION

Plant Gaston is a coal-fired power plant located near Wilsonville, Alabama. This EAP covers emergency response procedures for the Plant Gaston Ash Pond (the Ash Pond), which was designed to receive and store coal combustion residuals and low volume waste streams produced during the electric generating process at Plant Gaston. The Ash Pond no longer receives CCR nor low volume waste streams and is now undergoing closure construction. An overview of Plant Gaston and the surrounding area is shown in Appendix A – Figure 1.

The ash pond is approximately 263 acres in size at its normal pool elevation of 432 feet (Appendix A – Figure 2). It should be noted that as the impoundment is now undergoing closure, the water surface has been lowered and there is only a limited amount of water present. The Ash Pond has earthen embankments (also referred to as dam/dike) on its north, west and east sides, and the portion of the south side where it parallels the Coosa River. The south, west, and north dikes have heights of 45 feet, 30 feet, and 25 feet, respectively. The area between the east dike and the coal pile embankment has been filled to the approximate crest elevation of the east dike. The elevation of the crest of the dikes is 444 feet to 449 feet. The crest surface is composed of grass and a gravel access drive. Downstream slopes are covered with either grass or riprap.

The original spillway and discharge pipe, which passed under the embankment, has been closed by grouting. An auxiliary spillway located along the southeastern section of the impoundment embankment, near the former primary spillway, remains in service to provide dike protection and to prevent overtopping in the event of the PMP rainfall event. The NPDES discharge point for the plant was relocated prior to initiating impoundment closure, and discharge from the Ash Pond is now pumped to a treatment system and discharged through the new NPDES discharge point.

The Ash Pond dam/dike has been assigned a High Hazard Potential classification under 40 C.F.R. Part 257.73 of the Environmental Protection Agency's (EPA's) Coal Combustion Residuals (CCR) Rule and the State of Alabama's ADEM Admin. Code 335-13-15-.04(4). This classification, by definition, indicates that there is a probable loss of human life in the event of a dam/dike failure or mis-operation of the facility. There are also structures that could be impacted by the failure of the Ash Pond dam/dike or mis-operation of the surface impoundment. Lay Dam is located downstream from the Ash Pond, near Clanton, Alabama. Areas north and west of the Ash Pond in the town of Wilsonville could be impacted by failure of the dam, and some riverbank could also be impacted. The limits of potential flooding in the event of failure of the Ash Pond dam/dike can be seen on the Inundation Maps, which are included as Appendix B. The provided inundation maps were developed based on the results of routing the breach wave downstream using the computer software, HEC-RAS. HEC-RAS is a general application one-dimensional hydraulic model that can perform unsteady flow routing through an open channel system that may also include culverts, bridges, levees, tributaries, storage areas, and other dams. Unsteady flow analyses allow for flow conditions that vary temporally and spatially such as a dam breach simulation. Breach parameters such as failure time, breach width, and breach side slopes were selected from industry accepted empirical formulas. Water surface elevation data was extracted from the hydraulic model and plotted on best available LiDAR topographic information for the downstream areas.

Normal river/lake levels and the flow from simulated dam breaches were superimposed over topographical maps to identify areas subject to flooding. ***These flood extents are provided for planning purposes only; actual flooding can vary due to actual conditions present at the time of the failure.***

3.0 DETECTION, EVALUATION, AND CLASSIFICATION PROCEDURES FOR EMERGENCIES

3.1 Inspection Schedule and Condition Detection/Evaluation

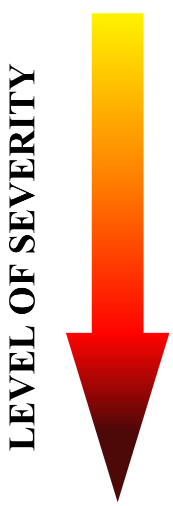
Trained personnel from Plant Gaston inspect the Ash Pond dams/dike on a regular basis to pre-emptively detect conditions, in a timely manner, that could indicate a potential issue so that it can be addressed. Trained personnel from the Plant's Environmental Compliance group perform weekly inspections; and SCS T&PS Dam Safety (Dam Safety) personnel perform annual inspections.

Plant personnel conducting inspections of the dams/dikes are trained on an annual basis by engineers from Dam Safety on the appropriate surveillance and monitoring requirements.

Any issues discovered during an inspection are reported to Dam Safety as prescribed in the Safety Procedure for Dams and Dikes at Fossil Generation Plants (GEN10004 REV 1). The Dam Safety Engineer(s) working with plant personnel will recommend a corrective course of action, as needed.

3.2 Condition Severity Classifications

Ash Pond dam/dike emergencies will be classified based on the type of event, severity of the situation, and the time required to take corrective measures. This procedure covers the following severity classifications:



NON-FAILURE CONDITION (NFC)

A situation that will not, by itself, lead to a failure and is not considered an emergency. However, an NFC does require investigation and notification of Dam Safety personnel and may require corrective action.

POTENTIAL FAILURE – Condition B Emergency (B)

A developing situation where failure of a dam/dike may occur but implementation of pre-planned actions may alleviate or prevent failure. In general, adequate time is considered available to properly evaluate and implement corrective actions. *Should conditions worsen, an Imminent Failure emergency may be declared.*

IMMINENT FAILURE – Condition A Emergency (A)

A situation where failure of the dam/dike is imminent or has already occurred.

3.3 Guidance for Determining the Condition Severity Level

The following table details potential situations that could occur at the Ash Pond dam/dike. *The Condition Level indicated in the right-most column corresponds with the Emergency Classifications in Section 3.2 above.*

Event	Situation	Condition Level
Discharge Structure Flow	Spillway flow that could result in flooding of people downstream if the impoundment level continues to rise	B
	Spillway flow that is flooding people downstream	A
Embankment Overtopping	Impoundment level is 1 foot below the top of the dam/dike	B
	Water from the impoundment is flowing over the top of the dam/dike	A
Seepage	New seepage areas in or near the dam/dike	NFC
	New seepage areas with cloudy discharge or increasing flow rate	B
	Seepage with discharge greater than 10 gallons per minute	A
Dropouts	Observation of new sinkhole in impoundment area or on embankment	B
	Rapidly enlarging sinkhole	A
Embankment Cracking	New cracks in the embankment greater than ¼-inch wide without seepage	NFC
	Cracks in the embankment with seepage	B
Embankment Movement	Visual movement/slippage of the embankment slope	NFC
	Sudden or rapidly proceeding slides of the embankment slopes	A
Earthquake	Measurable earthquake felt or reported on or within 50 miles of the dam/dike	NFC
	Earthquake resulting in visible damage to the dam/dike or appurtenances	B
	Earthquake resulting in uncontrolled release of water from the dam/dike	A
Security Threat	Verified bomb threat that, if carried out, could result in damage to the dam/dike	B
	Detonated bomb that has resulted in damage to the dam/dike or appurtenances	A
Sabotage / Vandalism	Damage to dam/dike or appurtenances that could adversely impact the functioning of the dam/dike	NFC
	Modification to the dam/dike or appurtenances that could adversely impact the functioning of the dam/dike	NFC
	Damage to dam/dike or appurtenances that has resulted in seepage flow	B
	Damage to dam/dike or appurtenances that has resulted in uncontrolled water release	A

4.0 INCIDENT RESPONSE

The following situations and conditions should be evaluated when performing condition severity detections and evaluations.

Overtopping. The Ash Pond has a relatively small watershed area compared to the overall size of the impoundment. The Ash Pond only receives and/or contains rainfall/stormwater runoff and previously placed CCR. The impoundment and auxiliary spillway can safely manage the Probable Maximum Flood.

Seepage. Failures due to internal erosion and/or piping resulting from seepage would be detected in the early stages during the regular inspections conducted by plant personnel. Inspectors are trained to look for evidence of seepage. Inspection reports are transmitted to trained dam safety engineers for evaluation. Therefore, the conditions that could lead to failures of this type would likely be discovered and corrected, making an actual failure a remote possibility.

Slope Instability. Slope instability would be demonstrated by sloughing of dam/dike slopes, or detected by Environmental Compliance personnel in their weekly inspections. The conditions that could potentially lead to a failure of this type would also be detected in advance and corrected making an actual failure a remote possibility.

In the event that conditions are detected that could potentially lead to a dam/dike failure, the flowcharts in Appendices C (Incident Response) and D (Response Notification) will be used to respond to the situation and alert applicable personnel and emergency agencies. In that situation, local emergency management agencies (EMAs) would respond and begin warnings and evacuations as soon as possible following the declaration of a safety emergency.

