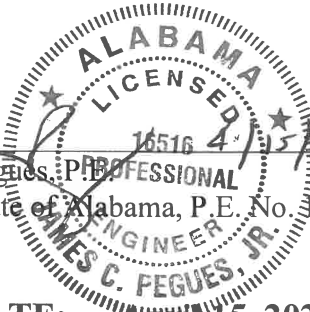


CCR SURFACE IMPOUNDMENT EMERGENCY ACTION PLAN

Plant Gorgas 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).


James C. Pegues, P.E.
Licensed State of Alabama, P.E. No. 16516
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 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 Plant status and ash pond closure-related activities

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Appendix A Figures

Figure 1 – Plant Gorgas Location Map

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Figure 3 – Ash Pond Detail Map

Appendix B Inundation Maps

Appendix C Incident Response Flowchart

Appendix D Response Notification Flowchart

Appendix E Notification and Documentation Forms

Emergency Notification Log Sheet

Data Recording Sheet

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 Gorgas 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 Gorgas 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 Plant Gorgas 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;
- Contact information for additional resources and outside agencies; and
- A map that delineates the downstream area that could be affected in the event of a failure.

2.0 FACILITY DESCRIPTION

Plant Gorgas previously served as a coal-fired power plant located near Parrish, Alabama. This EAP covers emergency response procedures for the Plant Gorgas Ash Pond (the Ash Pond), which was designed to receive and store coal combustion residuals produced during the electric generating process at Plant Gorgas. The Ash Pond is no longer operational and is now undergoing closure construction. An overview of Plant Gorgas and the surrounding area is shown in Appendix A – Figure 1. Please note that the plant has now been dismantled following its retirement from service.

The Ash Pond is approximately 420 acres in size at its normal pool elevation of 382 feet (Appendix A – Figure 2). It should be noted that the Ash Pond has a contributing drainage area of approximately 1,300 acres. The Ash Pond has a cross valley embankment along the northern end of the pond with a top of embankment elevation of 395.0 feet. The embankment was originally constructed as a rockfill structure in 1953 using local borrow and quarried materials. In the mid-1970's, the dam was raised to an elevation of 375 feet. In 2007, the dam was raised to an elevation of 395 feet. During this project, a 10-foot wide roller compacted concrete upstream facing block designed with a slope of 0.75H: 1V; a 30-foot thick clay core section; a 10-foot thick fine and coarse filter section; and additional downstream rockfill were used to accommodate the raising of the dam. The discharge system of the Ash Pond is located in the northeast portion of the pond and consists of the following features:

1. The primary spillway consists of a sharp crested riser weir of 12-foot length which conveys flow to a corrugated metal conduit. The top of the weir box coincides with the normal pool elevation of 382.0 feet. The conduit is 48-inches in diameter and has a length of approximately 190 feet divided into three segments.
2. The auxiliary spillway consists of two 7' x 5' box culverts with a 1% slope and an invert elevation of 385.0 feet. The receiving spillway is a 15' x 5' rectangular flume on a 55% slope.

The Ash Pond is included in the National Inventory of Dams with NID ID Number AL01662. There is no Safe Dams Program in the State of Alabama. The Ash Pond 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 misoperation of the facility. As displayed on the inundation maps included in Appendix B, there are many structures that could be impacted by the failure of the Ash Pond dam/dike or mis-operation of the surface impoundment. The flooding impacts are limited to an inundation area that is less than or equal to the 100-year floodplain indicated on FEMA's Flood Insurance Rate Maps. Bankhead Lock and Dam is located downstream of the Plant Gorgas Ash Pond along the Mulberry Fork of the Black Warrior River. Impacts due to a breach wave are unlikely to result in overtopping issues at this dam due to the impacts being less than the 100-year flood. There are no roads likely to be overtopped as a result of a sudden failure of the Ash Pond. The Ash Pond is located just above the Mulberry Fork of the Black Warrior River.

As stated previously, 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

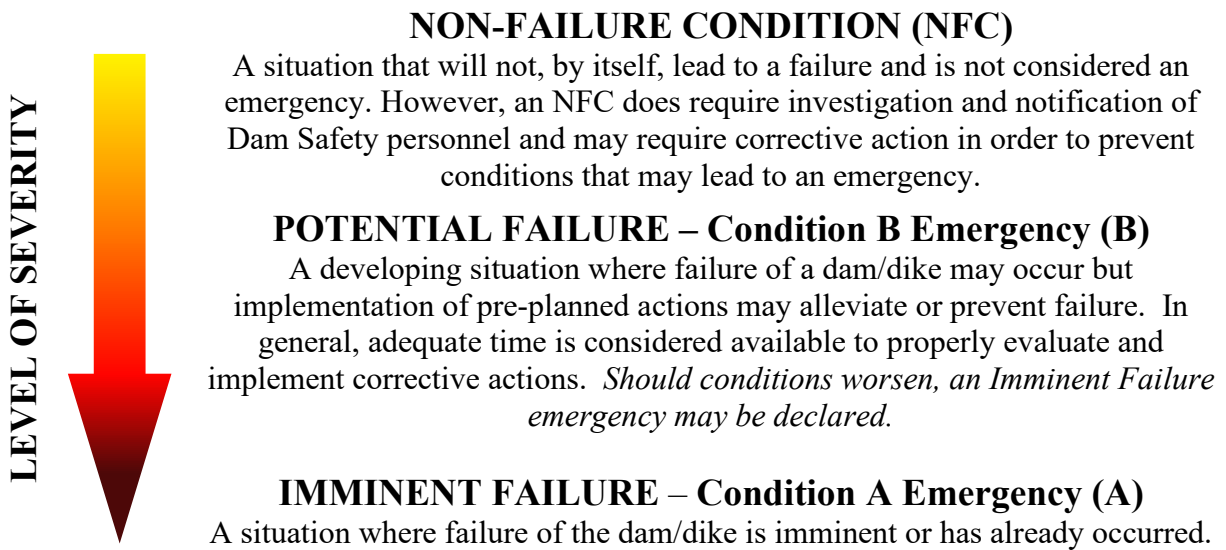
Trained personnel from Plant Gorgas inspect the Ash Pond dams/dike on a regular basis to pre-emptively detect conditions, in a timely manner, that could indicate a potential issue so that it can be addressed. Trained personnel from the Plant’s Environmental Compliance group perform weekly inspections; 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 conditions 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:



3.3 Guidance for Determining the Emergency 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 Condition Severity 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 drainage area of approximately 1,300 acres compared to a pond size of 420 acres. The Ash Pond receives and/or contains rainfall/stormwater runoff water used for sluicing ash, other process and drainage flows pumped from the plant, and submerged CCR. The auxiliary spillway is designed to safely pass 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. In addition, piezometer readings will reveal changes in subsurface water pressure. Inspection reports, including piezometer readings, 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, which would be 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

Figures 1 and 2 in Appendix A illustrate the location of the Ash Pond.

4.2 Response during Periods of Darkness

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

Personnel and equipment will be able to access the site at any time. The response times of certain personnel may be affected.

4.4 Response during Adverse Weather

The dam/dike is accessed by 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 and 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 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 Dam Emergency Response Team Leader

The Incident Commander shall assign a Dam 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.

5.3 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. The Plant Security Department will perform emergency notifications to Plant departments as appropriate.

5.4 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.

5.5 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.

5.6 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).

5.7 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.

5.8 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. Refer to the "Alabama Emergency Operations Plan" (AEOP) for an explanation of specific functions. 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.

5.9 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 a Condition B or Condition A situation is detected, notify plant personnel in accordance with the Incident Response Flowchart (below and in Appendix C). Plant Environmental Compliance should contact 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 or his designee, 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 or his designee 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 Gorgas, APC, and local emergency responders. The representatives may include:

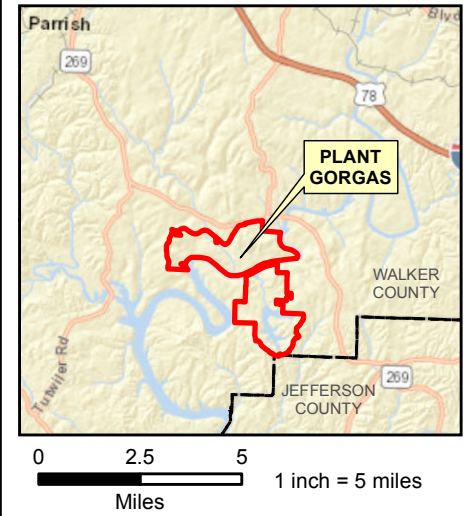
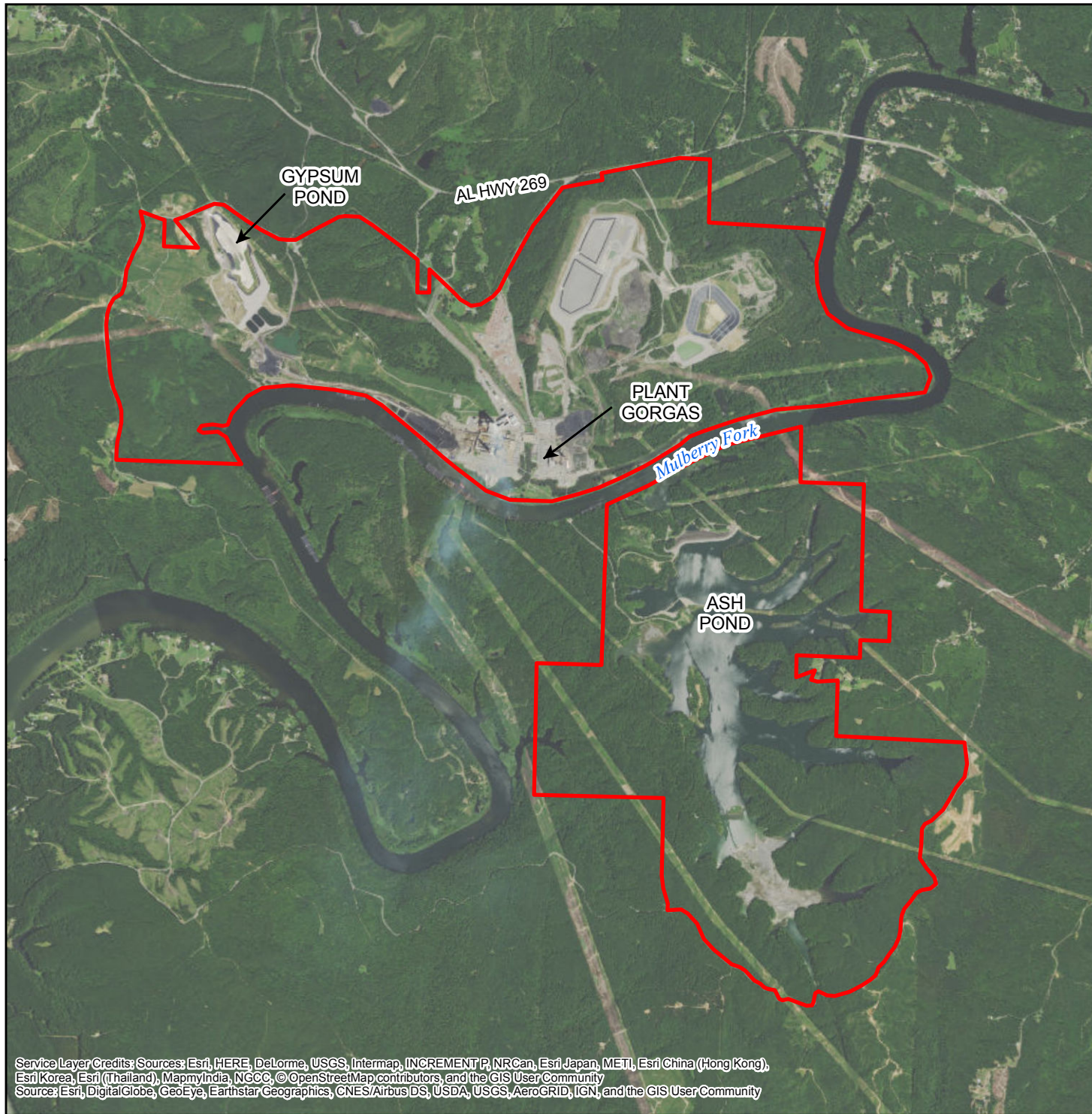
- Southern Company Services Dam Safety
- Plant Gorgas Plant Manager and Team Leaders
- Plant Gorgas Emergency Response Team
- Alabama Power Environmental Affairs
- Alabama Power Corporate Communications
- Local Emergency Responders

APPENDIX A

Plant Gorgas Location Map – Figure 1

Ash Pond Overview Map – Figure 2

Ash Pond Detail Map – Figure 3



LEGEND

 Plant Boundary

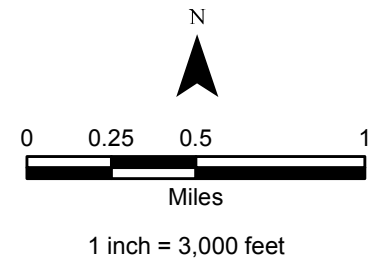
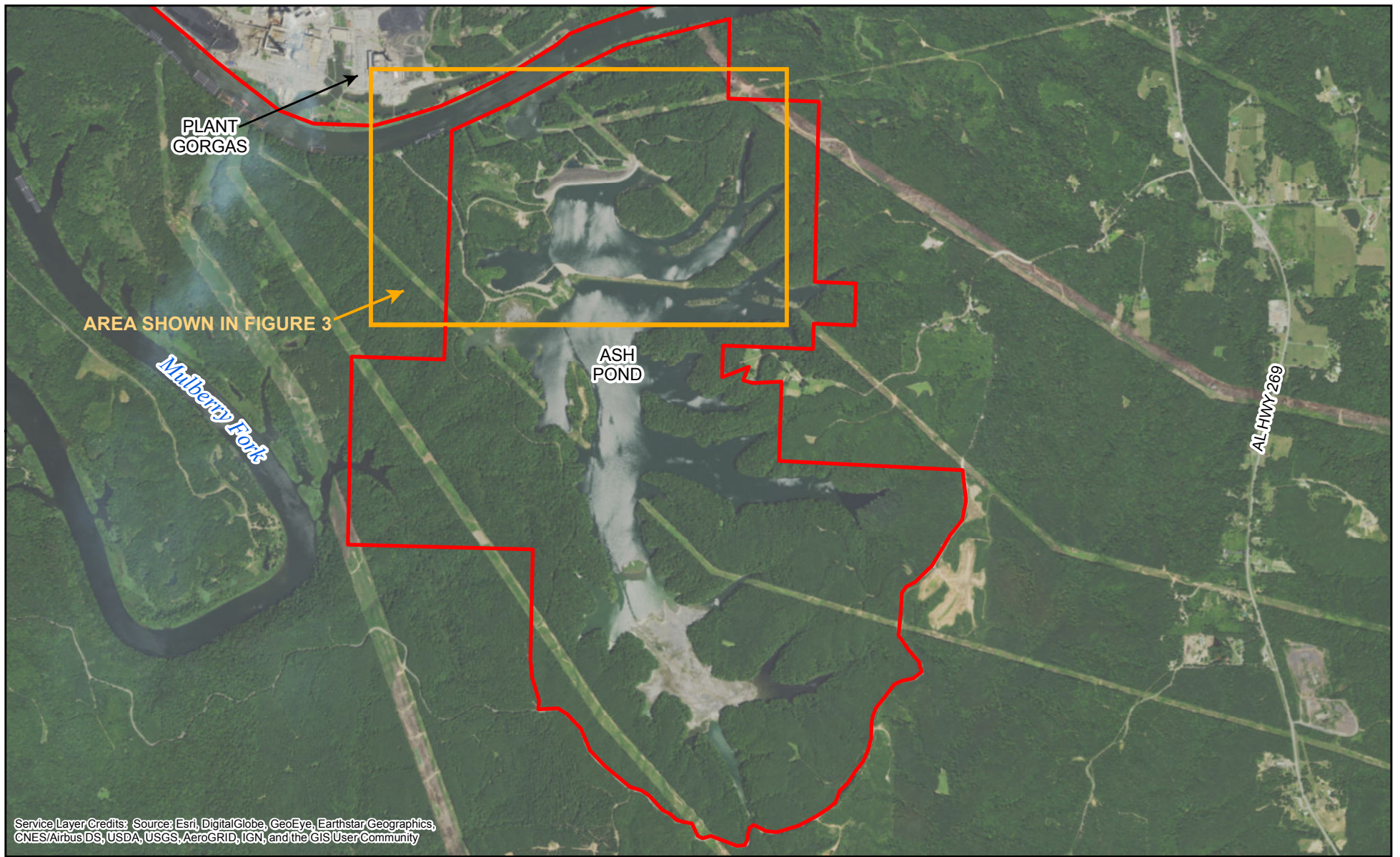