4.1 Access to the Site

Plant and emergency personnel are able to access the dam/dike from the main portion of Plant Gaston by paved or gravel-surfaced roadways. Figures 1 and 2 in Appendix A illustrate the location of the Ash Pond within the Plant property.

4.2 Response during Periods of Darkness

Plant Gaston is operational and/or manned 24 hours a day every day, and personnel and equipment are able to access the site at any time. Response times would not vary significantly from daylight conditions.

4.3 Response during Weekends and Holidays

Plant Gaston is operational and manned 24 hours a day every day, and personnel and equipment will be able to access the site at any time. The response times of certain personnel may be affected, but 24-hour contact information is included in the EAP for responsible personnel.

4.4 Response during Adverse Weather

The dam/dike is accessed by paved and gravel-surfaced roads and is accessible during periods of adverse weather. If severe flooding causes road closures, response times may be adversely affected.

5.0 RESPONSIBLE PERSONS AND RESPONSIBILITIES

Designated personnel have been trained in the use of these response procedures and are aware of their responsibilities in making the procedures effective. The chain of command and the individual responsibilities for plant personnel, public officials, and agencies are outlined below.

5.1 Incident Commander

The Incident Commander is the 24-hour point of contact for all plant emergencies. The Primary Incident Commander is the Operations Team Leader on-shift. The Secondary Incident Commander is the Fuels Team Leader on-shift and should be contacted if the Primary Incident Commander cannot be reached.

The Incident Commander is responsible for ensuring the following functions are addressed as required for emergency response situations:

1. Verifying that an emergency condition exists.

2. Assessing and declaring the emergency condition.

3. Consulting with Dam Safety to evaluate conditions and determine remediation actions.

4. Emergency Actions
   a. If necessary, implement actions to lower the water level in the impoundment in consultation with Dam Safety.
   b. Call-out of personnel necessary to perform the work required on plant site during the emergency.

5. Ensure the notification process as outlined in the Response Notification Flowchart (Appendix D) is completed in an expedient manner.

6. Other responsibilities include:
   a. Establishing lines of communication from the plant to the local and state EMAs.
   b. Ensuring emergency sources of power are available for the operation of essential equipment such as emergency lighting.
   c. Ensuring the availability of heavy equipment and trained operators to aid in the mitigation effort.

5.2 Plant Manager

The Incident Commander will contact the Plant Manager. The Plant Manager will notify the Southern Company Generation SVP, Corporate Communications, the OPCO Incidence Response Team (IRT), the Wilsonville mayor and the Area Manager, as appropriate.

5.3 Emergency Response Team Leader

The Incident Commander shall assign an Emergency Response Team Leader as appropriate for the type of emergency incident. Duties include reporting matters relating to potential emergency action directly to the Incident Commander, accounting for his/her crew personnel and directing their actions.

5.4 Plant Security Department

The Plant Security Department is responsible for securing company property and controlling access to company facilities. The Plant Security Department will relay information to the Incident Commander. The Incident Commander will determine the appropriate people and agencies to notify.

5.5 Plant Environmental Compliance

Environmental Compliance personnel are responsible for assessing conditions, contacting the Plant Manager, obtaining assistance from Dam Safety, and for providing technical updates to the Incident Commander. Compliance personnel can also request assistance from APC Environmental Affairs, if conditions warrant.

5.6 Alabama Control Center

The Alabama Control Center contacts the National Weather Service to inform them of conditions at the plant that may lead to potential flooding downstream.

5.7 SCS Dam Safety

Dam Safety is responsible for coordinating and providing the technical support necessary to mitigate the emergency condition and for notifying APC Corporate Communications and the Hydro General Manager (if the failure could impact a FERC regulated reservoir downstream of the surface impoundment) of the emergency condition. The Dam Safety Manager shall notify the APC Supply Chain Management as shown on the Response Notification Flowchart (Appendix D).

5.8 APC Personnel

Environmental Affairs
APC Environmental Affairs is responsible for coordinating long-term environmental response (after the initial response) and to remediate environmental issues and provide the technical support necessary for any remediation needs. Environmental Affairs is also responsible for all communications with environmental regulatory agencies for appropriate reporting of releases to the environment and for securing variances to existing permits, if needed.

If necessary, Environmental Affairs will also help secure approved remediation contractors for the specific emergency condition that may exist. They will also provide additional support, such as emergency manpower, material, equipment, and expertise to assist in mitigation efforts, if needed.

Corporate Communications
APC Corporate Communications is responsible for coordinating the APC media response and will schedule news briefings and prepare news releases, as required. APC Corporate Communications will also work with local and State Public Information Officers to ensure that timely, accurate, and consistent information is made available to media outlets.

Corporate Security
APC Corporate Security is responsible for supporting Plant Security personnel and contracting with local law enforcement for additional security personnel as needed.

Supply Chain Management
Supply Chain Management is responsible for obtaining additional equipment and materials necessary to mitigate the emergency condition and begin the recovery process.

5.9 Emergency Agencies

Local EMAs are responsible for planning and implementing evacuation and sheltering plans as well as directing search, rescue, and recovery efforts. If additional resources are required, the local agencies can contact the Alabama Emergency Management Agency (Alabama EMA) for assistance.

The local EMAs are the point of contact between plant personnel and local jurisdictions. The EMAs are responsible for the direction and control of emergency operations at the local level and keeping local government officials informed of the status of emergency operations.

Alabama EMA generally becomes involved in an emergency situation if the local agencies are not capable of handling the situation or if assistance is requested by a local agency or by the Governor. Alabama EMA has responsibilities similar to the local EMAs but is also responsible for mobilizing state military support as well as State Disaster Center operations.

5.10 Law Enforcement

Local Law Enforcement agencies are notified by the appropriate EMA. Alabama EMA notifies the State Patrol as well as the Alabama Department of Transportation (ALDOT). Law Enforcement is responsible for traffic control and can assist with evacuation, mitigation, and rescue activities.

6.0 NOTIFICATION PROCEDURES

Communication during an emergency event will primarily be by company phone. In the event of system failure, Southern Linc radios and cell phones would be utilized as an alternate method of communication.

Local and state EMA will be notified in the event of an emergency, and these agencies will be responsible for notifying the public. In the event of an imminent failure, local and state EMAs will be notified to immediately begin evacuation procedures. APC Corporate Communications will provide information for media outlets and will be responsible for communicating relevant information to the public.

6.1 Incident Response Flowchart for Imminent Failure and Potential Failure Emergencies

Personnel responsible for executing mitigation and/or emergency actions shall be thoroughly familiar with their responsibilities under this EAP.

A. When an issue is detected, notify plant personnel in accordance with the Incident Response Flowchart (below and in Appendix C). Plant Environmental Compliance should contact SCS T&PS Dam Safety immediately for technical consultation. Dam Safety will provide the evaluation of the conditions and provide a determination if there is an immediate threat to the dam/dike. If there is an immediate threat of dam/dike or dike failure, declare an **Imminent Failure Emergency** and proceed to Step I.

B. If no immediate threat is detected, determine if the problem detected could possibly lead to failure of the dam/dike. If there is a potential for failure but corrective measures may be taken to moderate or alleviate failure, declare a **Potential Failure Emergency (Condition B)** and proceed to Step C.

C. If a **Potential Failure Emergency** has been declared, notify personnel and agencies listed on the Response Notification Flowchart (Appendix D). Document all communications using the appropriate forms contained in Appendix E. Once outside agencies have been notified of an issue or potential problem, plant management is responsible for keeping local EMAs informed of any change in conditions.

D. Begin corrective measures to attempt to alleviate or prevent failure.

E. Evaluate the effectiveness of the corrective measures. If the corrective actions are successful, update all personnel/agencies previously contacted of the status of the improved conditions and document relevant communications using the forms provided in Appendix E. At this time, the Incident Commander will end the emergency condition. Dam Safety will be responsible for preparing the after-action report.

F. If the corrective measures are not effective, Dam Safety will determine if there is time to take additional corrective measures.

G. If there is not time to take additional corrective measures and failure is imminent, declare an **Imminent Failure Emergency** (Condition A) and proceed to Step I.

H. If there is time to implement additional corrective measures, return to Step E. Additional support can be requested from Civil Field Services or outside contractors, as needed.

I. If an **Imminent Failure Emergency** has been declared by the Incident Commander, ensure that all personnel have been moved to a safe area and perform notifications per the Response Notification Flowchart (Appendix D). Document all communications using the appropriate forms contained in Appendix E. Once outside agencies have been notified of a problem or potential problem, the Incident Commander is responsible for keeping local EMAs informed of any change in conditions. Dam Safety will be responsible for preparing the after-action report.

6.2 Additional Considerations

All communication shall be documented using the *Data Recording Sheet* located in Appendix E.

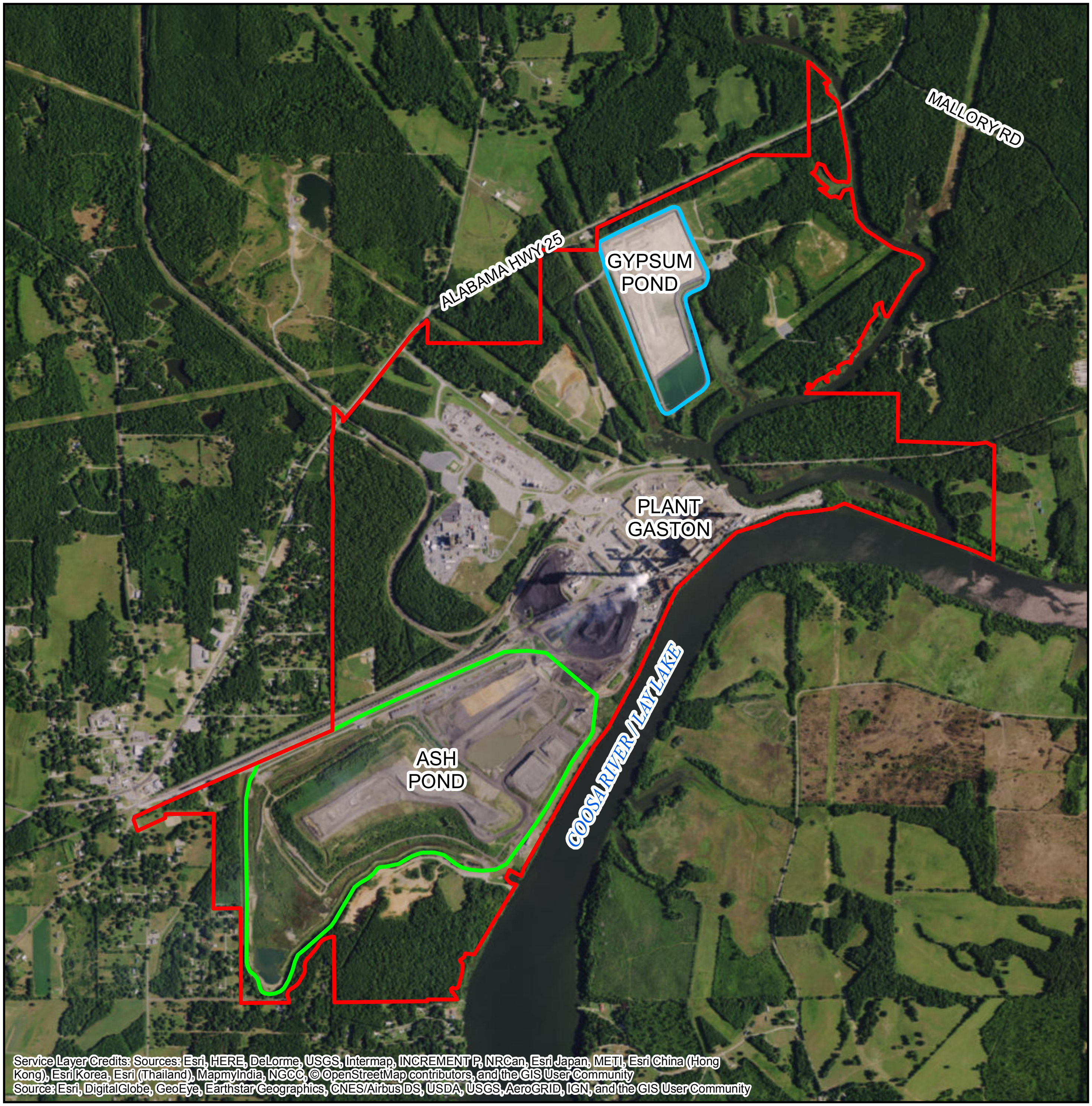
7.0 PROVISIONS FOR ANNUAL COORDINATION MEETING

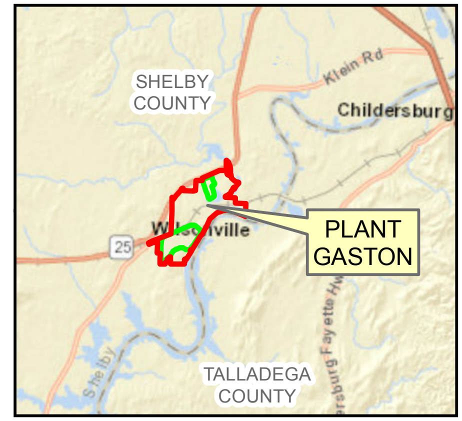
An annual face-to-face meeting will be held with representatives of Plant Gaston, APC, and local emergency responders. The representatives may include:

- Plant Gaston Plant Manager and Team Leaders
- Plant Gaston Emergency Response Team
- APC Environmental Affairs
- APC Corporate Communications
- Southern Company Services Dam Safety
- Local Emergency Responders

APPENDIX A

Plant Gaston Location Map – Figure 1
Ash Pond Overview – Figure 2





0 2.5 5
Miles
1 in = 5 miles

LEGEND

- Plant Boundary
- Ash Pond
- Gypsum Pond

N

0 1,000 2,000 4,000
Feet

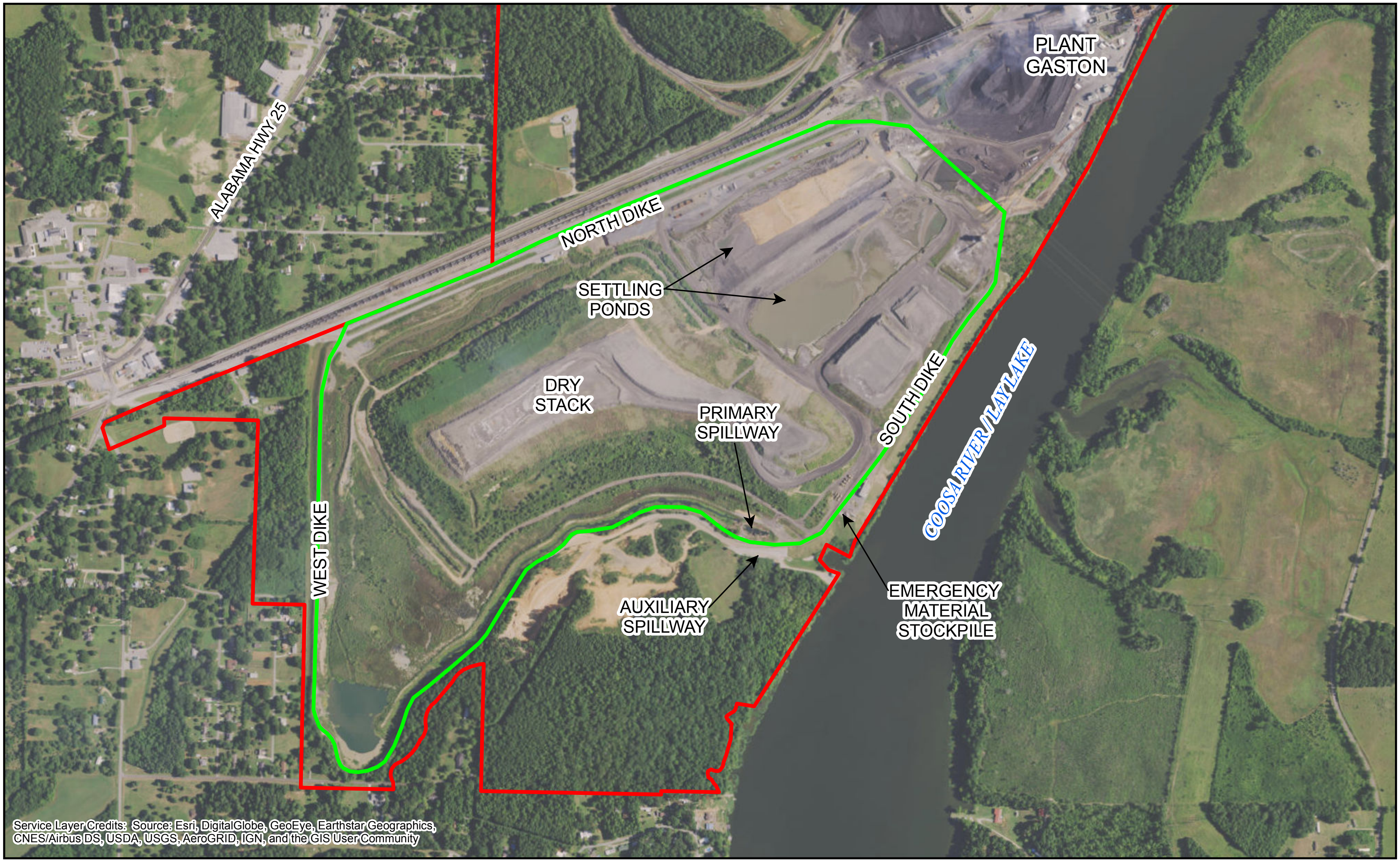
1 inch = 2,000 feet

NOTE: Right-of-way boundaries are included within plant boundary for clarity.