FIGURE 1
PLANT GORGAS LOCATION MAP
WALKER COUNTY, ALABAMA

**Southern Company Services
FOR
Alabama Power
Company**

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



LEGEND

 Plant Boundary

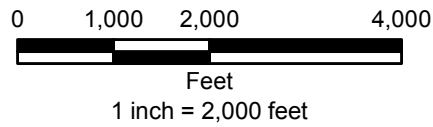


FIGURE 2
ASH POND MAP
PLANT GORGAS
WALKER COUNTY, ALABAMA

Southern Company Services
FOR
Alabama Power Company



LEGEND

- Approximate Plant Boundary
- Approximate Ash Pond Boundary

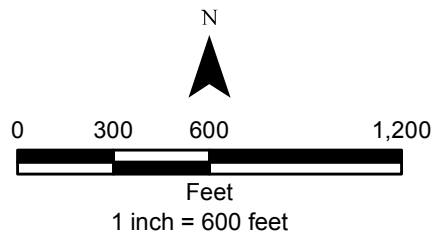


FIGURE 3
ASH POND DETAIL MAP
PLANT GORGAS
WALKER COUNTY, ALABAMA

Southern Company Services
FOR
Alabama Power Company

APPENDIX B

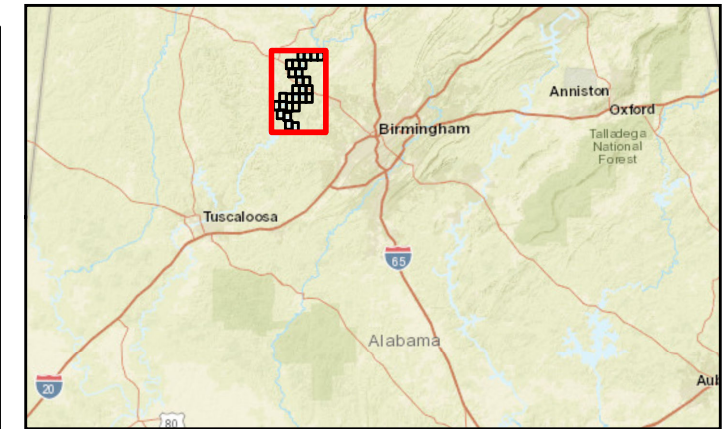
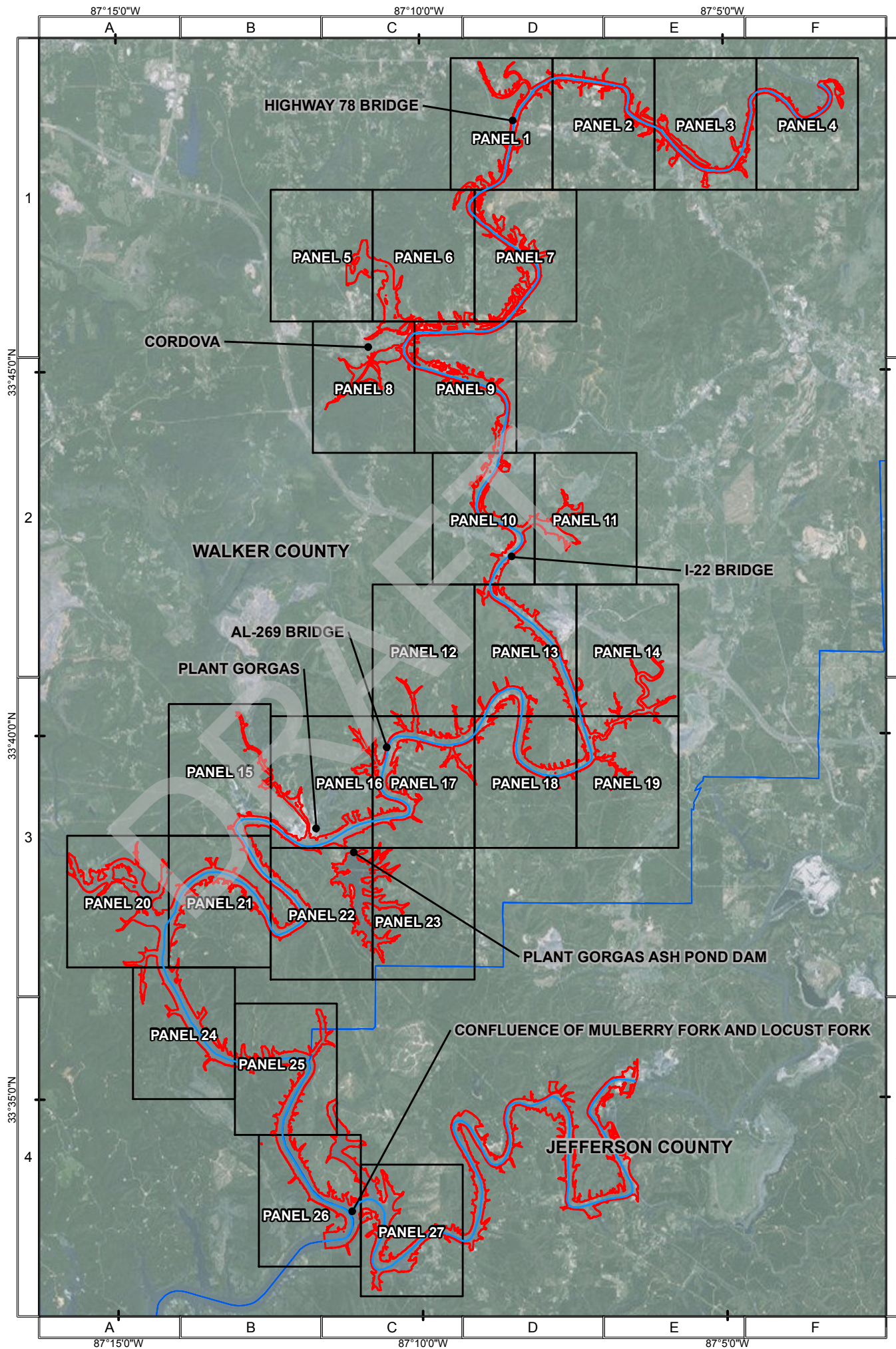
Inundation Maps

BREACH PROPAGATION INFORMATION

AREA OF INTEREST ID NUMBER	PANEL NUMBER	DISTANCE FROM BREACH*	TIME TO PEAK	BREACH WAVE ARRIVAL TIME**
#		MILES	HOURS	HOURS
1	4	29.9	2.98	2.42
2	4	29.7	2.97	2.42
3	1	22.3	2.38	1.83
4	8	16.7	1.98	1.42
5	8	16.7	1.98	1.42
6	8	16.6	1.98	1.33
7	8	16.5	1.98	1.33
8	8	16.5	1.97	1.33
9	8	16.5	1.97	1.33
10	9	15.6	1.93	1.17
11	10	13.3	1.80	1.08
12	10	13.2	1.79	1.08
13	10	11.4	1.68	0.92
14	13	9.9	1.61	0.83
15	19	8.1	1.53	0.75
16	19	7.9	1.52	0.75
17	19	7.6	1.50	0.67
18	18	6.7	1.46	0.58
19	13	4.6	1.36	0.50
20	18	4.2	1.34	0.42
21	17	3.6	1.31	0.33
22	17	3	1.28	0.33
23	17	2.5	1.26	0.25
24	17	2.4	1.26	0.25
25	17	2.1	1.24	0.25
26	17	2.1	1.24	0.25
27	17	1.3	1.20	0.17
28	16	-0.2	1.17	0.17
29	16	-0.5	1.17	0.08
30	21	-4.7	1.35	0.25
31	20	-6.9	1.46	0.50
32	20	-6.9	1.46	0.50
33	20	-7.2	1.48	0.67
34	20	-7.3	1.49	0.67
35	25	-10.6	1.65	0.67
36	25	-11.6	1.70	0.75
37	26	-13.8	1.79	0.75
38	27	-14.1	1.79	0.75
39	27	-14.3	1.80	0.75
40	27	-14.4	1.81	0.75
41	27	-14.5	1.82	0.92
42	27	-15.8	1.93	0.92
43	27	-15.9	1.94	0.92

* DISTANCE FROM BREACH IS TAKEN AS APPROXIMATE MILES ABOVE THE REACH ALONG THE RIVER CENTERLINE. NEGATIVE VALUES INDICATE THAT THE HAZARD IS DOWNSTREAM OF THE BREACH.

** WAVE ARRIVAL TIME IS CALCULATED AS THE TIME FROM BREACH FOR AN AREA TO EXPERIENCE A BREACH INDUCED 0.5 FOOT RISE IN WATER SURFACE LEVEL.



LEGEND

- SUNNY DAY BREACH
- MAP PANEL
- COUNTY

- NOTES**
- THIS MAP DEPICTS THE EXTENT OF THE MAXIMUM WATER SURFACE ELEVATION FROM A SUNNY DAY BREACH OF THE GORGAS ASH POND DAM.
 - MAPPING OF FLOODED AREAS AND FLOOD WAVE TRAVEL TIMES ARE APPROXIMATE AND SHOULD BE USED AS A GUIDANCE FOR ESTABLISHING EVACUATION ZONES.
 - ACTUAL AREAS INUNDATED WILL DEPEND ON FAILURE MODE AND PRE-FAILURE HYDROLOGIC CONDITIONS AND MAY DIFFER SIGNIFICANTLY FROM INFORMATION SHOWN ON THESE MAPS.

- REFERENCES**
- BREACH MODEL ADAPTED FROM A USACE HEC-RAS FLOOD MODEL PROVIDED BY SOUTHERN COMPANY SERVICES.
 - TOPOGRAPHY UTILIZED FOR MAPPING TAKEN FROM USGS QL2 LIDAR COLLECTED 12/2015 - 02/2016 BY DIGITAL AERIAL SOLUTIONS, LLC CONTRACT #G10PC00093 TASK ORDER #G15PD00518.
 - RIVER BASEFLOWS TAKEN FROM FEMA FIS 01127CV000B, WALKER COUNTY, AL. SUPPLEMENTARY FLOWS GATHERED FROM USGS STREAMSTATS.
 - AERIAL IMAGERY AND BASEMAP SOURCES: ESRI, HERE, DELORME, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), MAPMYINDIA, NGCC, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR

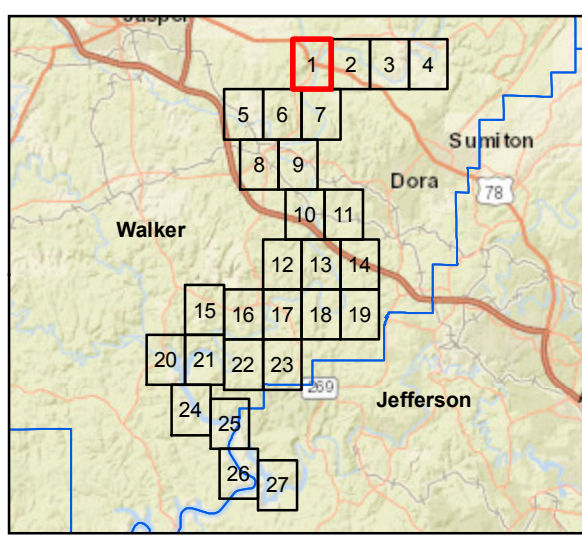
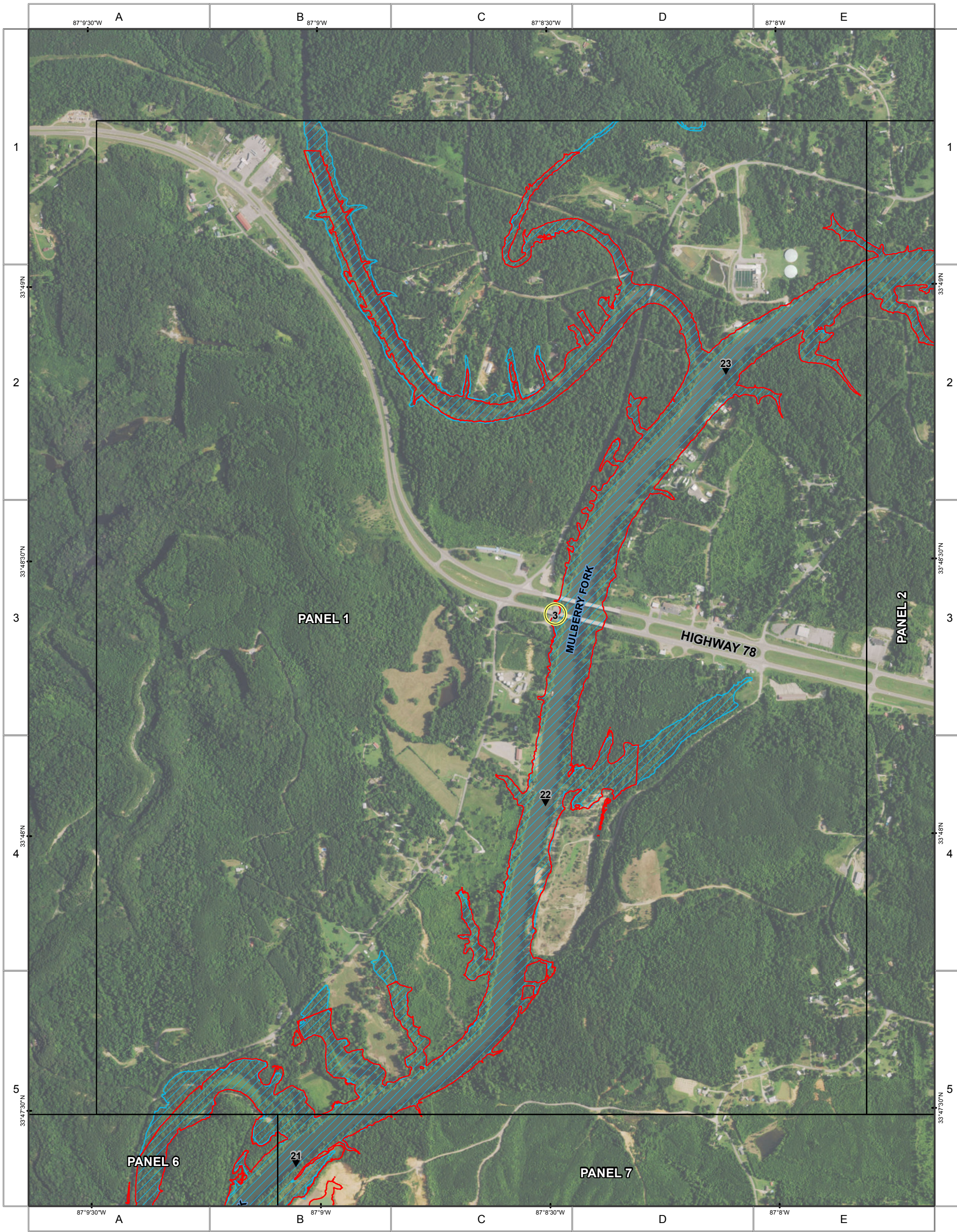
PLANT GORGAS ASH POND DAM BREACH ANALYSIS WALKER COUNTY, AL



Golder Associates

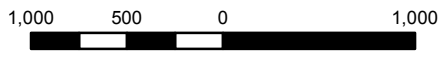
Projection
Transverse Mercator
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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Transverse Mercator
NAD 1983 Alabama West
State Plane