FIGURE 1
PLANT GASTON LOCATION MAP
SHELBY COUNTY, ALABAMA

Southern Company Services
FOR

Alabama Power Company



LEGEND

Approximate Ash Pond Boundary

Approximate Plant Boundary

N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

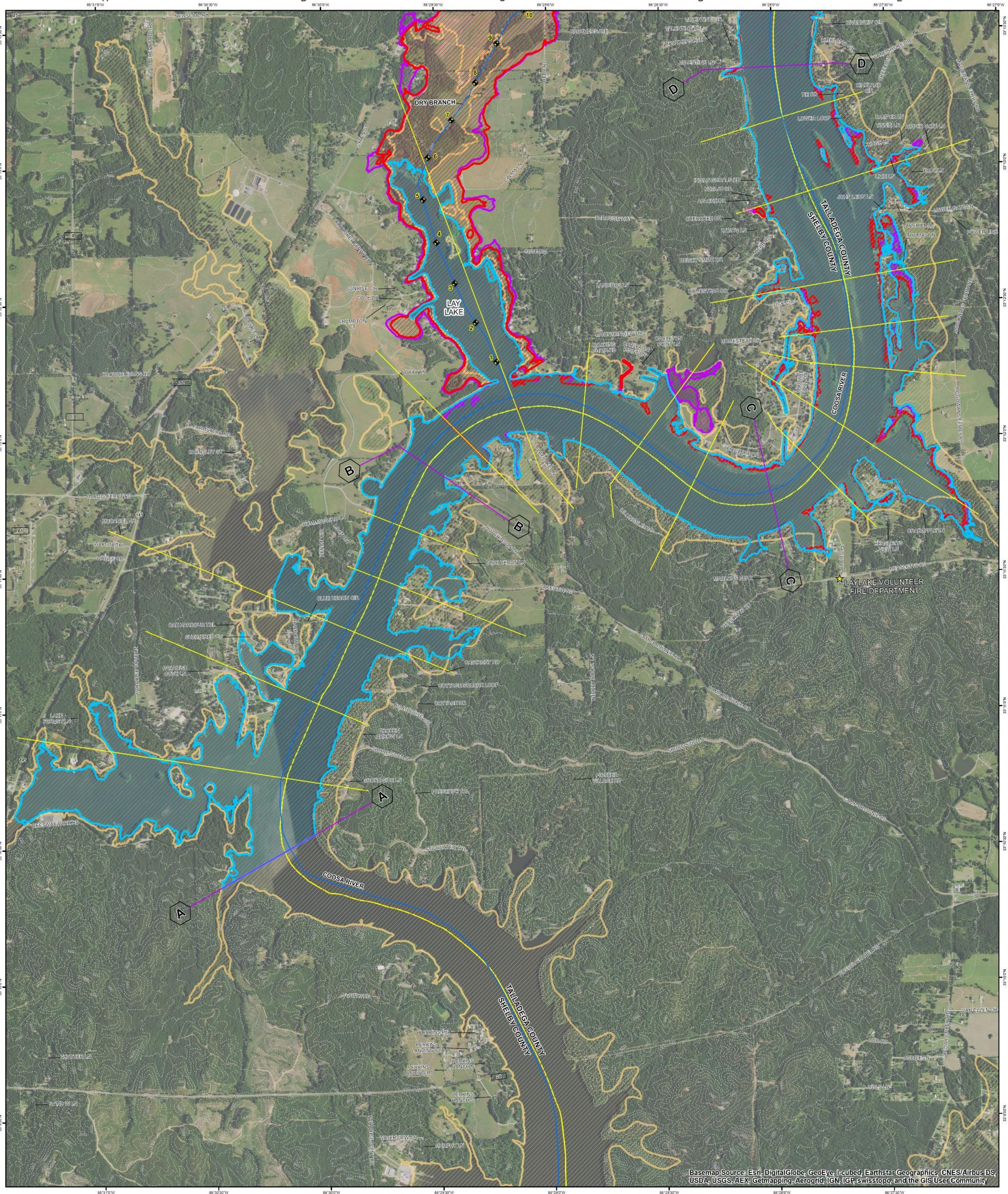
FIGURE 2
ASH POND OVERVIEW
PLANT GASTON
SHELBY COUNTY, GEORGIA

Southern Company Services
FOR
Alabama Power Company

APPENDIX B

Inundation Maps

Panel 1 – Southwest of Plant Gaston
Panel 2 -Wilsonville and Plant Gaston
Panel 3 – East of Plant Gaston



South Embankment Design Storm Breach						
Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[4] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase[1]
A[2]	6.14	0.42	3.63	393.0	396.2	3.2
B[2]	4.33	0.25	3.72	393.9	397.0	3.1
C[2]	2.60	0.17	3.32	394.6	398.0	3.4
D[2]	0.58	0.08	3.20	395.7	400.1	4.4
E[3]	0.00	0.00	3.03	397.4	401.4	4.0
F[3]	0.68	0.08	3.15	398.0	402.0	4.0
G[3]	1.76	0.17	3.20	399.1	402.4	3.3
H[3]	3.56	0.33	3.40	399.8	403.9	4.1

[1] Comparison between the breach and non-breach scenarios
[2] Cross-sections on the Coosa River downstream of Gaston Ash Pond East Embankment
[3] Cross-sections on the Coosa River upstream of Gaston Ash Pond East Embankment
[4] The non-breach water-surface elevations simulate a 10-year event

North Embankment Design Storm Breach						
Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[5] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase
1	2.91	1.25	3.67	N/A	403.1	6.7[4]
2	2.73	1.25	3.67	N/A	403.5	7.3[4]
3	2.54	1.17	3.67	N/A	403.8	7.4[4]
4	2.35	1.08	3.58	N/A	404.3	7.7[4]
5	2.16	1.08	3.50	N/A	405.1	8.6[4]
6	1.97	0.92	3.42	N/A	408.7	6.5[4]
7	1.78	0.75	3.08	N/A	412.8	7.4[4]
8	1.59	0.67	2.92	N/A	416.9	11.0[4]
9	1.40	0.67	2.92	N/A	418.5	9.9[4]
10	1.21	0.50	2.83	N/A	422.3	12.6[4]
11	1.02	0.50	2.75	N/A	425.0	14.0[4]
12	0.83	0.42	2.75	N/A	426.8	14.5[4]
14	0.76	0.42	2.75	N/A	427.1	14.9[4]
15	0.57	0.42	2.75	N/A	427.6	12.9[4]
16	0.38	0.33	2.75	N/A	427.9	8.4[4]
17	0.19	0.25	2.67	N/A	429.2	11.0[4]
18	0.00	0.17	2.58	N/A	430.6	11.0[4]
A[2]	2.21	1.83	5.47	393.0	394.5	1.5[1]
B[2]	0.43	1.67	5.43	393.9	395.3	1.4[1]
C[3]	1.28	1.50	5.38	394.6	397.3	2.6[1]

[1] Comparison between the breach and non-breach scenarios
[2] Cross-sections on the Coosa River downstream of Gaston Ash Pond North Embankment 2D/1D connection
[3] Cross-sections on the Coosa River upstream of Gaston Ash Pond North Embankment 2D/1D connection
[4] Depth of flooding for the 2D mesh area
[5] The non-breach water-surface elevations simulate a 10-year event

West Embankment Design Storm Breach						
Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[5] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase
1	2.27	0.75	3.50	N/A	405.1	8.8[4]
2	2.08	0.75	3.50	N/A	405.8	9.6[4]
3	1.89	0.75	3.50	N/A	406.3	9.8[4]
4	1.70	0.67	3.42	N/A	406.9	10.3[4]
5	1.52	0.58	3.42	N/A	407.6	11.4[4]
6	1.33	0.50	3.33	N/A	408.1	9.3[4]
7	1.14	0.33	3.17	N/A	410.7	9.7[4]
8	0.95	0.33	3.00	N/A	417.0	10.4[4]
9	0.76	0.25	2.92	N/A	419.2	11.1[4]
10	0.57	0.17	2.92	N/A	422.6	12.9[4]
11	0.38	0.17	2.83	N/A	426.4	15.4[4]
12	0.19	0.08	2.83	N/A	428.8	16.4[4]
13	0.00	0.08	2.83	N/A	429.3	14.0[4]
A[2]	2.21	1.00	3.96	393.0	395.3	2.3[1]
B[2]	0.43	0.83	3.93	393.9	396.1	2.2[1]
C[3]	1.30	0.83	3.83	394.6	398.1	3.5[1]

[1] Comparison between the breach and non-breach scenarios
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[4] Depth of flooding for the 2D mesh area
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SOUTHERN COMPANY

Projection
State Plane Alabama East FIPS 0101

Issue Date: November 22, 2016

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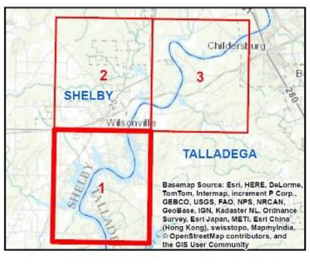
Plant Gaston

Ash Pond Dam Inundation Analysis

Shelby and Talladega Counties

0 500 1,000 2,000 3,000 4,000 Feet

NOT TO SCALE



- Critical Facility
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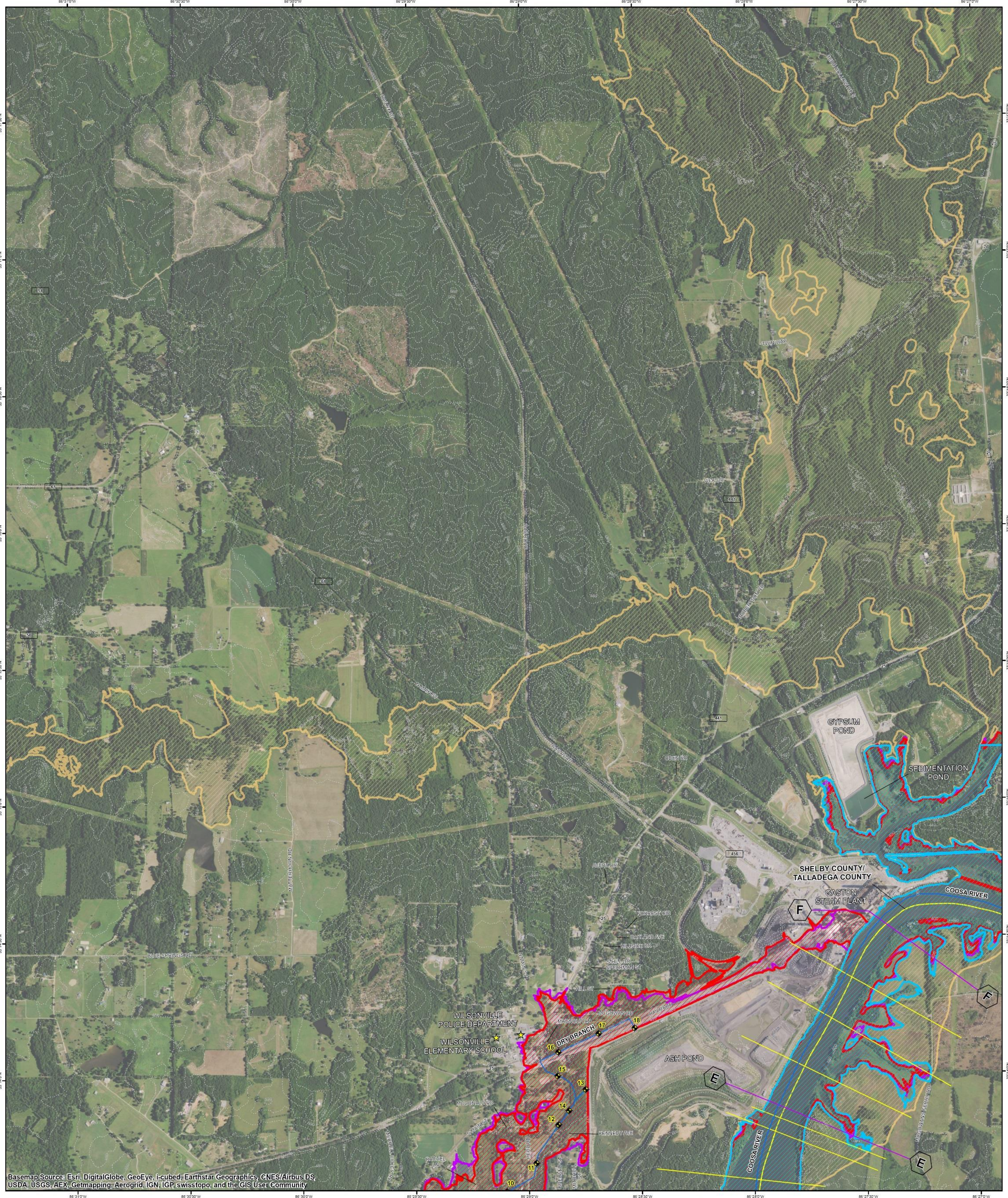

South Embankment Design Storm Breach

Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[4] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase[1]
A[2]	6.14	0.42	3.63	393.0	396.2	3.2
B[2]	4.33	0.25	3.72	393.9	397.0	3.1
C[2]	2.60	0.17	3.32	394.6	398.0	3.4
D[2]	0.58	0.08	3.20	395.7	400.1	4.4
E[3]	0.00	0.00	3.03	397.4	401.4	4.0
F[3]	0.68	0.08	3.15	398.0	402.0	4.0
G[3]	1.76	0.17	3.20	399.1	402.4	3.3
H[3]	3.56	0.33	3.40	399.8	403.9	4.1

[1] Comparison between the breach and non-breach scenarios
[2] Cross-sections on the Coosa River downstream of Gaston Ash Pond East Embankment
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North Embankment Design Storm Breach

Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[5] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase
1	2.91	1.25	3.67	N/A	403.1	6.7[4]
2	2.73	1.25	3.67	N/A	403.5	7.3[4]
3	2.54	1.17	3.67	N/A	403.8	7.4[4]
4	2.35	1.08	3.58	N/A	404.3	7.7[4]
5	2.16	1.08	3.50	N/A	405.1	8.6[4]
6	1.97	0.92	3.42	N/A	408.7	6.5[4]
7	1.78	0.75	3.08	N/A	412.8	7.4[4]
8	1.59	0.67	2.92	N/A	416.9	11.0[4]
9	1.40	0.67	2.92	N/A	418.5	9.9[4]
10	1.21	0.50	2.83	N/A	422.3	12.6[4]
11	1.02	0.50	2.75	N/A	425.0	14.0[4]
12	0.83	0.42	2.75	N/A	426.8	14.5[4]
14	0.76	0.42	2.75	N/A	427.1	14.9[4]
15	0.57	0.42	2.75	N/A	427.6	12.9[4]
16	0.38	0.33	2.75	N/A	427.9	8.4[4]
17	0.19	0.25	2.67	N/A	429.2	11.0[4]
18	0.00	0.17	2.58	N/A	430.6	11.0[4]
A[2]	2.21	1.83	5.47	393.0	394.5	1.5[1]
B[2]	0.43	1.67	5.43	393.9	395.3	1.4[1]
C[3]	1.28	1.50	5.38	394.6	397.3	2.6[1]

[1] Comparison between the breach and non-breach scenarios
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West Embankment Design Storm Breach

Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[5] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase
1	2.27	0.75	3.50	N/A	405.1	8.8[4]
2	2.08	0.75	3.50	N/A	405.8	9.6[4]
3	1.89	0.75	3.50	N/A	406.3	9.8[4]
4	1.70	0.67	3.42	N/A	406.9	10.3[4]
5	1.52	0.58	3.42	N/A	407.6	11.4[4]
6	1.33	0.50	3.33	N/A	408.1	9.3[4]
7	1.14	0.33	3.17	N/A	410.7	9.7[4]
8	0.95	0.33	3.00	N/A	417.0	10.4[4]
9	0.76	0.25	2.92	N/A	419.2	11.1[4]
10	0.57	0.17	2.92	N/A	422.6	12.9[4]
11	0.38	0.17	2.83	N/A	426.4	15.4[4]
12	0.19	0.08	2.83	N/A	428.8	16.4[4]
13	0.00	0.08	2.83	N/A	429.3	14.0[4]
A[2]	2.21	1.00	3.96	393.0	395.3	2.3[1]
B[2]	0.43	0.83	3.93	393.9	396.1	2.2[1]
C[3]	1.30	0.83	3.83	394.6	398.1	3.5[1]