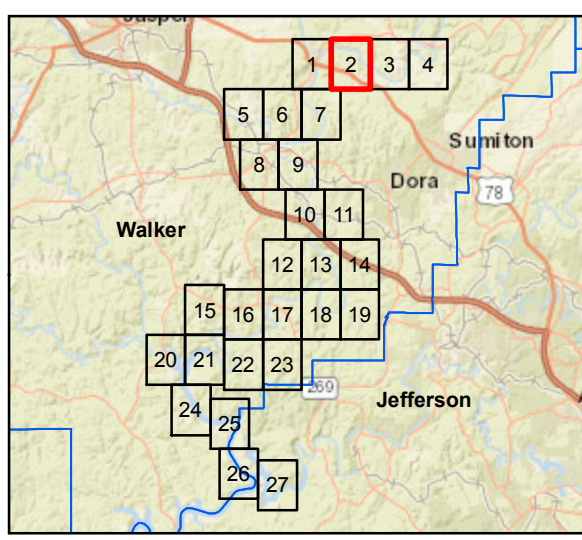
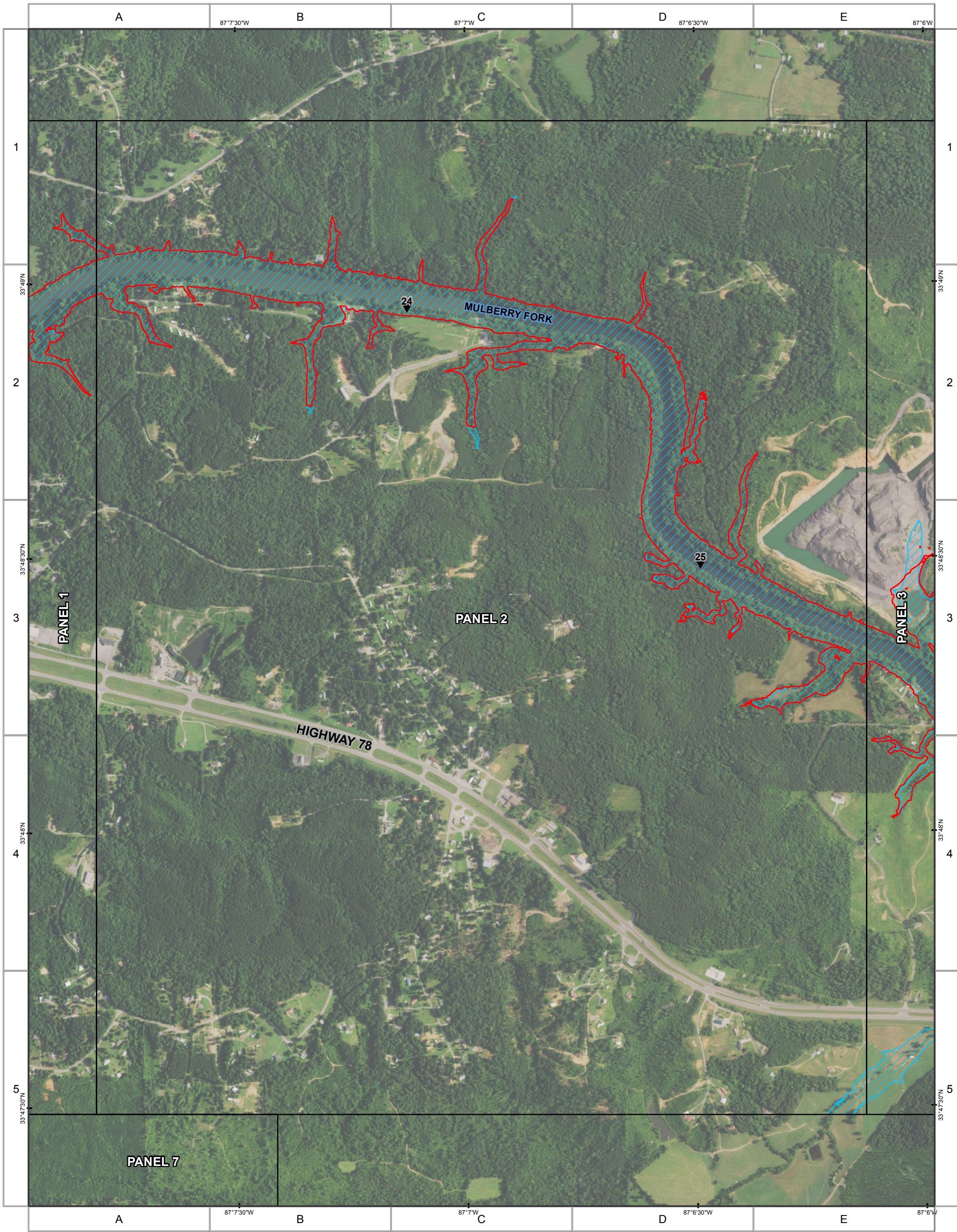
ISSUE DATE: 3/28/2017 PANEL 1 of 27

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1. THIS MAP DEPICTS THE MAXIMUM WATER SURFACE ELEVATION FROM SUNNY DAY BREACHING OF THE PLANT GORGAS ASH POND DAM.
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LEGEND

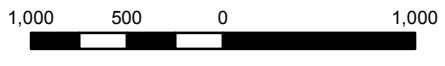
- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
- 1 AREA OF INTEREST (ID NUMBER WITHIN)
- MILES FROM BREACH (NEGATIVE DOWNSTREAM)



PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

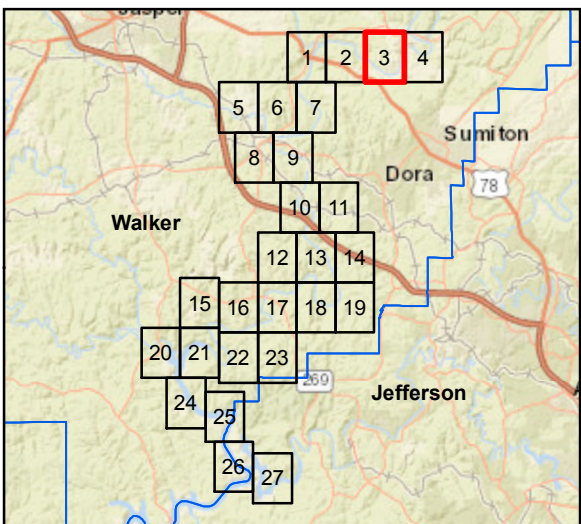
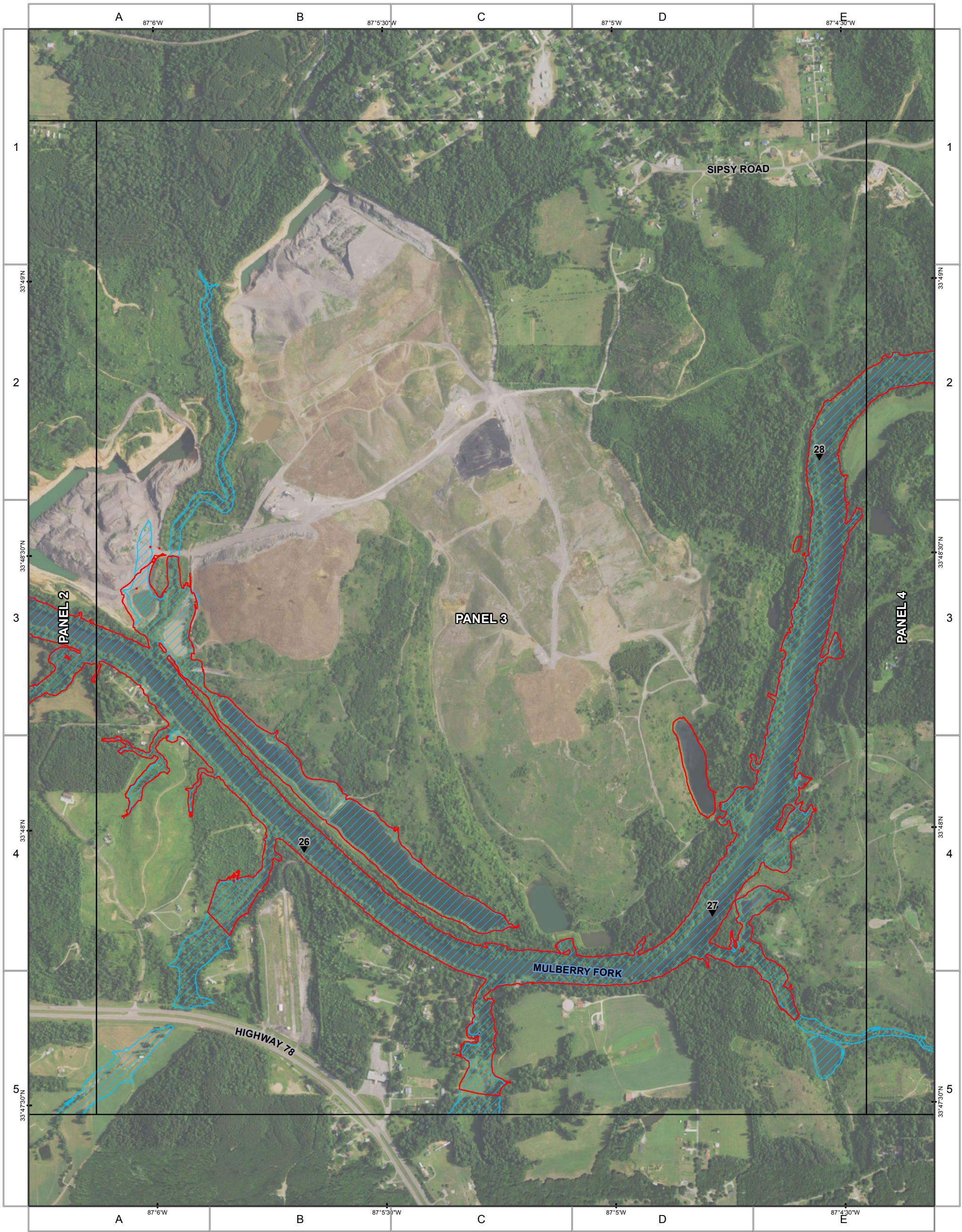
Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

ISSUE DATE: 3/28/2017 PANEL 2 of 27

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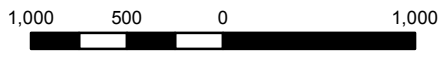
- PANEL
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

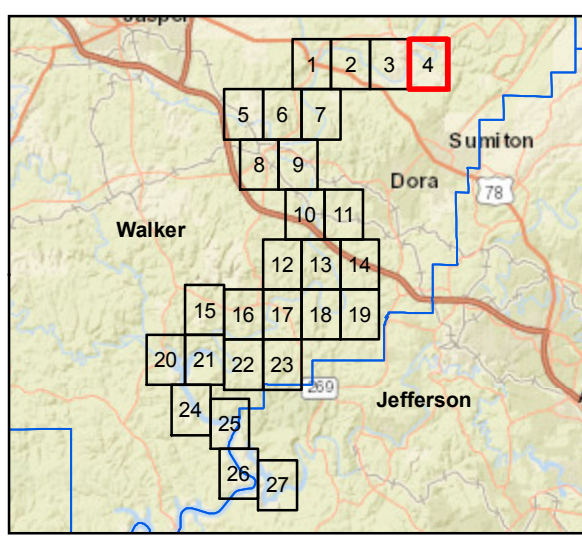
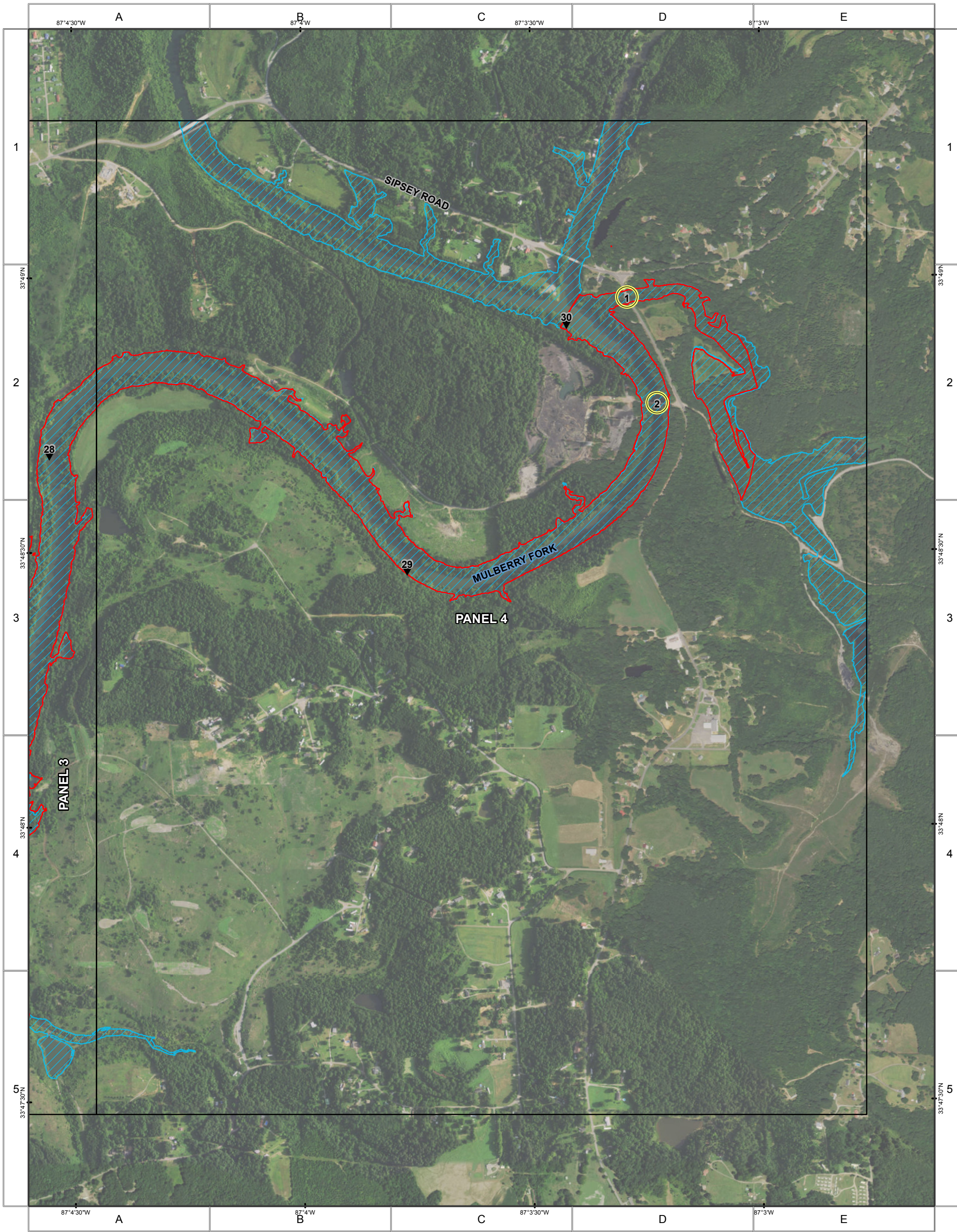
ISSUE DATE: 3/28/2017 PANEL 3 of 27

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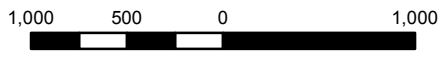
LEGEND

- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

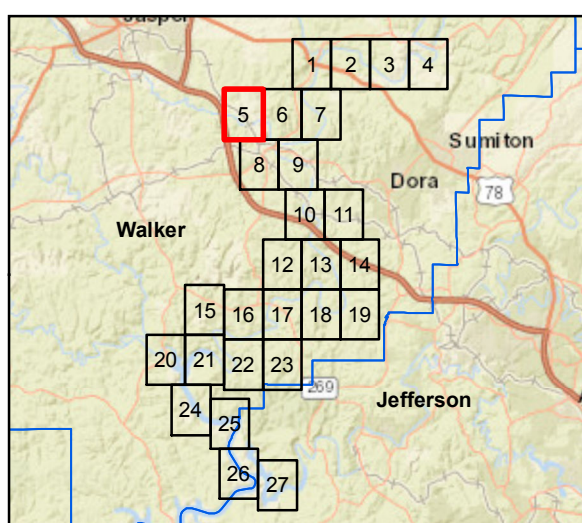
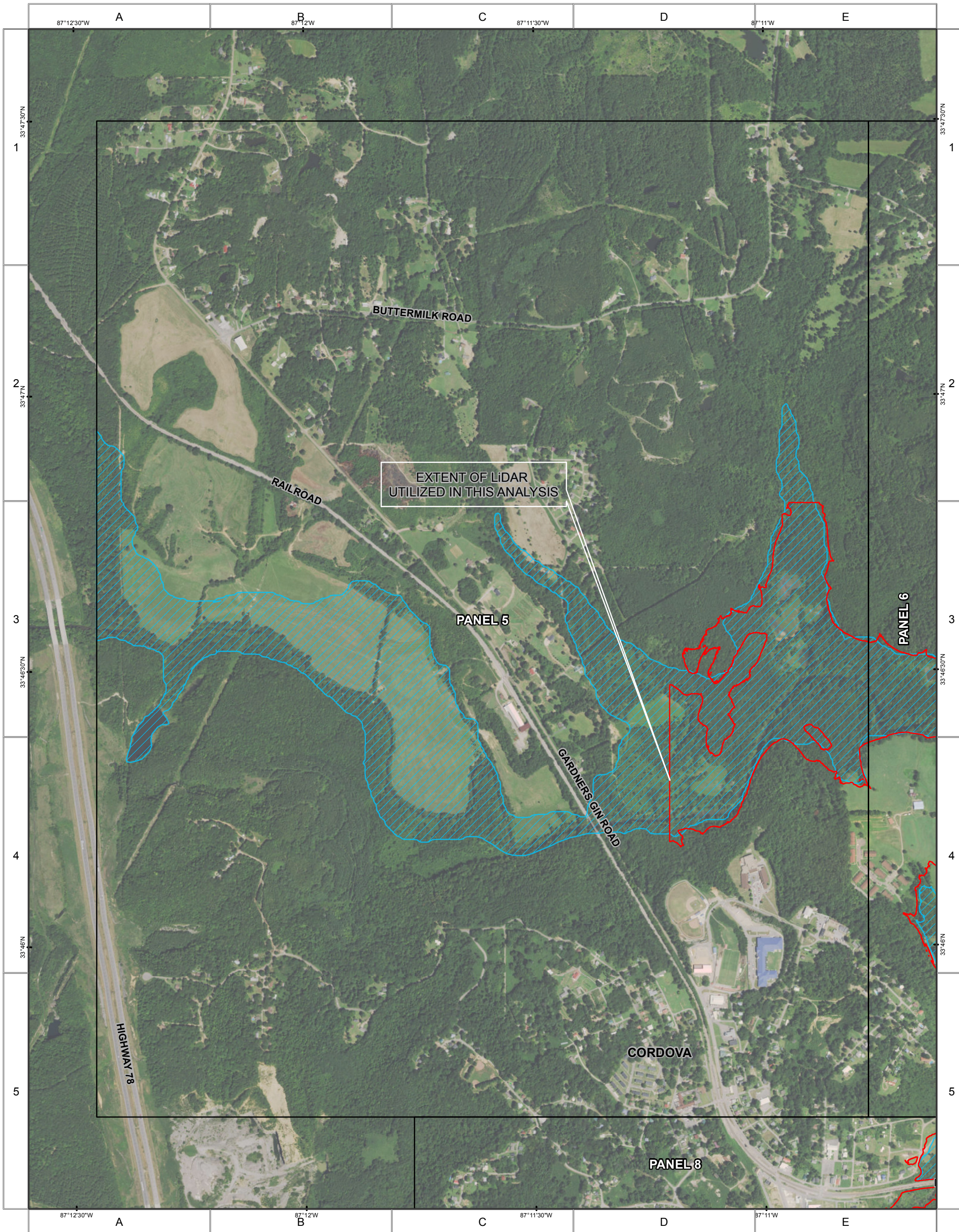
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ISSUE DATE: 3/28/2017 PANEL 4 of 27

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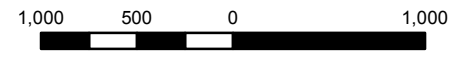
LEGEND

- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
- 1 AREA OF INTEREST (ID NUMBER WITHIN)
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

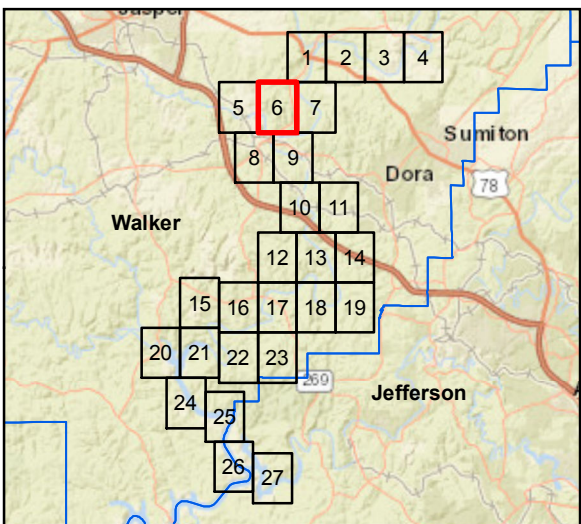
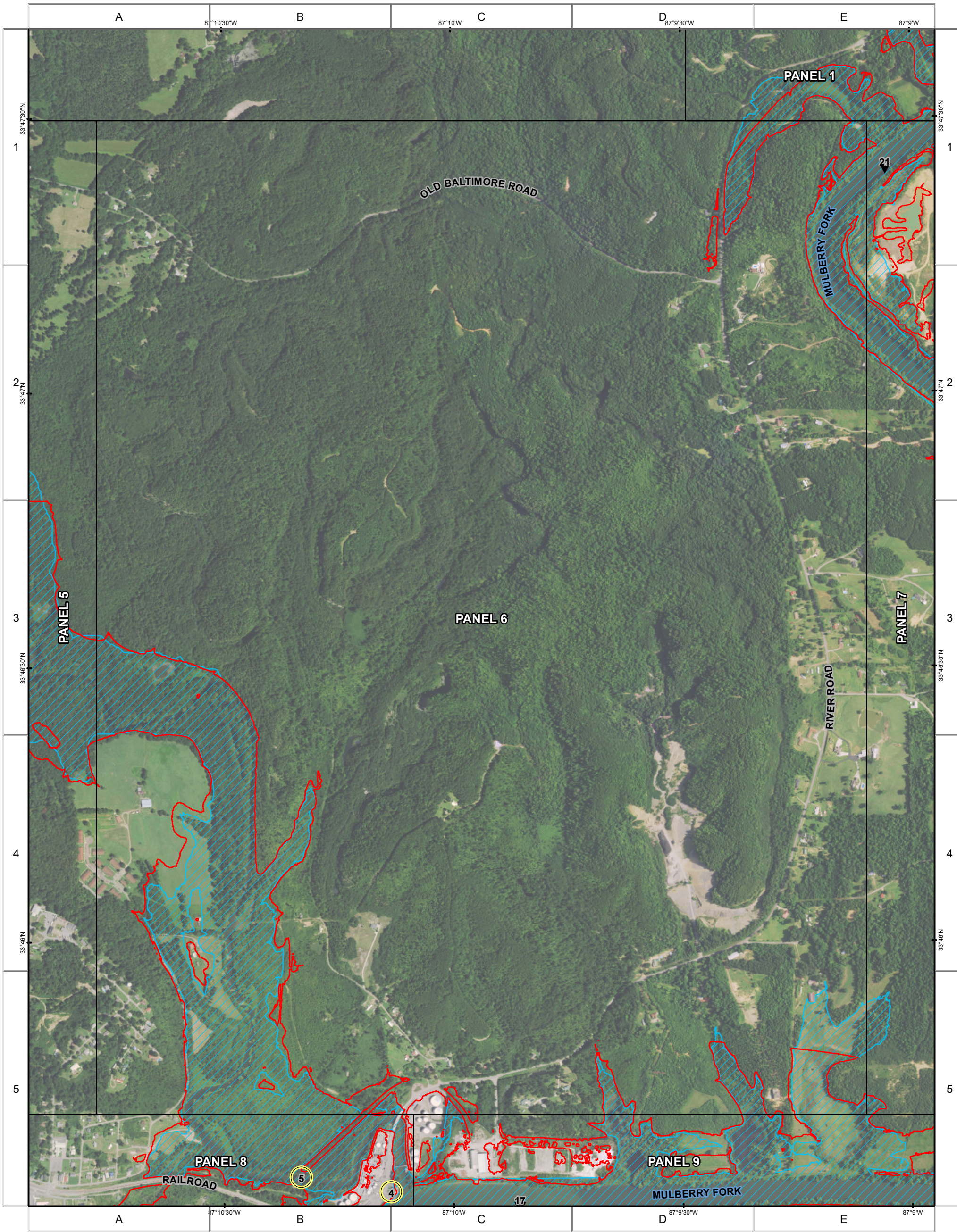
Golden Associates

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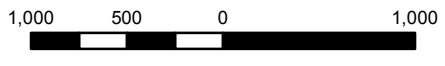
- PANEL
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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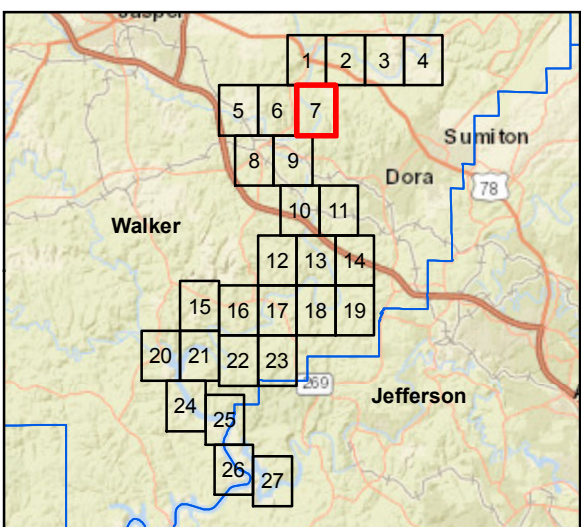
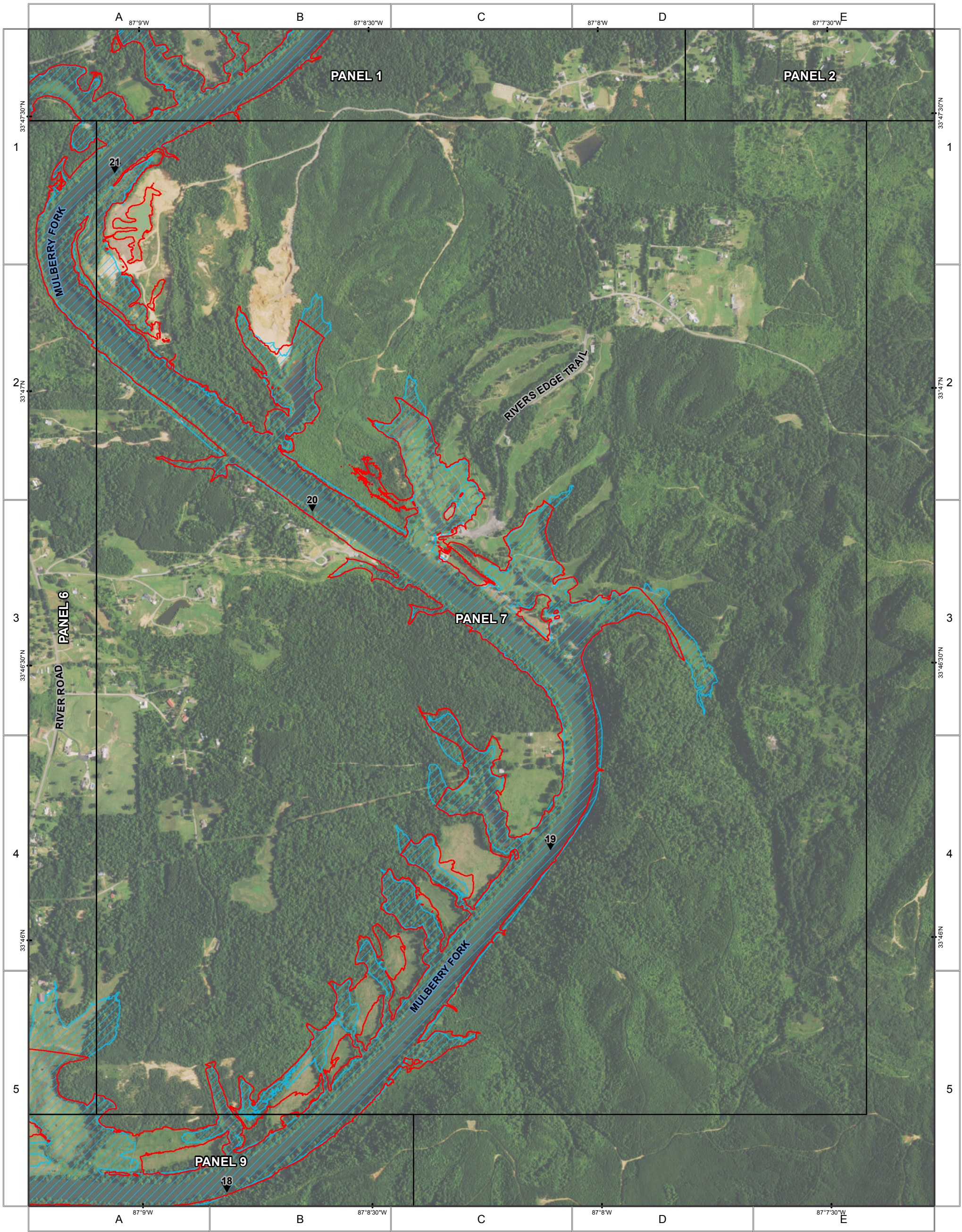
Logo: Golder Associates

ISSUE DATE: 3/28/2017 **PANEL 6 of 27**

Notes
 1. THIS MAP DEPICTS THE MAXIMUM WATER SURFACE ELEVATION FROM SUNNY DAY BREACHING OF THE PLANT GORGAS ASH POND DAM.
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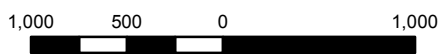
LEGEND


- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
- 1 AREA OF INTEREST (ID NUMBER WITHIN)
- MILES FROM BREACH (NEGATIVE DOWNSTREAM)




PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL










 Projection
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 NAD 1983 Alabama West
 State Plane

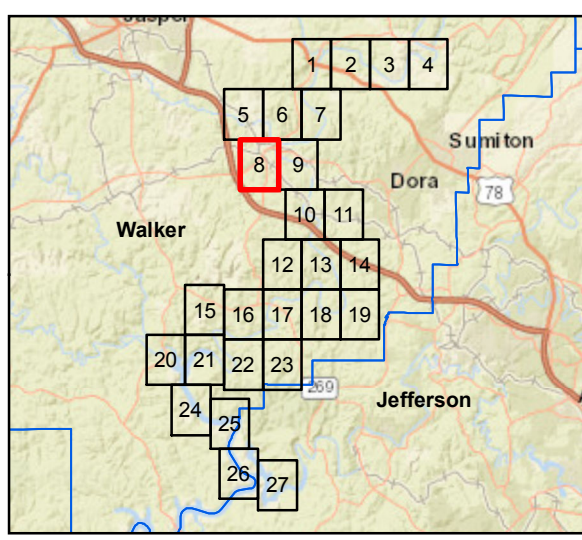
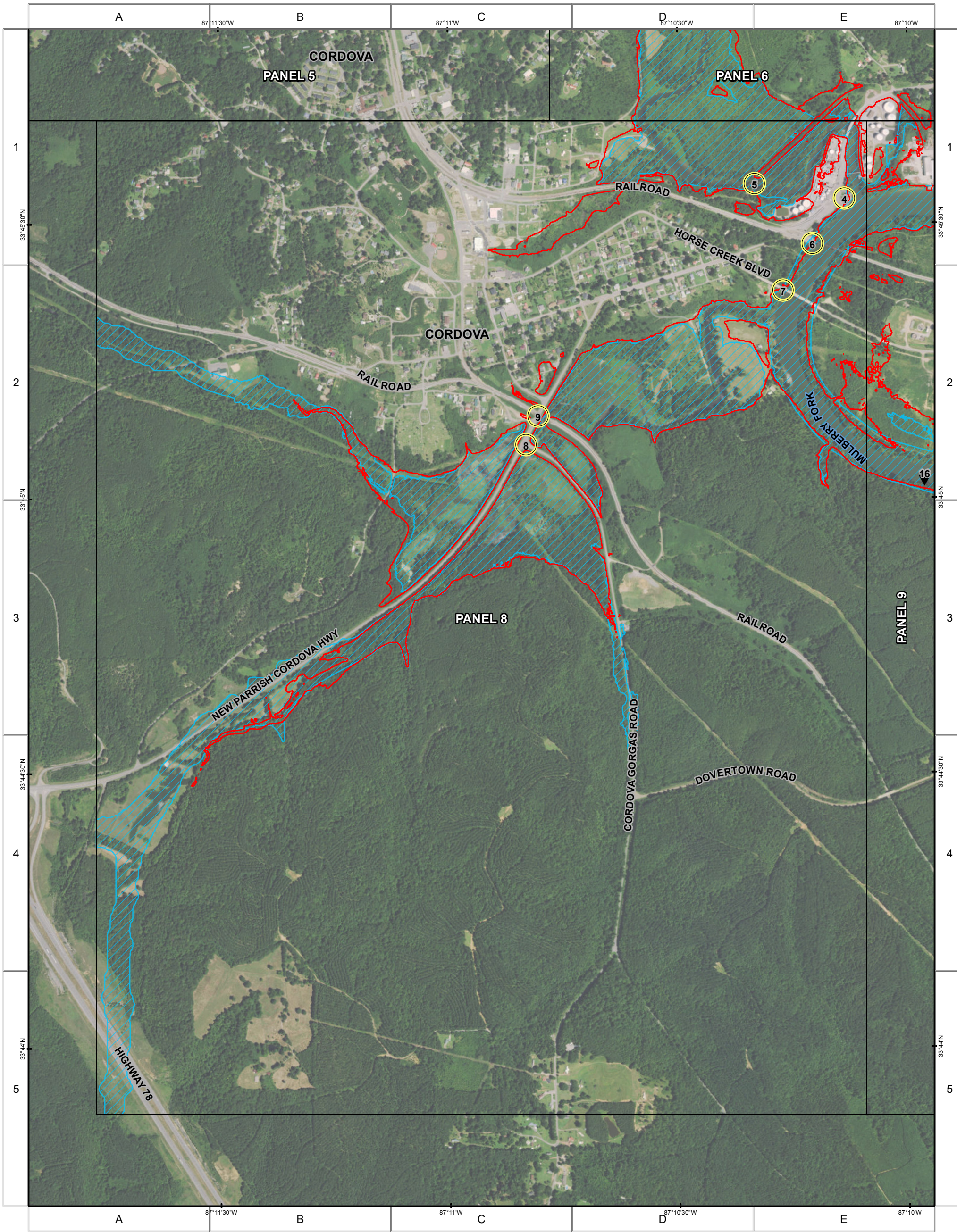