[1] Comparison between the breach and non-breach scenarios
[2] Cross-sections on the Coosa River downstream of Gaston Ash Pond North Embankment 2D/1D connection
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SOUTHERN COMPANY

Projection
State Plane Alabama East FIPS 0101

Issue Date: November 22, 2016 Page 2 of 3

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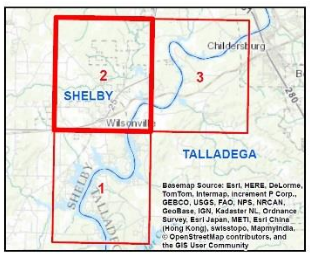
Plant Gaston

Ash Pond Dam Inundation Analysis

Shelby and Talladega Counties

0 500 1,000 2,000 3,000 4,000 Feet

NOT TO SCALE



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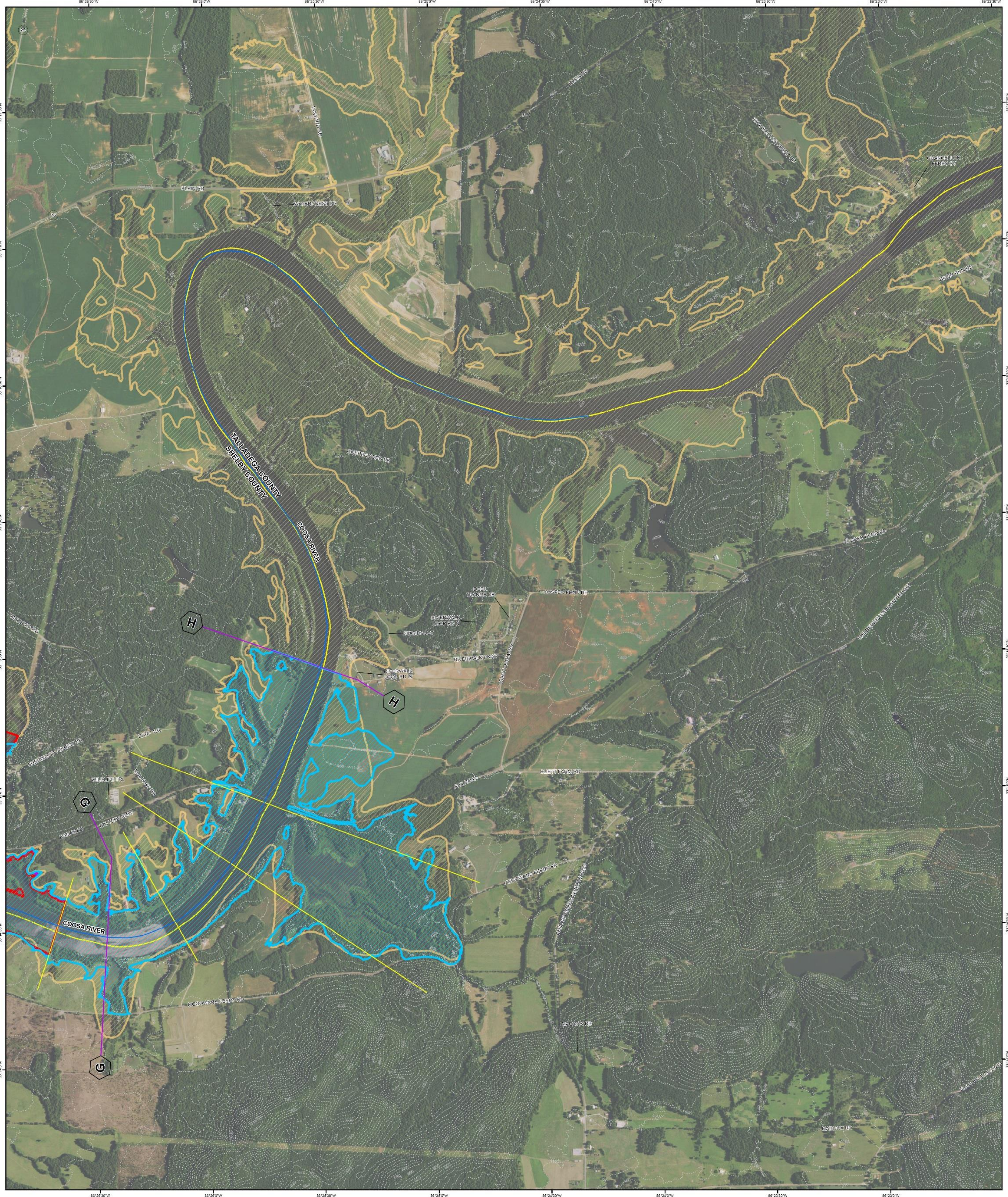

South Embankment Design Storm Breach						
Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[4] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase[1]
A[2]	6.14	0.42	3.63	393.0	396.2	3.2
B[2]	4.33	0.25	3.72	393.9	397.0	3.1
C[2]	2.60	0.17	3.32	394.6	398.0	3.4
D[2]	0.58	0.08	3.20	395.7	400.1	4.4
E[3]	0.00	0.00	3.03	397.4	401.4	4.0
F[3]	0.68	0.08	3.15	398.0	402.0	4.0
G[3]	1.76	0.17	3.20	399.1	402.4	3.3
H[3]	3.56	0.33	3.40	399.8	403.9	4.1

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North Embankment Design Storm Breach						
Node/Cross-Section Label	Distance from Dam (miles)	Time to Initial Wave (hours)	Time to Max Wave (hours)	Non-Breach[5] WSEL (NAVD, feet)	Max Breach WSEL (NAVD, feet)	Elevation Increase
1	2.91	1.25	3.67	N/A	403.1	6.7[4]
2	2.73	1.25	3.67	N/A	403.5	7.3[4]
3	2.54	1.17	3.67	N/A	403.8	7.4[4]
4	2.35	1.08	3.58	N/A	404.3	7.7[4]
5	2.16	1.08	3.50	N/A	405.1	8.6[4]
6	1.97	0.92	3.42	N/A	408.7	6.5[4]
7	1.78	0.75	3.08	N/A	412.8	7.4[4]
8	1.59	0.67	2.92	N/A	416.9	11.0[4]
9	1.40	0.67	2.92	N/A	418.5	9.9[4]
10	1.21	0.50	2.83	N/A	422.3	12.6[4]
11	1.02	0.50	2.75	N/A	425.0	14.0[4]
12	0.83	0.42	2.75	N/A	426.8	14.5[4]
14	0.76	0.42	2.75	N/A	427.1	14.9[4]
15	0.57	0.42	2.75	N/A	427.6	12.9[4]
16	0.38	0.33	2.75	N/A	427.9	8.4[4]
17	0.19	0.25	2.67	N/A	429.2	11.0[4]
18	0.00	0.17	2.58	N/A	430.6	11.0[4]
A[2]	2.21	1.83	5.47	393.0	394.5	1.5[1]
B[2]	0.43	1.67	5.43	393.9	395.3	1.4[1]
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1	2.27	0.75	3.50	N/A	405.1	8.8[4]
2	2.08	0.75	3.50	N/A	405.8	9.6[4]
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8	0.95	0.33	3.00	N/A	417.0	10.4[4]
9	0.76	0.25	2.92	N/A	419.2	11.1[4]
10	0.57	0.17	2.92	N/A	422.6	12.9[4]
11	0.38	0.17	2.83	N/A	426.4	15.4[4]
12	0.19	0.08	2.83	N/A	428.8	16.4[4]
13	0.00	0.08	2.83	N/A	429.3	14.0[4]
A[2]	2.21	1.00	3.96	393.0	395.3	2.3[1]
B[2]	0.43	0.83	3.93	393.9	396.1	2.2[1]
C[3]	1.30	0.83	3.83	394.6	398.1	3.5[1]

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SOUTHERN COMPANY

Projection
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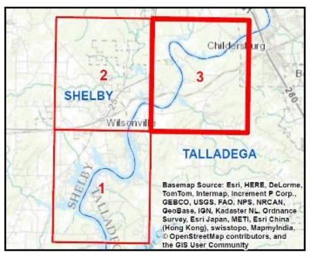
Ash Pond Dam Inundation Analysis