 ISSUE DATE: 3/28/2017 PANEL 7 of 27

Notes
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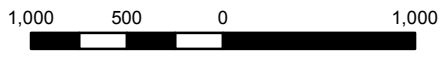
-  PANEL
-  SUNNY DAY BREACH
-  WALKER COUNTY BOUNDARY
-  FEMA ZONE A/AE 100 YEAR FLOODPLAIN
-  AREA OF INTEREST (ID NUMBER WITHIN)
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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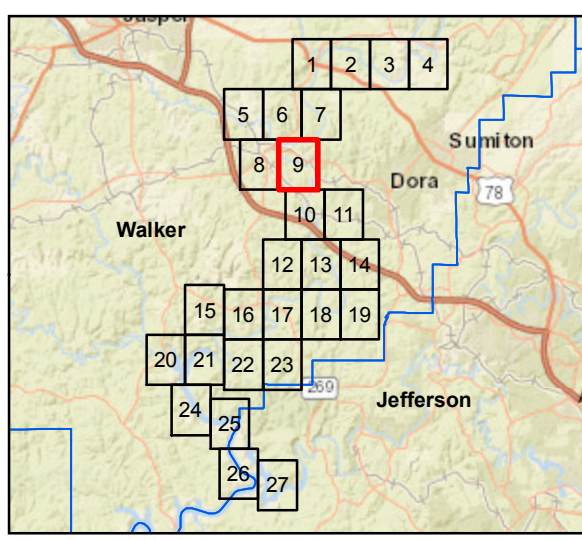
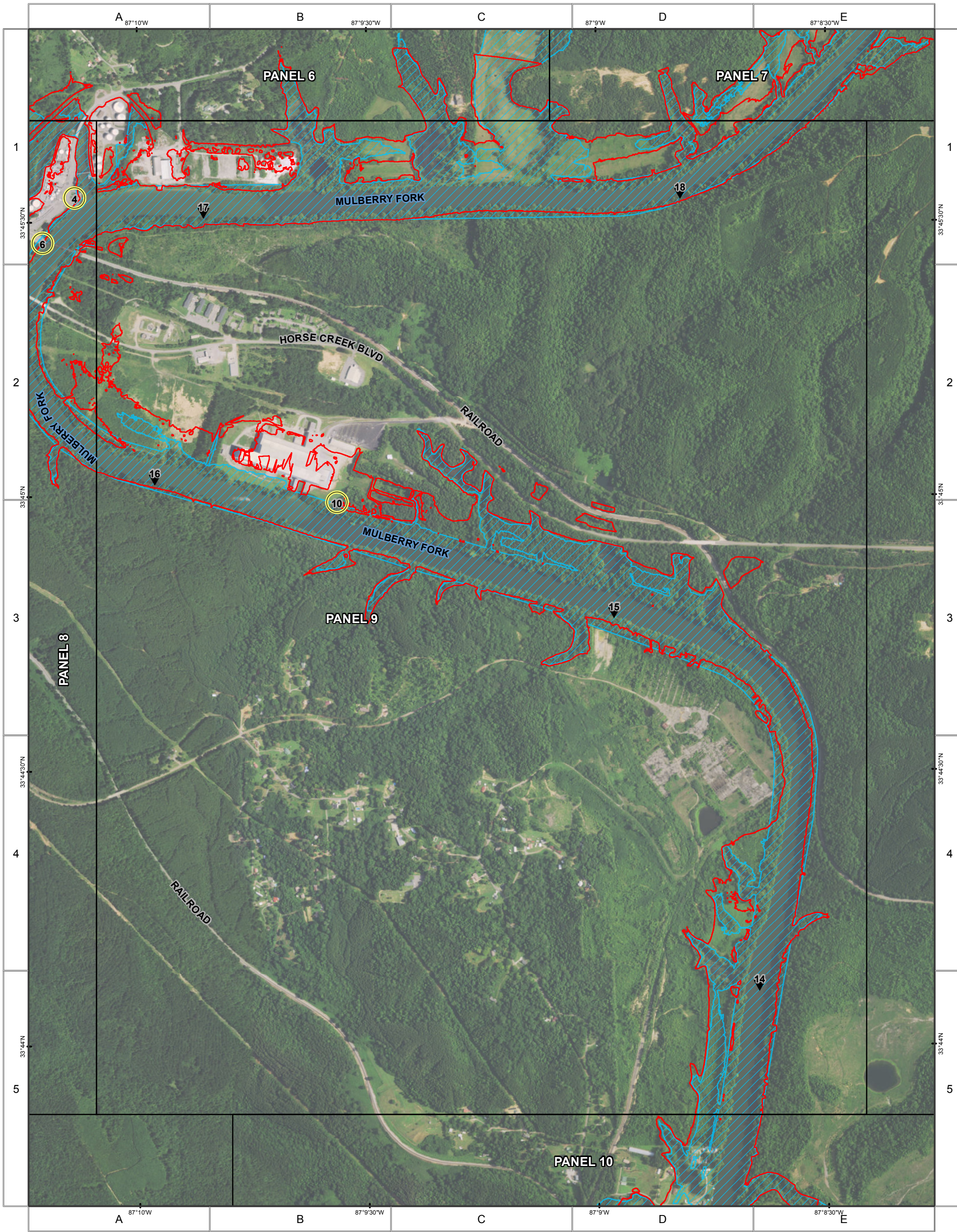
Logo: Golder Associates

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 1. THIS MAP DEPICTS THE MAXIMUM WATER SURFACE ELEVATION FROM SUNNY DAY BREACHING OF THE PLANT GORGAS ASH POND DAM.
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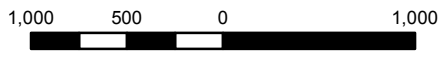
- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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Transverse Mercator
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State Plane

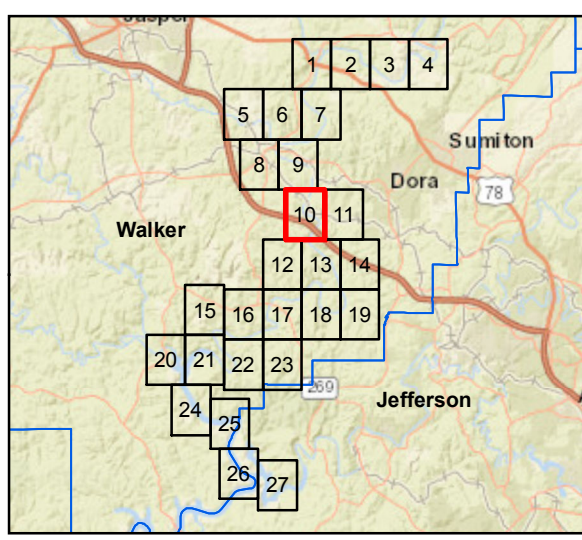
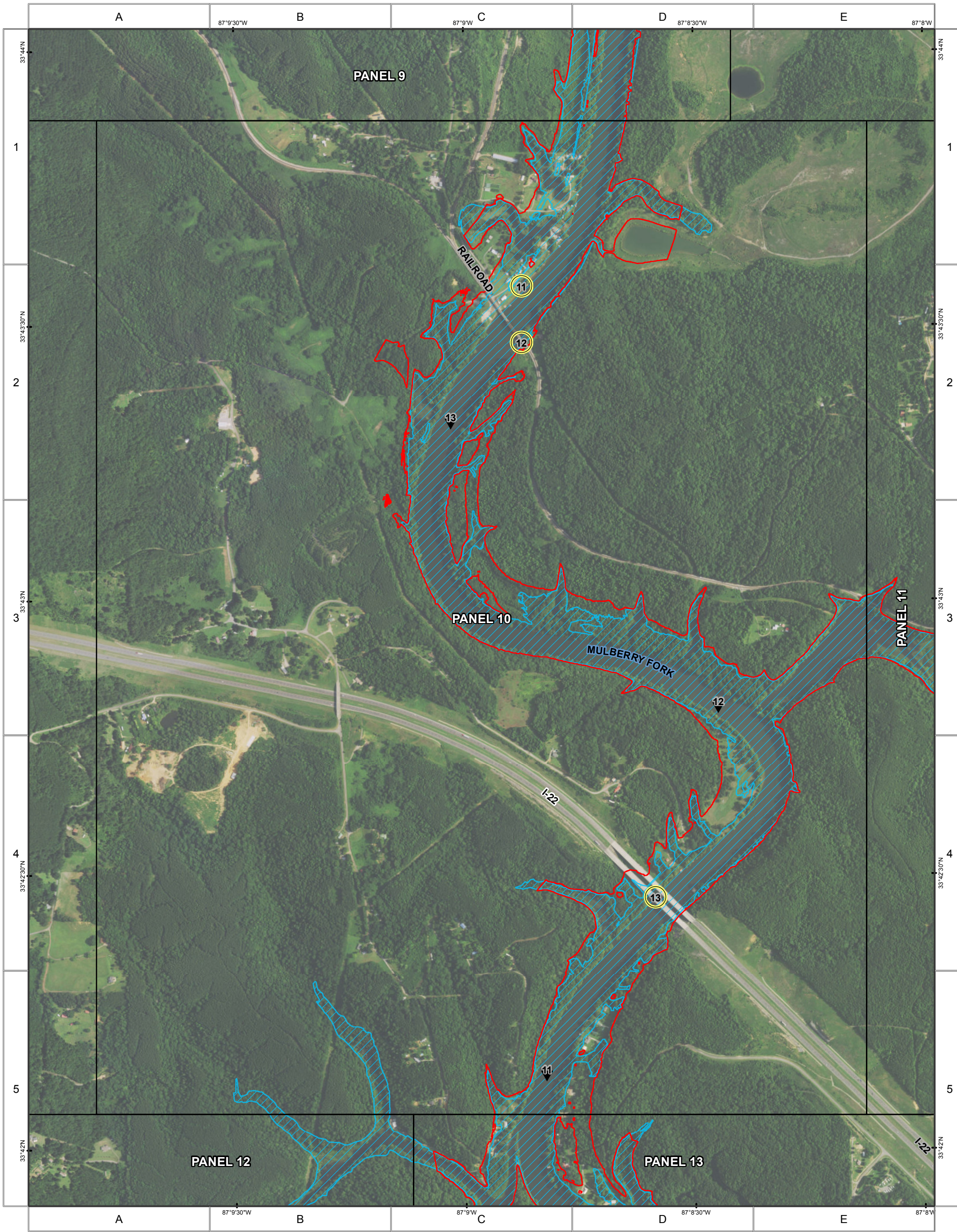
ISSUE DATE: 3/28/2017 PANEL 9 of 27

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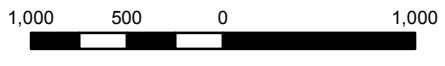
- PANEL
- SUNNY DAY BREACH
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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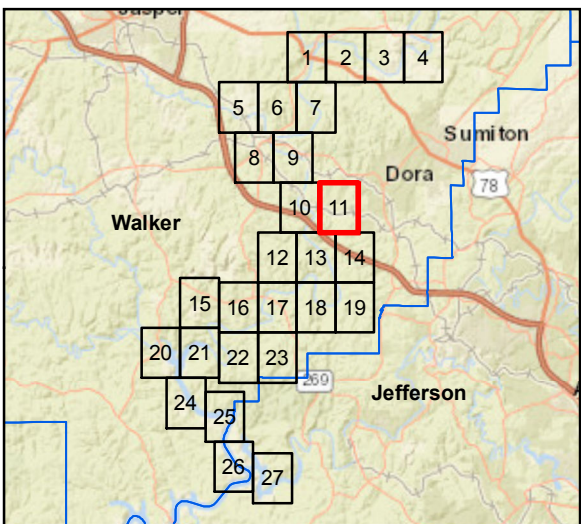
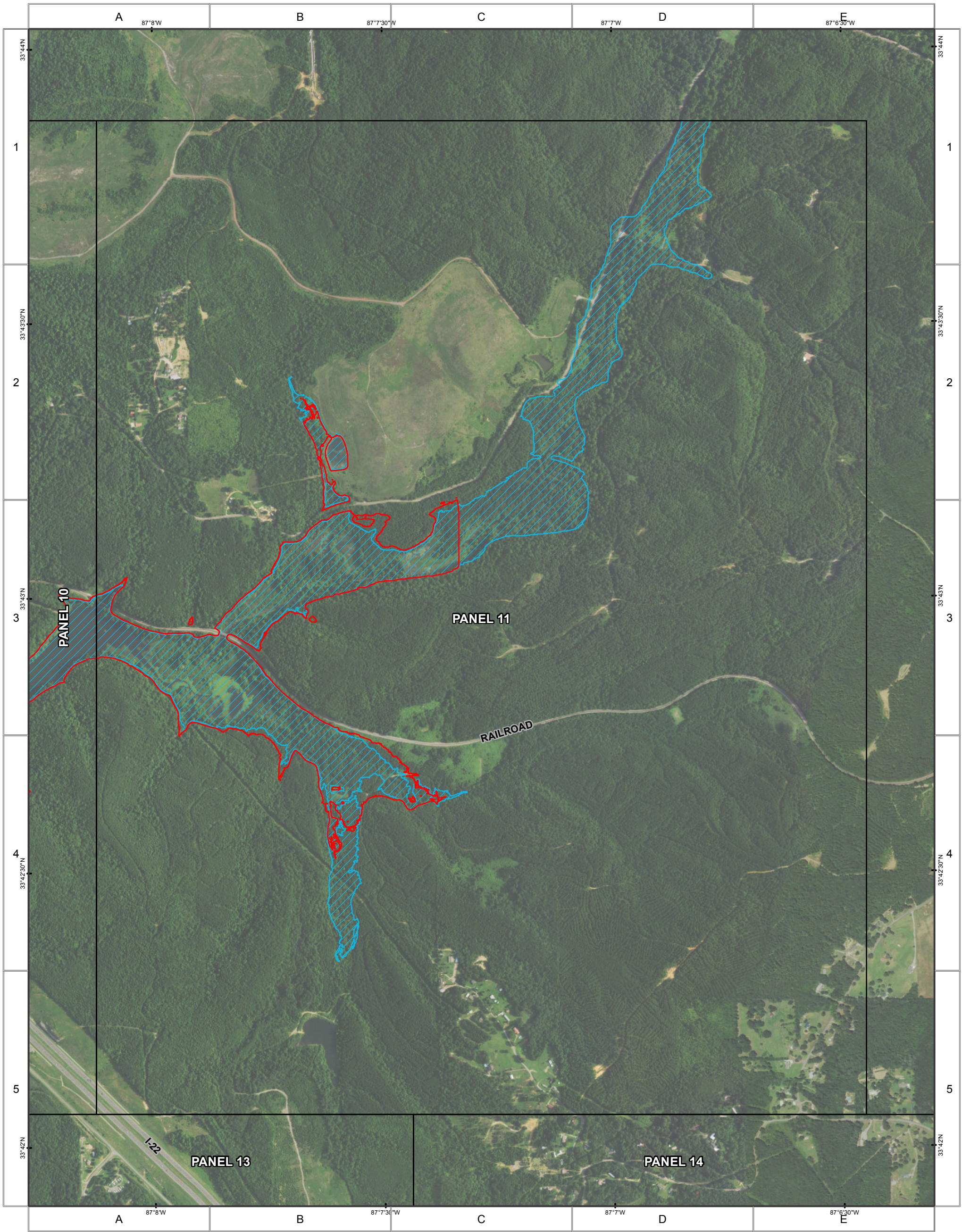
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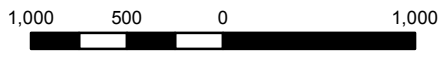
LEGEND

- PANEL
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- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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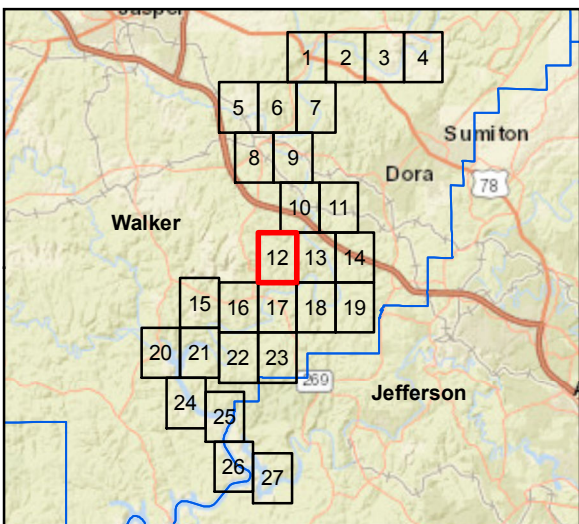
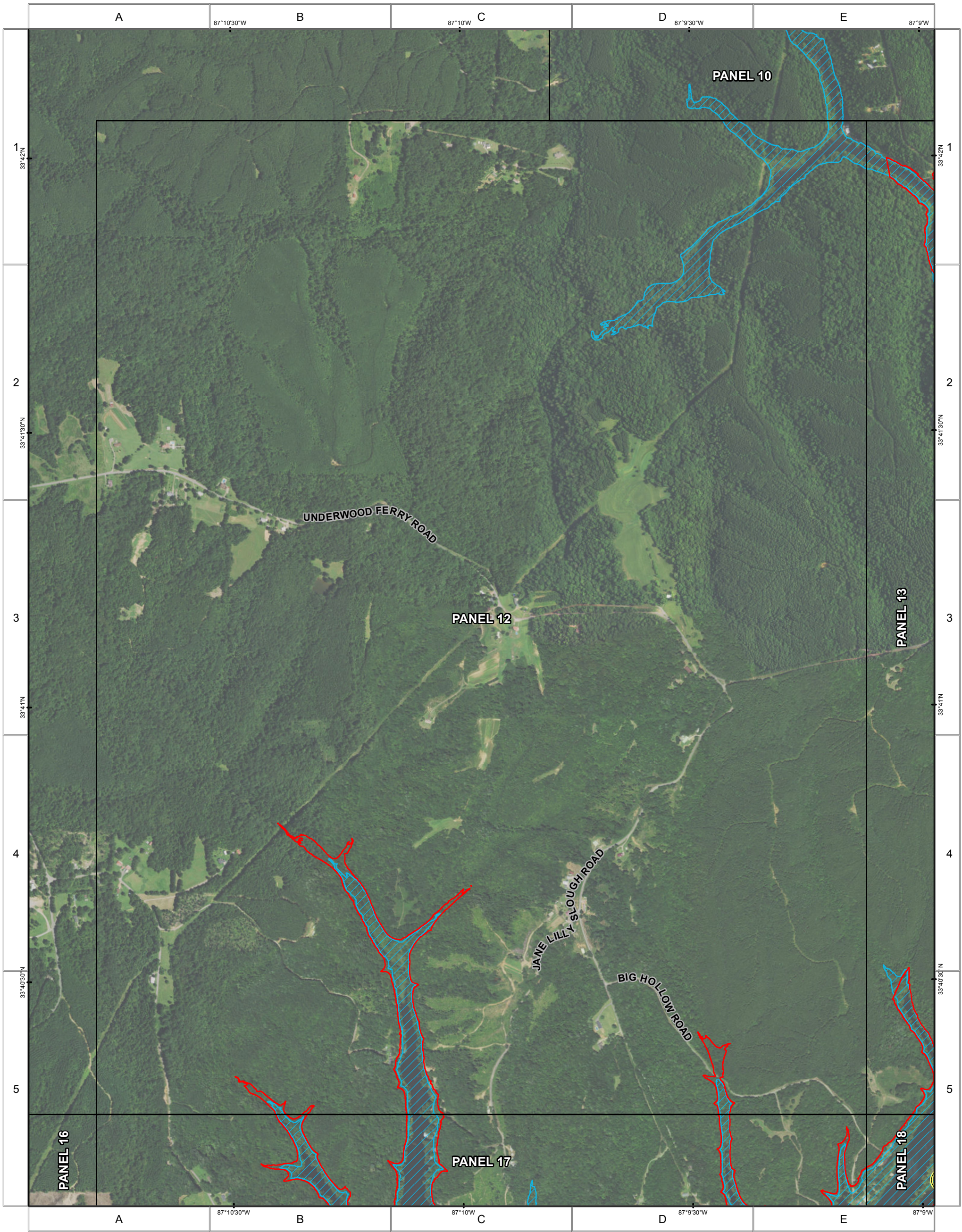
Goldner Associates

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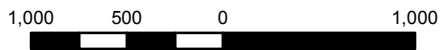
- PANEL
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- WALKER COUNTY BOUNDARY
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



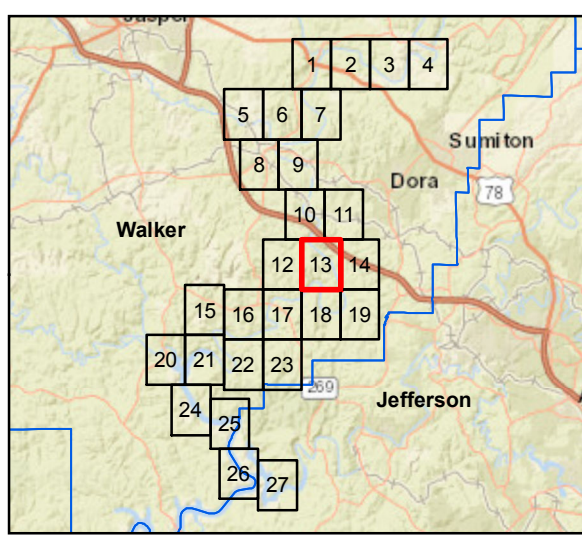
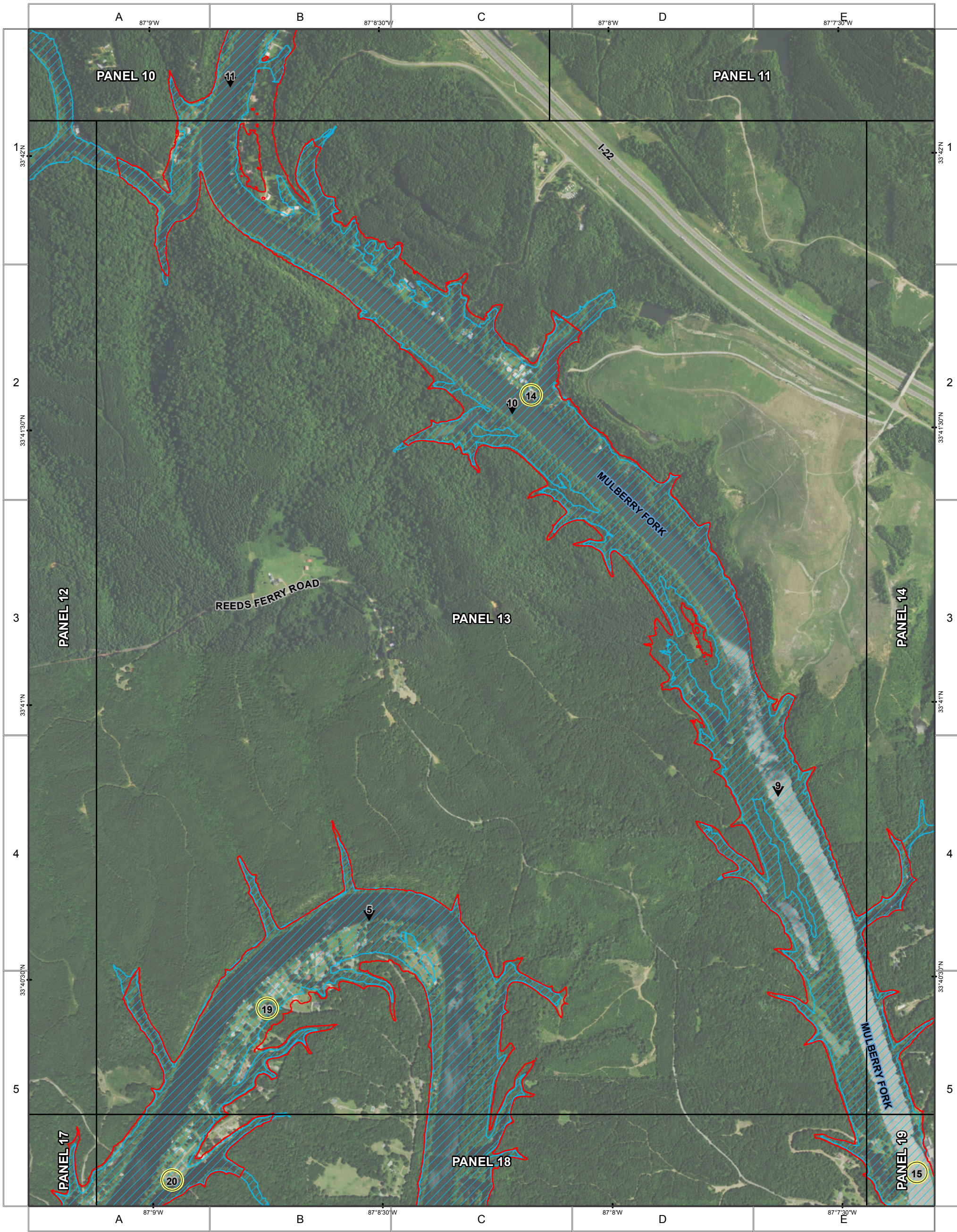
Golden Associates
 Projection
 Transverse Mercator
 NAD 1983 Alabama West
 State Plane
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Notes

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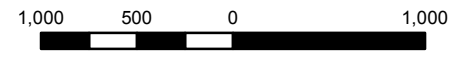
LEGEND

- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
- AREA OF INTEREST (ID NUMBER WITHIN)
- MILES FROM BREACH (NEGATIVE DOWNSTREAM)



PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

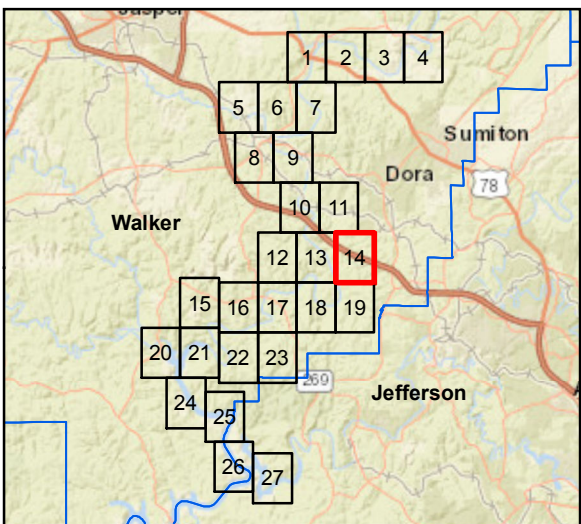
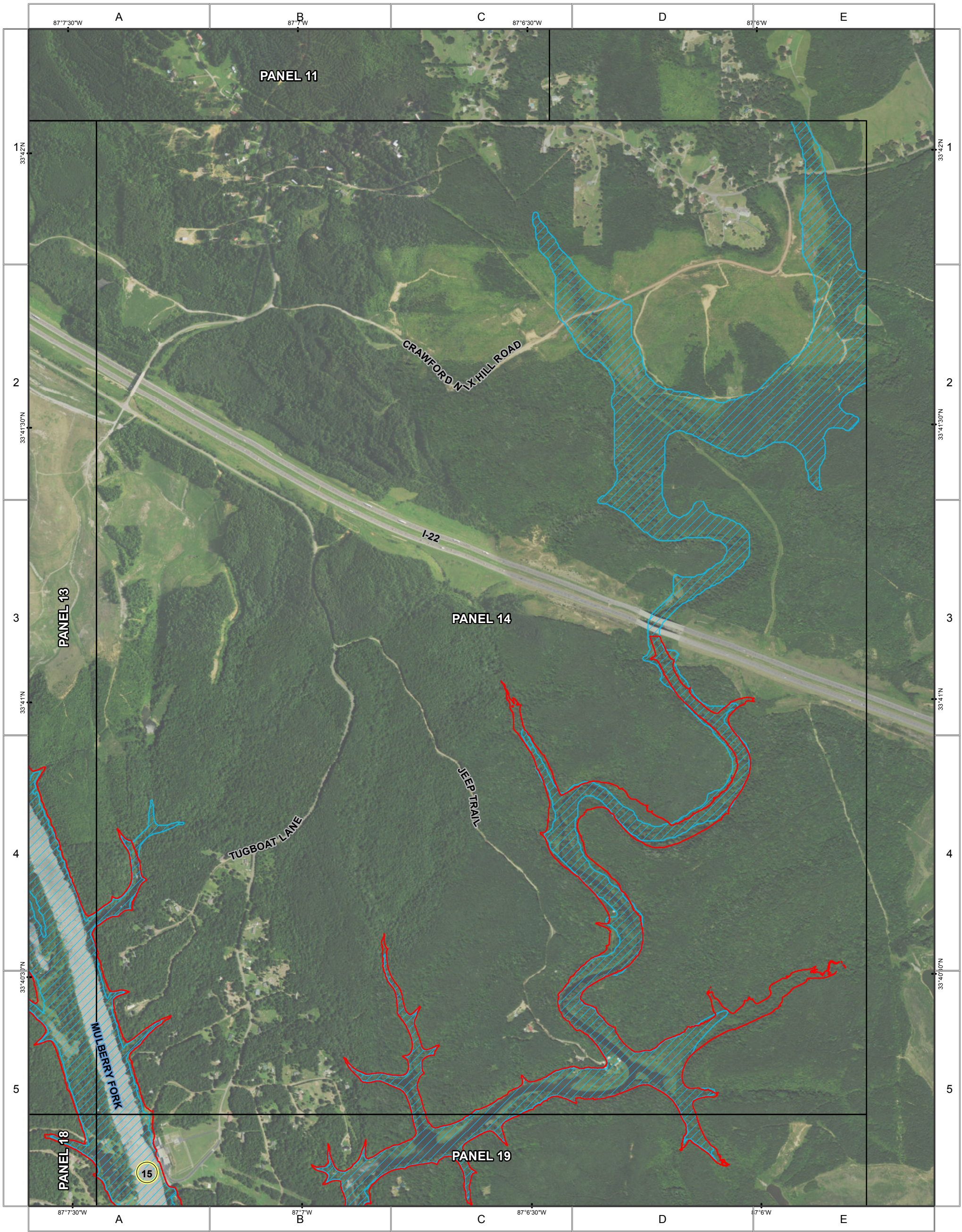
Goldner Associates

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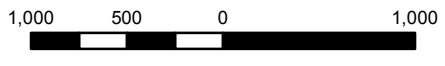
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- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
- 1 AREA OF INTEREST (ID NUMBER WITHIN)
- MILES FROM BREACH (NEGATIVE DOWNSTREAM)



PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

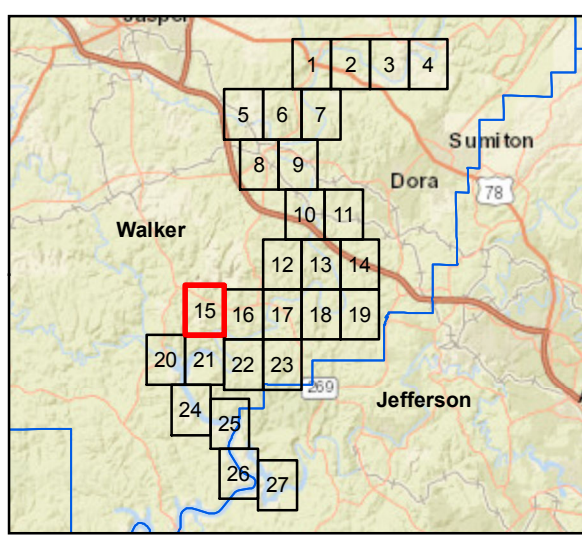
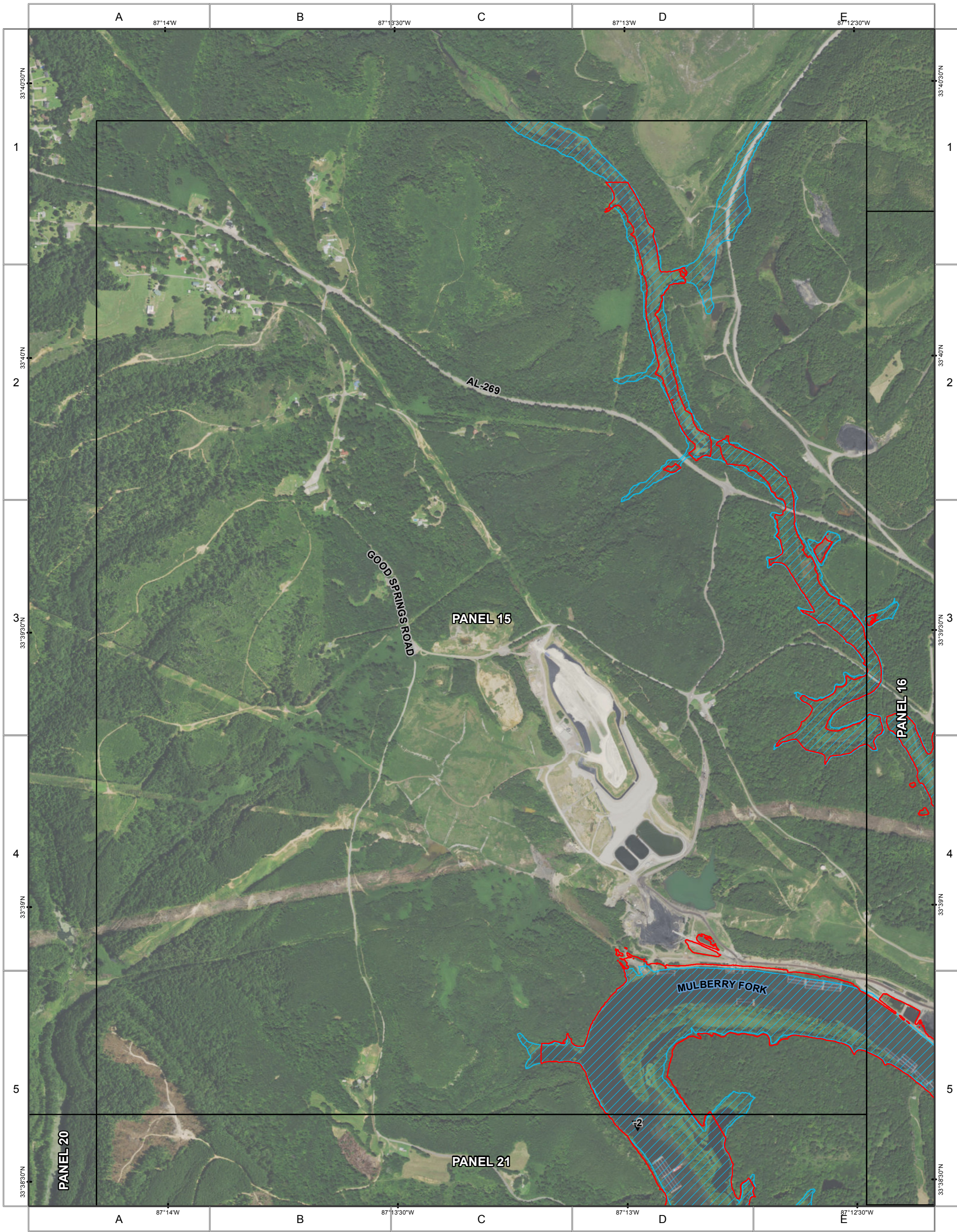
ISSUE DATE: 3/28/2017 PANEL 14 of 27