Shelby and Talladega Counties

0 500 1,000 2,000 3,000 4,000 Feet

NOT TO SCALE



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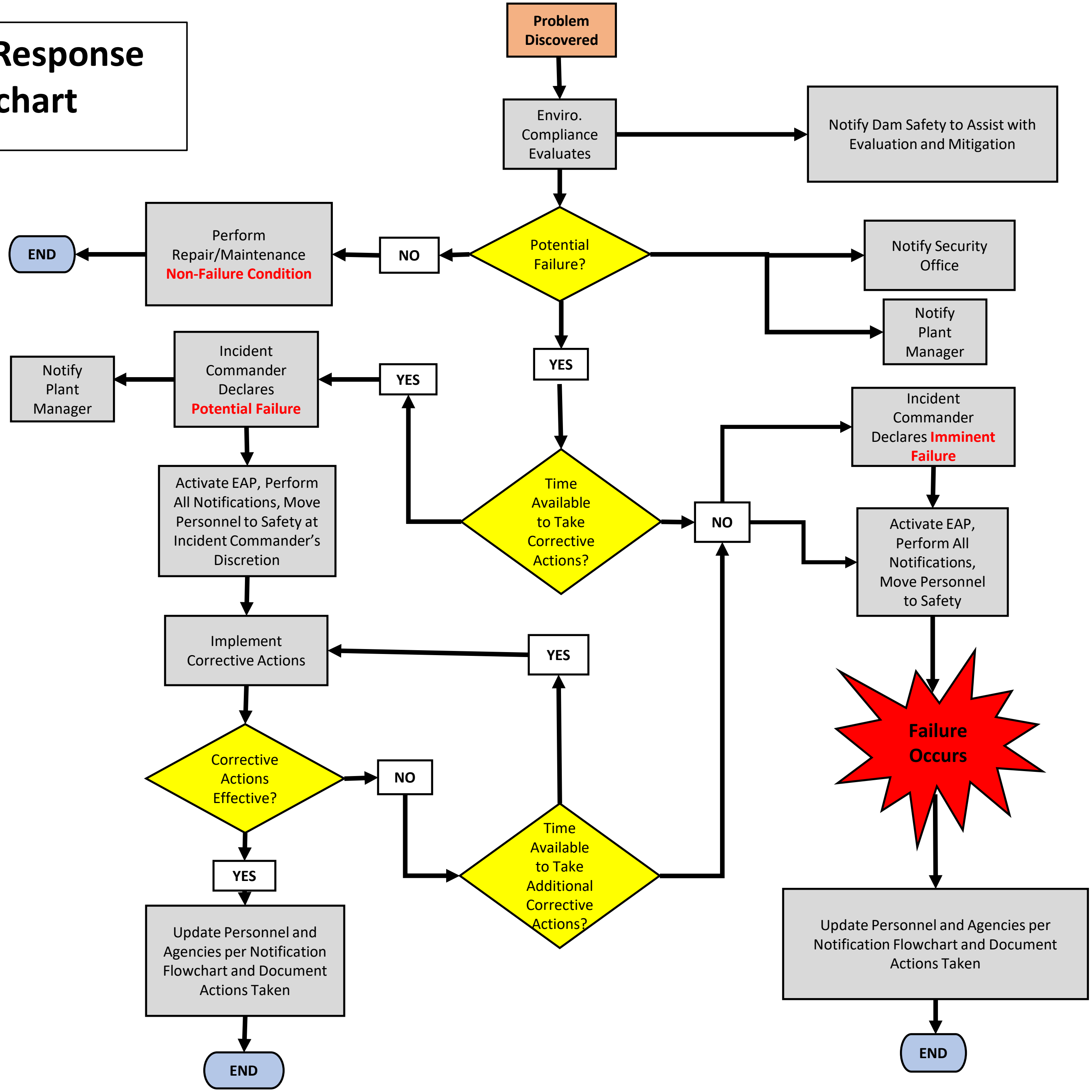
APPENDIX C