Notes

1. THIS MAP DEPICTS THE MAXIMUM WATER SURFACE ELEVATION FROM SUNNY DAY BREACHING OF THE PLANT GORGAS ASH POND DAM.
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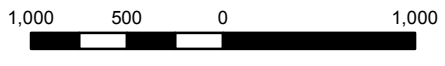
LEGEND

- PANEL
- SUNNY DAY BREACH
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

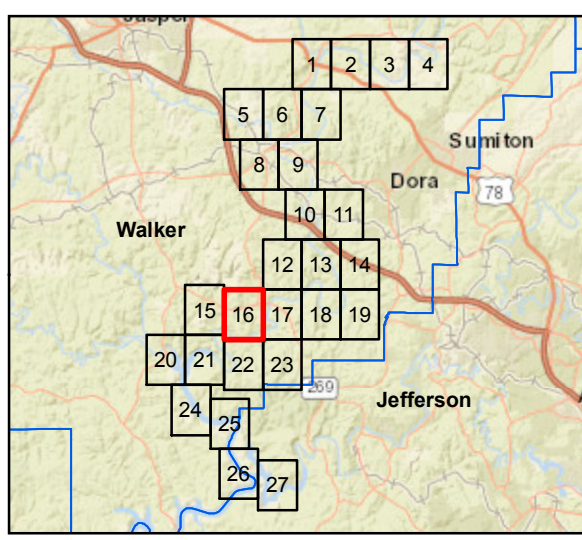
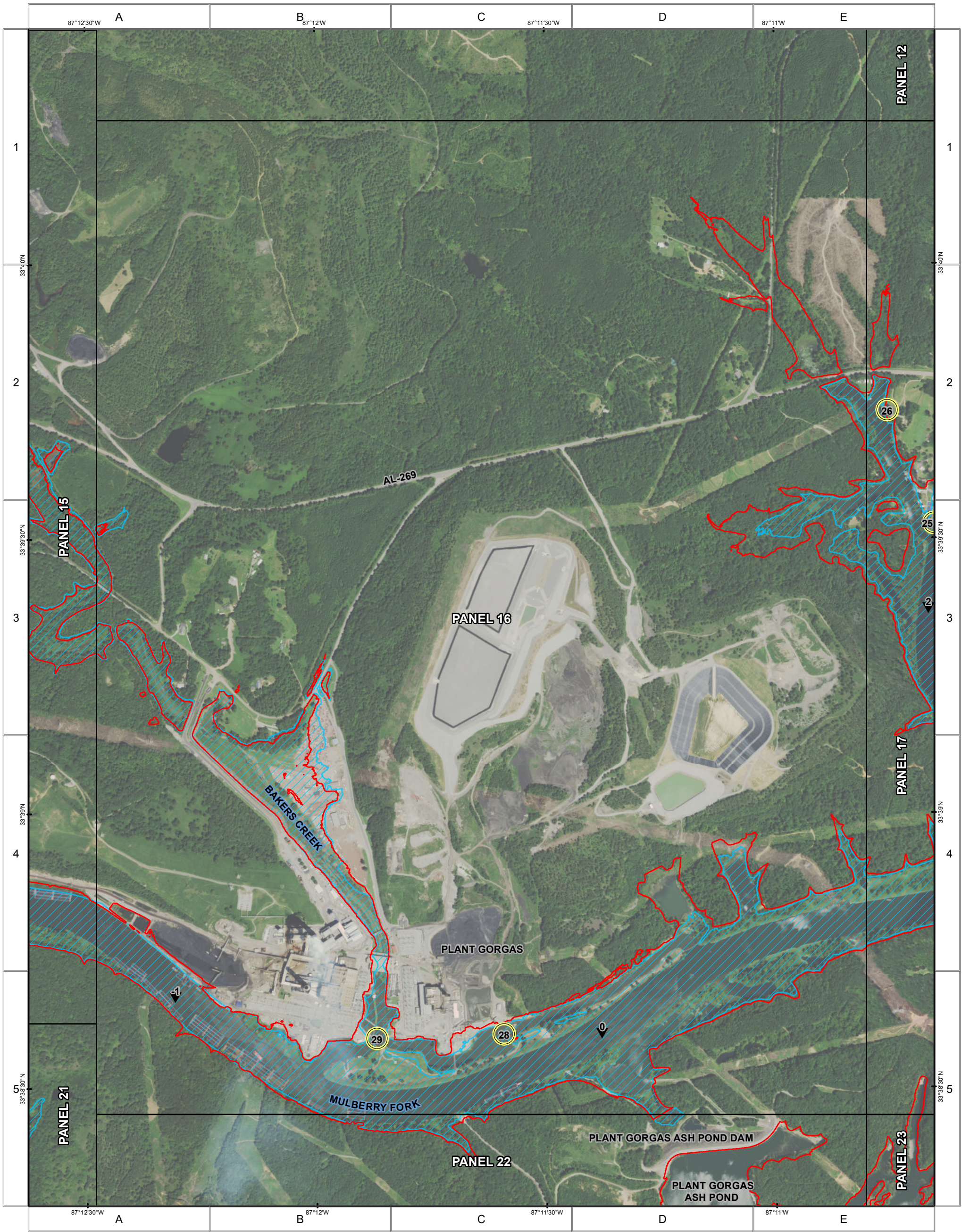
Logo: **Golder Associates**

ISSUE DATE: 3/28/2017 **PANEL 15 of 27**

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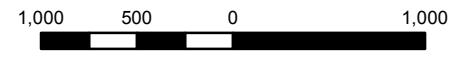
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

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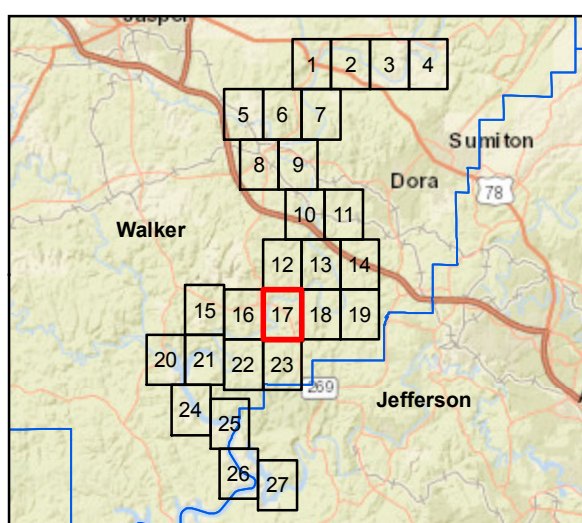
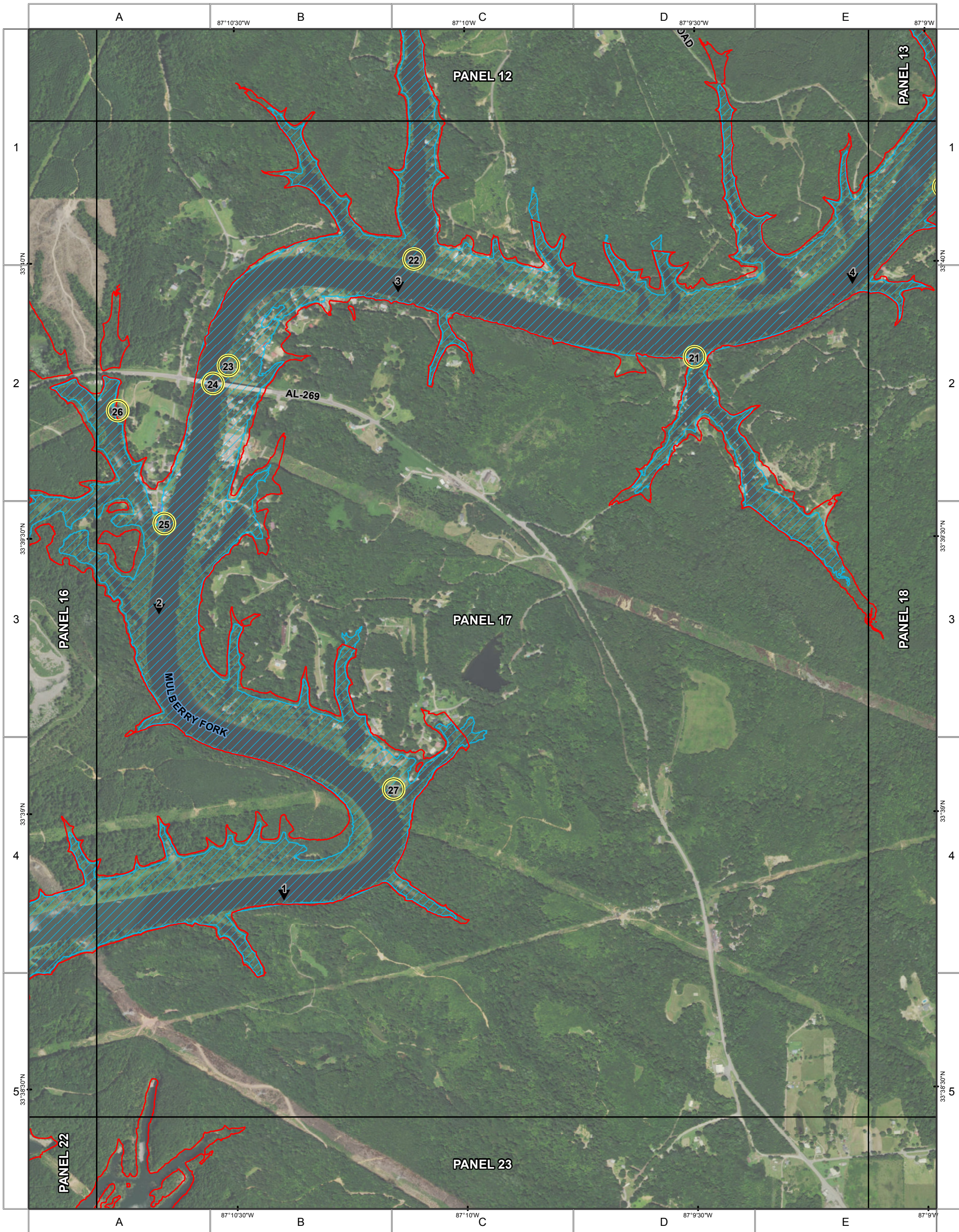
ISSUE DATE: 3/28/2017 PANEL 16 of 27

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LEGEND

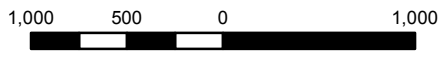
- PANEL
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL




Projection
 Transverse Mercator
 NAD 1983 Alabama West
 State Plane









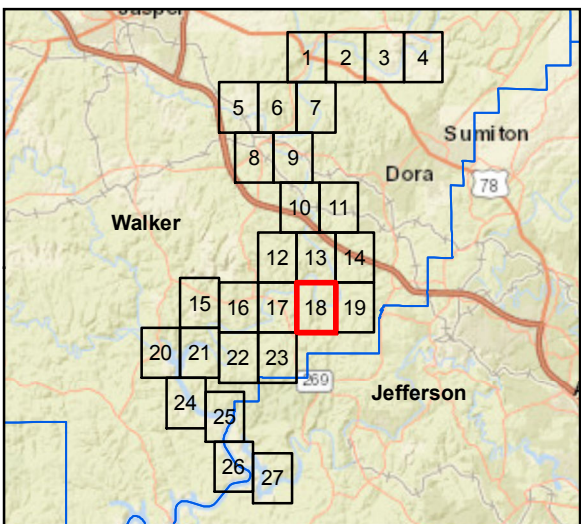
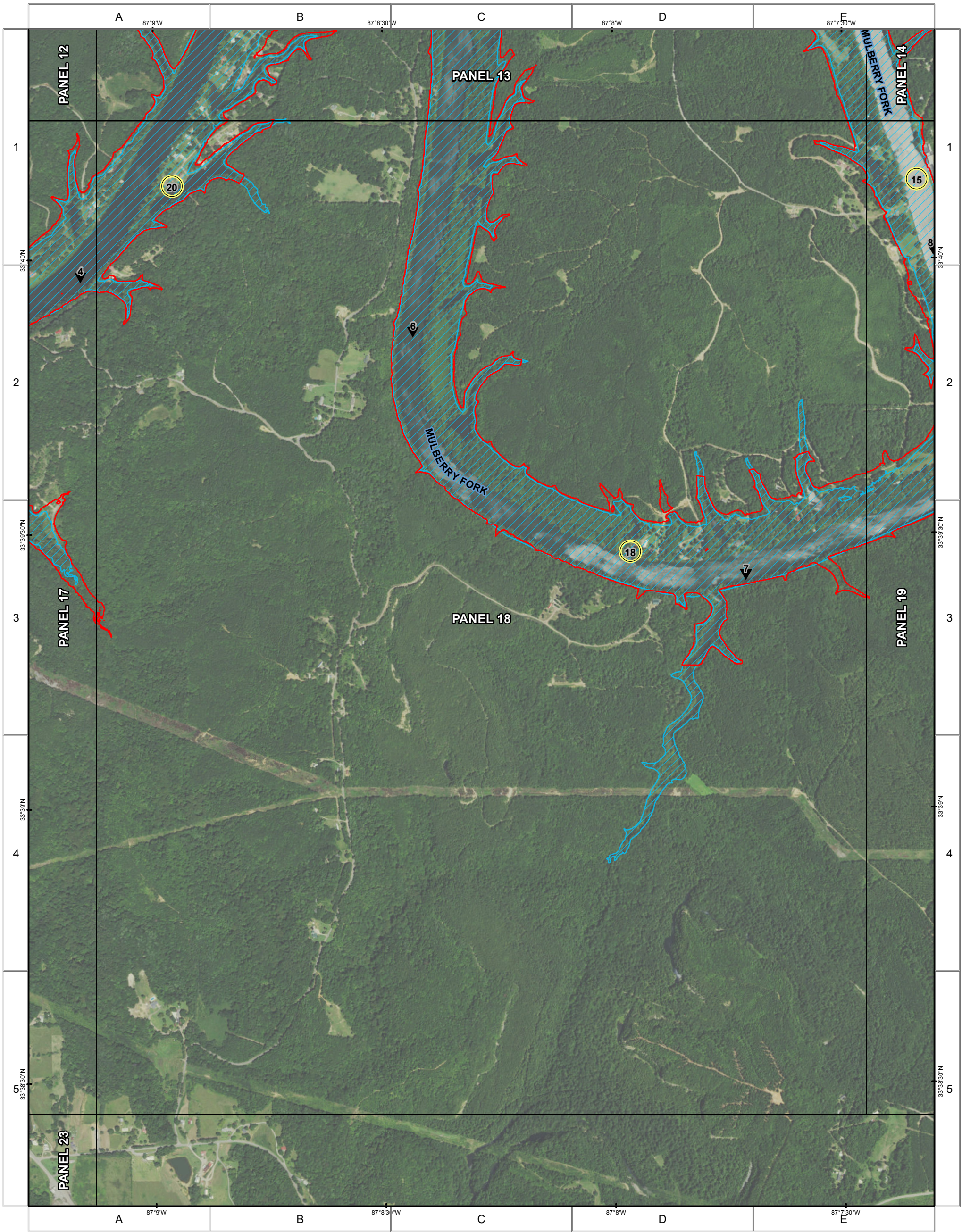
ISSUE DATE: 3/28/2017 PANEL 17 of 27