Incident Response Flowchart

Incident Response Flowchart

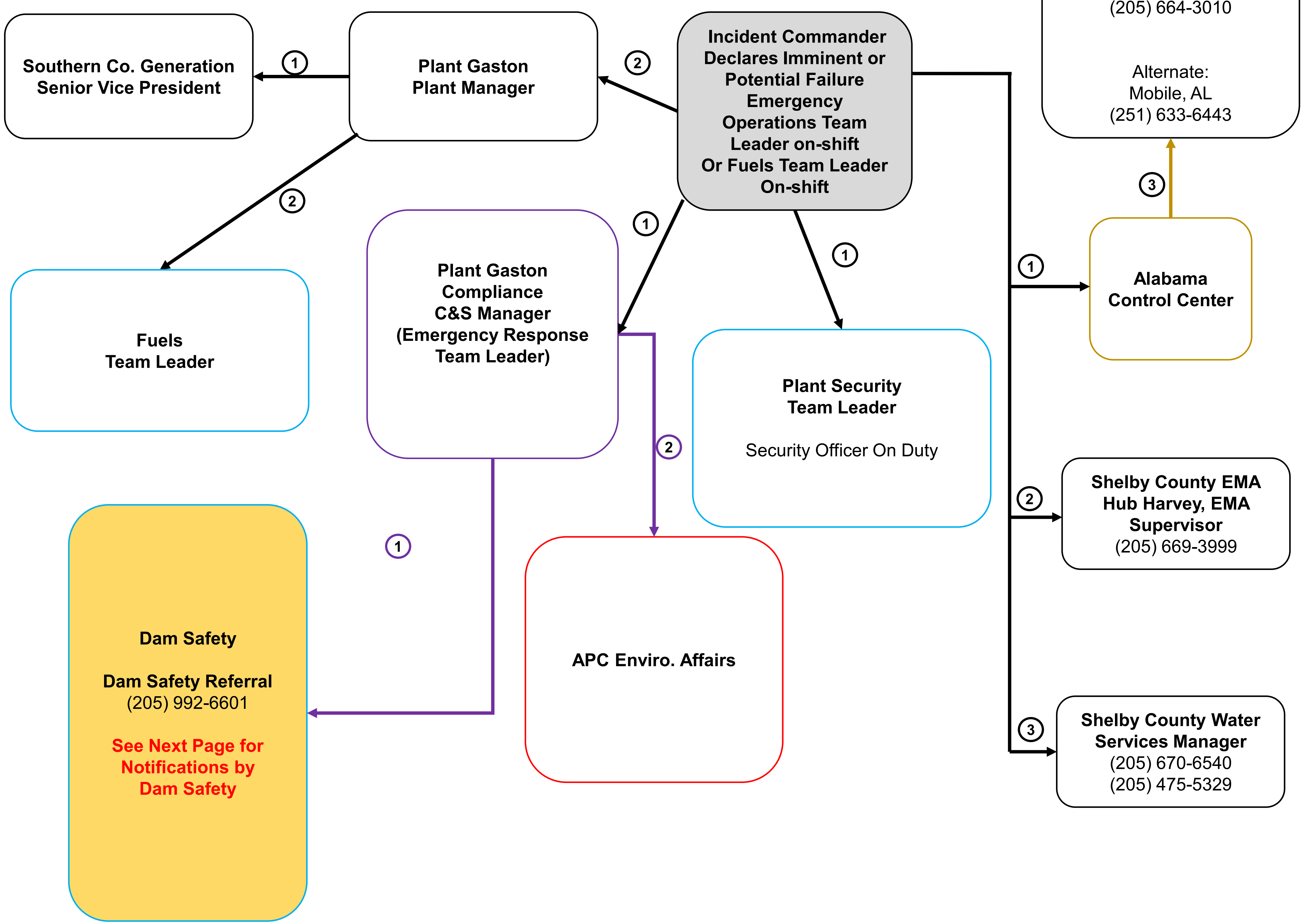


APPENDIX D

Response Notification Flowchart

Response Notification Flowchart

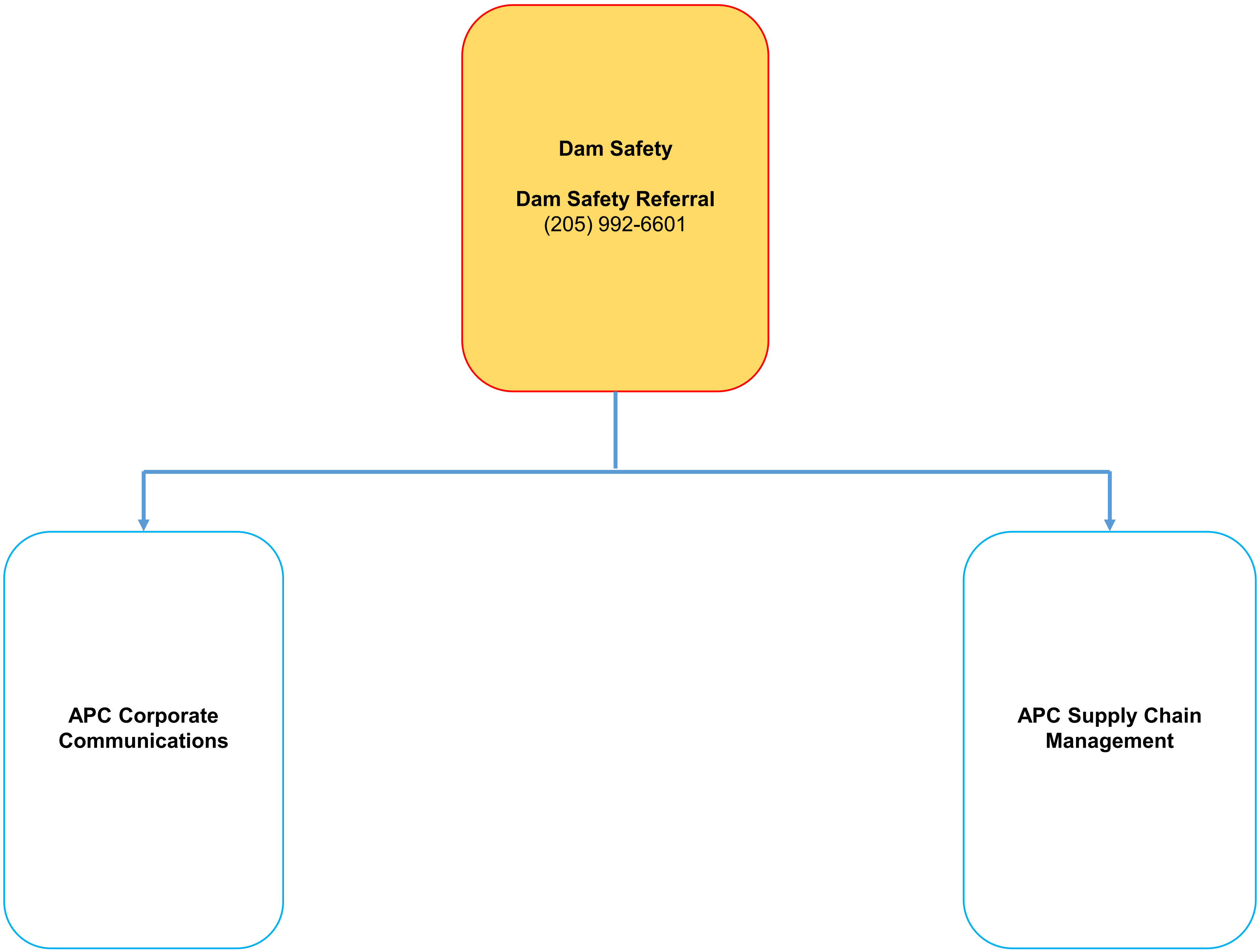
Imminent Failure or Potential Failure Emergencies



Response Notification Flowchart

Imminent Failure or Potential Failure Emergencies

Fossil Dam Safety Notifications



APPENDIX E

Emergency Notification Log Sheet
Data Recording Sheet

EMERGENCY ACTION PLAN
EMERGENCY NOTIFICATION LOG SHEET

The Emergency Notification Log Sheet is for use in an event of an emergency to document notifications. *Please refer to the Response Notification Flowchart for name and numbers of agencies / personnel to be contacted.* **All notifications must be documented.**

TO BE USED BY PLANT MANAGER / INCIDENT COMMANDER:

Agency Notified	Date	Time	Person Contacted	Contacted By	Comments
Plant Manager					
SCS SVP / SPO					

TO BE USED BY INCIDENT COMMANDER:

Agency Notified	Date	Time	Person Contacted	Contacted By	Comments
Environmental Compliance					
Alabama System Operator					
Shelby County EMA					
Security Office					

EMERGENCY ACTION PLAN
EMERGENCY NOTIFICATION LOG SHEET

The Emergency Notification Log Sheet is for use in an event of an emergency to document notifications. *Please refer to the Response Notification Flowchart for name and numbers of agencies / personnel to be contacted.* **All notifications must be documented.**

TO BE USED BY ENVIRONMENTAL COMPLIANCE:

Agency Notified	Date	Time	Person Contacted	Contacted By	Comments
Dam Safety					
APC Enviro. Affairs					

TO BE USED BY ALABAMA SYSTEM OWNER:

Agency Notified	Date	Time	Person Contacted	Contacted By	Comments
National Weather Service					

EMERGENCY ACTION PLAN
EMERGENCY NOTIFICATION LOG SHEET

The Emergency Notification Log Sheet is for use in an event of an emergency to document notifications. *Please refer to the Response Notification Flowchart for name and numbers of agencies / personnel to be contacted.* **All notifications must be documented.**

TO BE USED BY SCS DAM SAFETY:

Agency Notified	Date	Time	Person Contacted	Contacted By	Comments
APC Corporate Communications					
APC Supply Chain Management					

EMERGENCY ACTION PLAN
DATA RECORDING SHEET

The Data Recording Sheet will be used to record important information relating to dam safety emergency.

Team Member(s): ______________________________

Date of Incident: ______________________________

Time of Incident: ______________________________

Type of Emergency: ______________________________

Emergency Coordinator: ______________________________

Description of Events:* ______________________________

____

____

____

____

What is Being Done:* ______________________________

____

____

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____

*Attach additional pages as necessary.

For incoming questions, refer all calls to:

Media Inquiries:	Alabama Power Company Corporate Communications
EMA Inquiries:	Plant Manager/Incident Commander
Environmental Agency Inquiries:	APC Environmental Affairs

APPENDIX F

Instructions for the Construction of an Emergency Reverse Filter

EMERGENCY REVERSE FILTER CONSTRUCTION

The purpose of the reverse filter is to slow down the flow of water in order to reduce the ability of the water to carry soil particles. The size of the soil particle that a flow of water can carry is a function of the 3rd power of the velocity of the flow. The slower the velocity, the less soil the water can carry. The other function of the filter is to trap soil particles before they exit.

The usual components of a reverse filter are as follows:

- ALDOT No. 100 concrete sand
- # 89 stone
- # 57 stone
- ALDOT Class I 3 riprap (not required, utilize if available)

These materials should be stockpiled in a location where they can easily and quickly be moved to the seepage site. Two truckloads of each type of material should be stored in a convenient location that is out of the way. It is best if they are located so that a backhoe or front end loader can pick them up and transfer them directly to the seepage site. Transport schemes that require multiple vehicles and multiple operators are usually impossible to implement at night or on weekends. The stockpiles should be labeled "Emergency Filter Stockpile – Emergency Use Only" to keep them from being appropriated for other purposes by those unaware of their purpose.

To build a reverse filter over a boil or area of concentrated seepage, follow the directions below. A cross section of the reverse filter construction is provided on the next page.

1) Clear loose material from around the site.

2) Place 6" of ALDOT No. 100 concrete sand over the area of concern, and extend it for at least 12" beyond the seepage limits.

3) Place 6" of #89 stone over the sand, and extend it for at least 6" beyond the sand.

4) Place 6" of #57 stone over the sand, and extend it for at least 6" beyond the #89 stone.

5) If necessary to stabilize the #57 stone, place rip rap on top of the #57 stone. Conditions that may make the rip rap necessary are anticipated surface flows that might wash away the filter or increasing seepage flows that may try to shift the lighter filter materials.

If the flow is too fast for the sand to remain in place, a layer of #57 stone or ALDOT Class 1 - Class 3 riprap may be placed over the boil to slow the flow down. This is followed by a layer of #89 stone, then the sand, and then the #89, #57 and riprap in succession.

Sometimes a seep will pop out on the edge of a newly applied filter. In this case, it is generally necessary to apply the granular filter as a blanket to the general area rather than as a spot treatment. The layers are as described above but will cover a larger area.

Filter fabric or geotextile is not acceptable as a substitute for the sand. The fabric tends to smear and clog if applied in a wet situation.

CROSS SECTION OF A REVERSE FILTER OVER A SEEP OR BOIL