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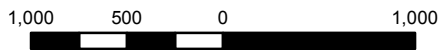
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-  PANEL
-  SUNNY DAY BREACH
-  WALKER COUNTY BOUNDARY
-  FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

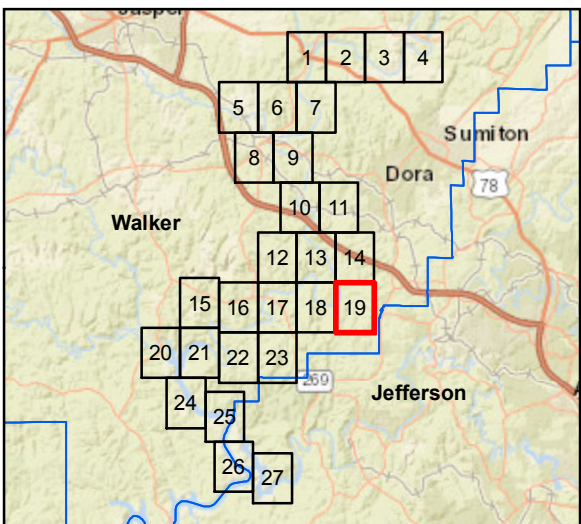
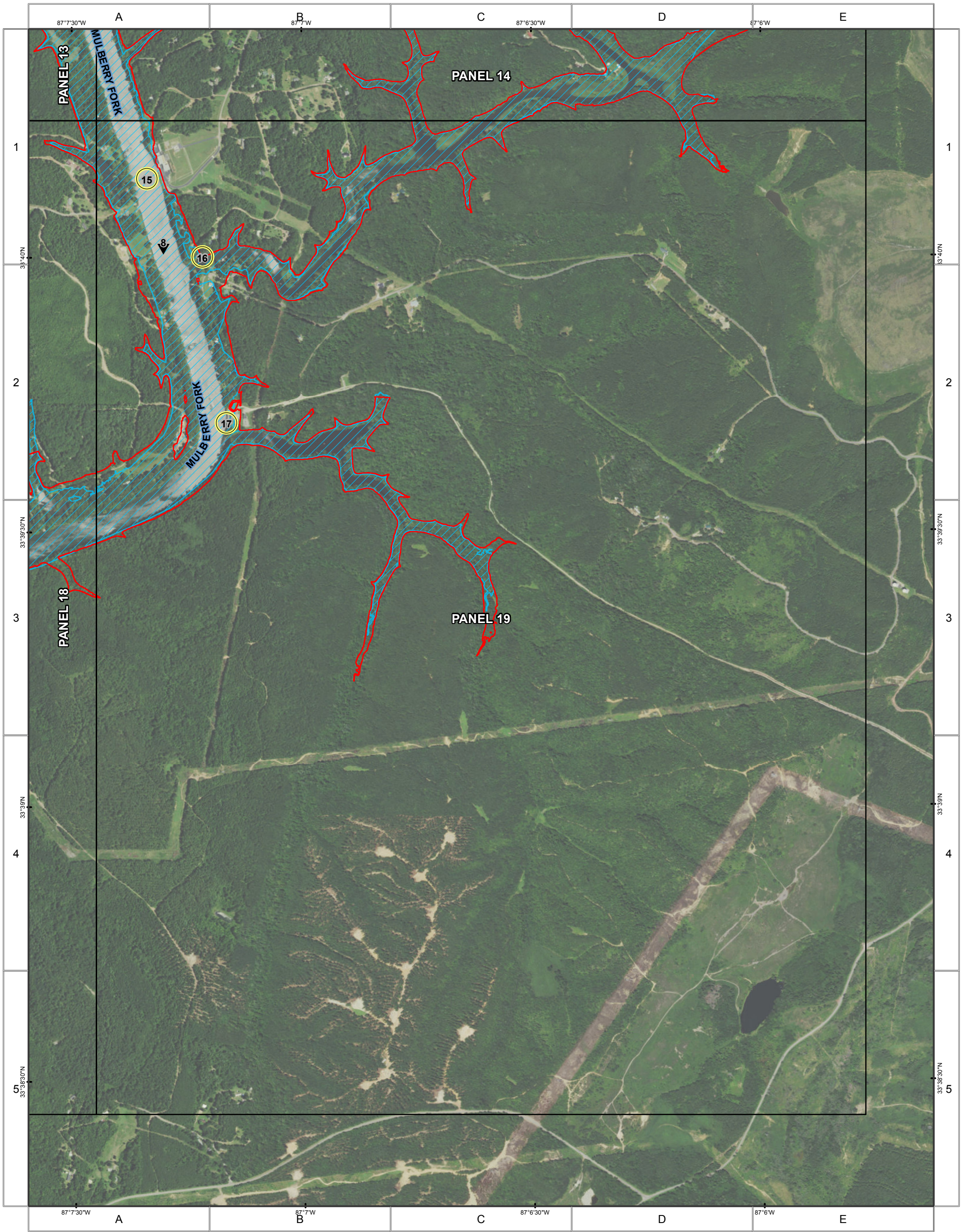
ISSUE DATE: 3/28/2017 PANEL 18 of 27

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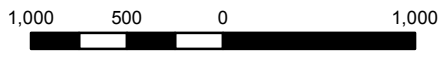
LEGEND

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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Projection
Transverse Mercator
NAD 1983 Alabama West
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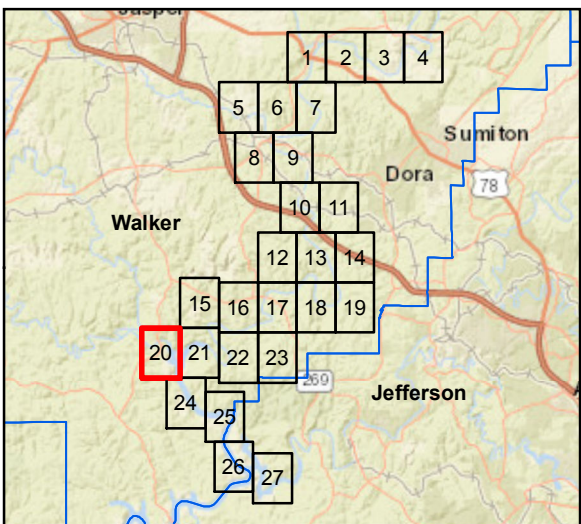
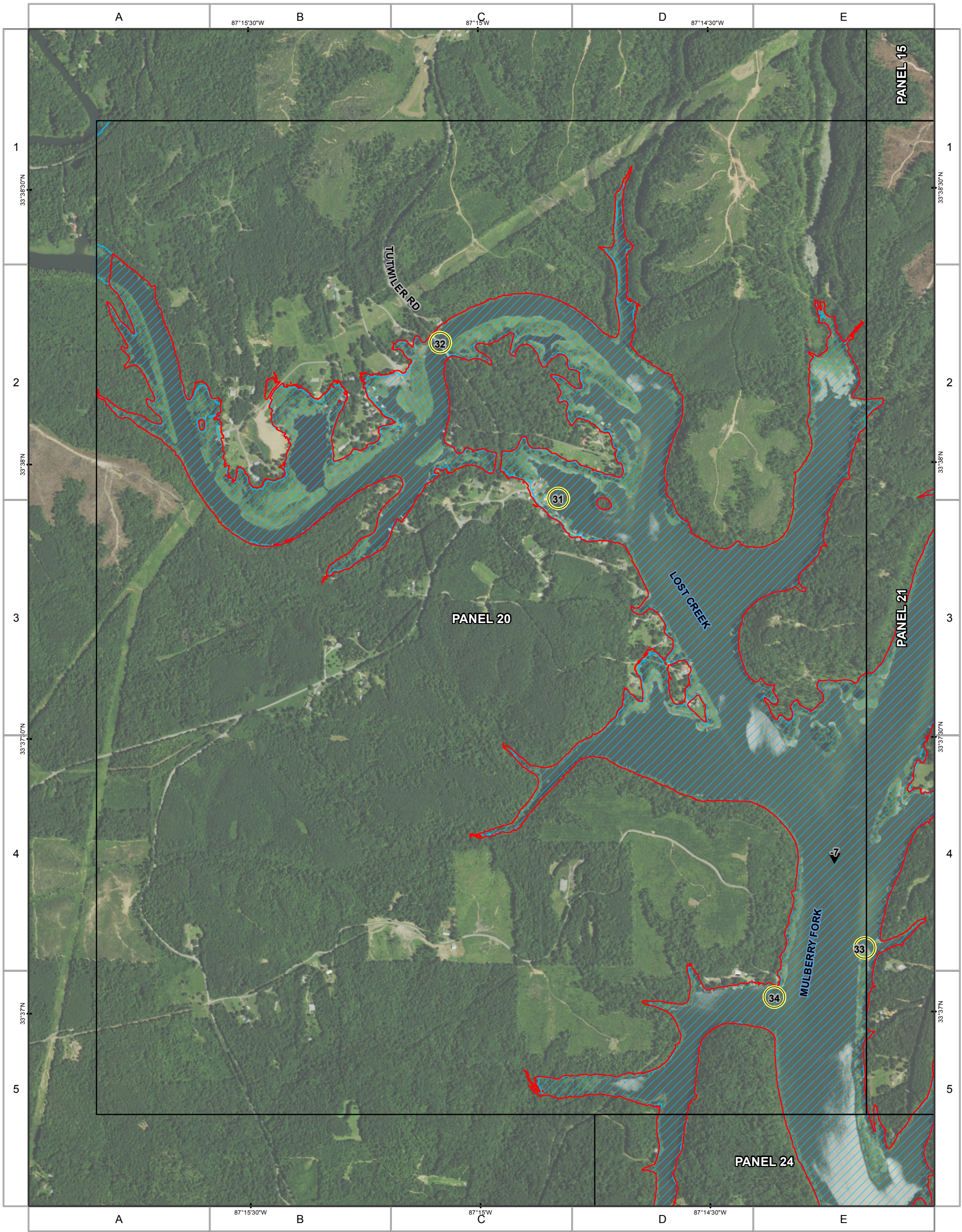
Logo: Golder Associates

ISSUE DATE: 3/28/2017 **PANEL 19 of 27**

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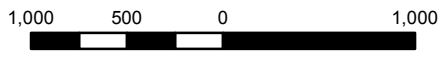
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- SUNNY DAY BREACH
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

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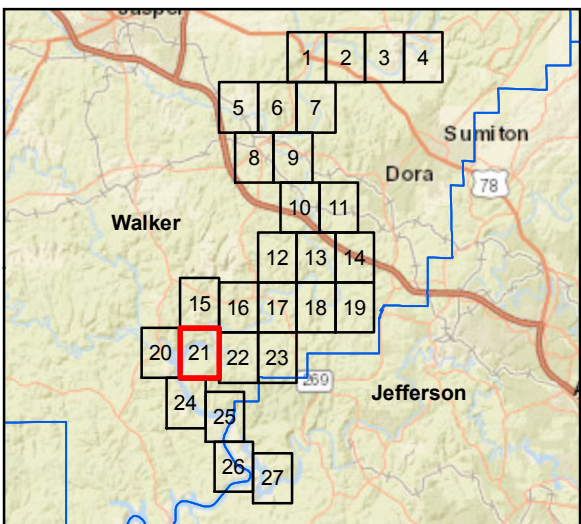
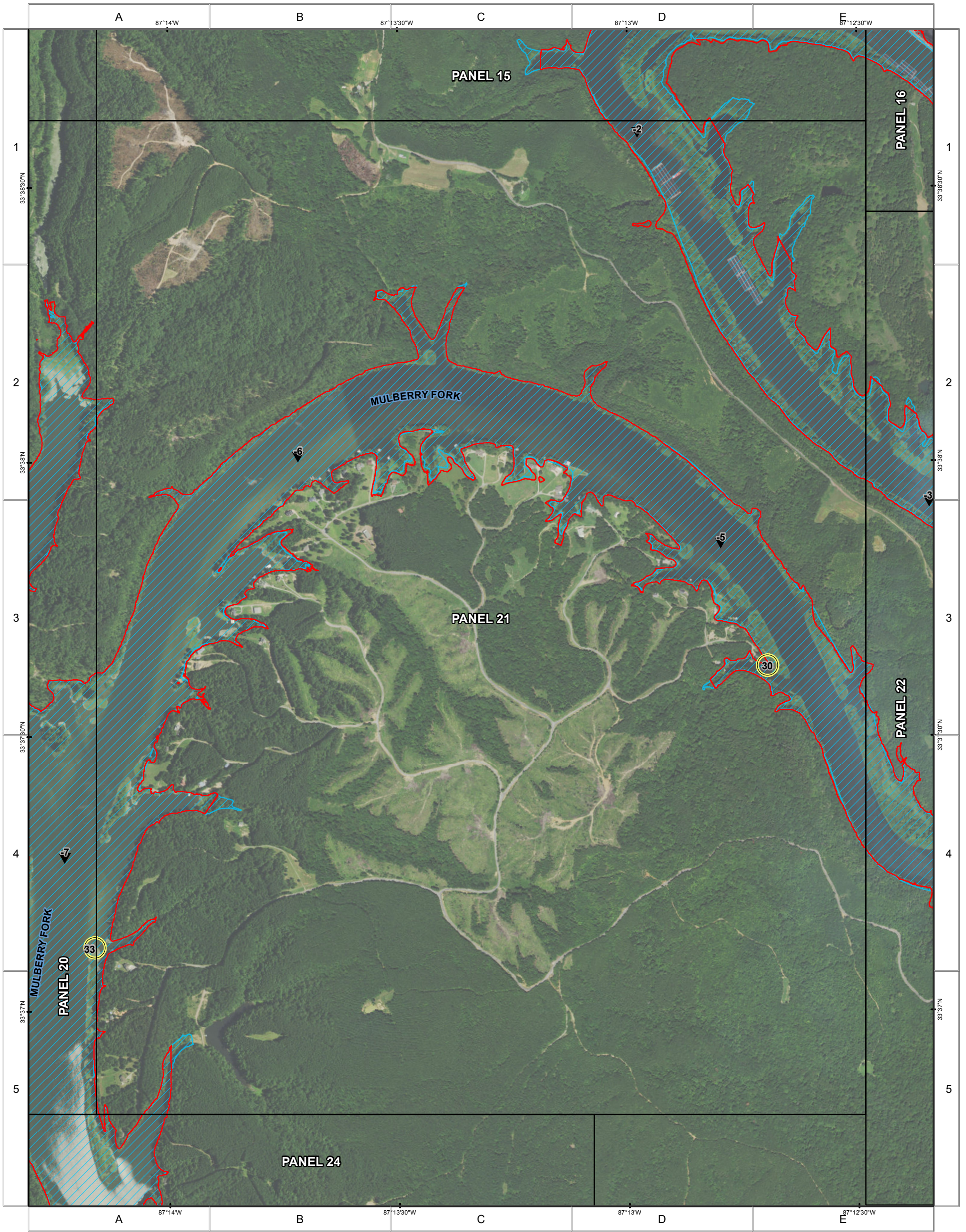
ISSUE DATE: 3/28/2017 PANEL 20 of 27

Notes

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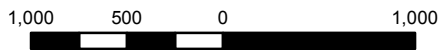
LEGEND


- PANEL
- SUNNY DAY BREACH
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- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL




 Projection
 Transverse Mercator
 NAD 1983 Alabama West
 State Plane









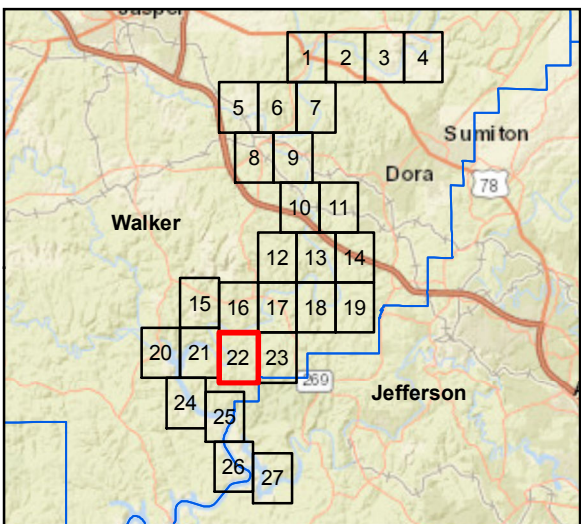
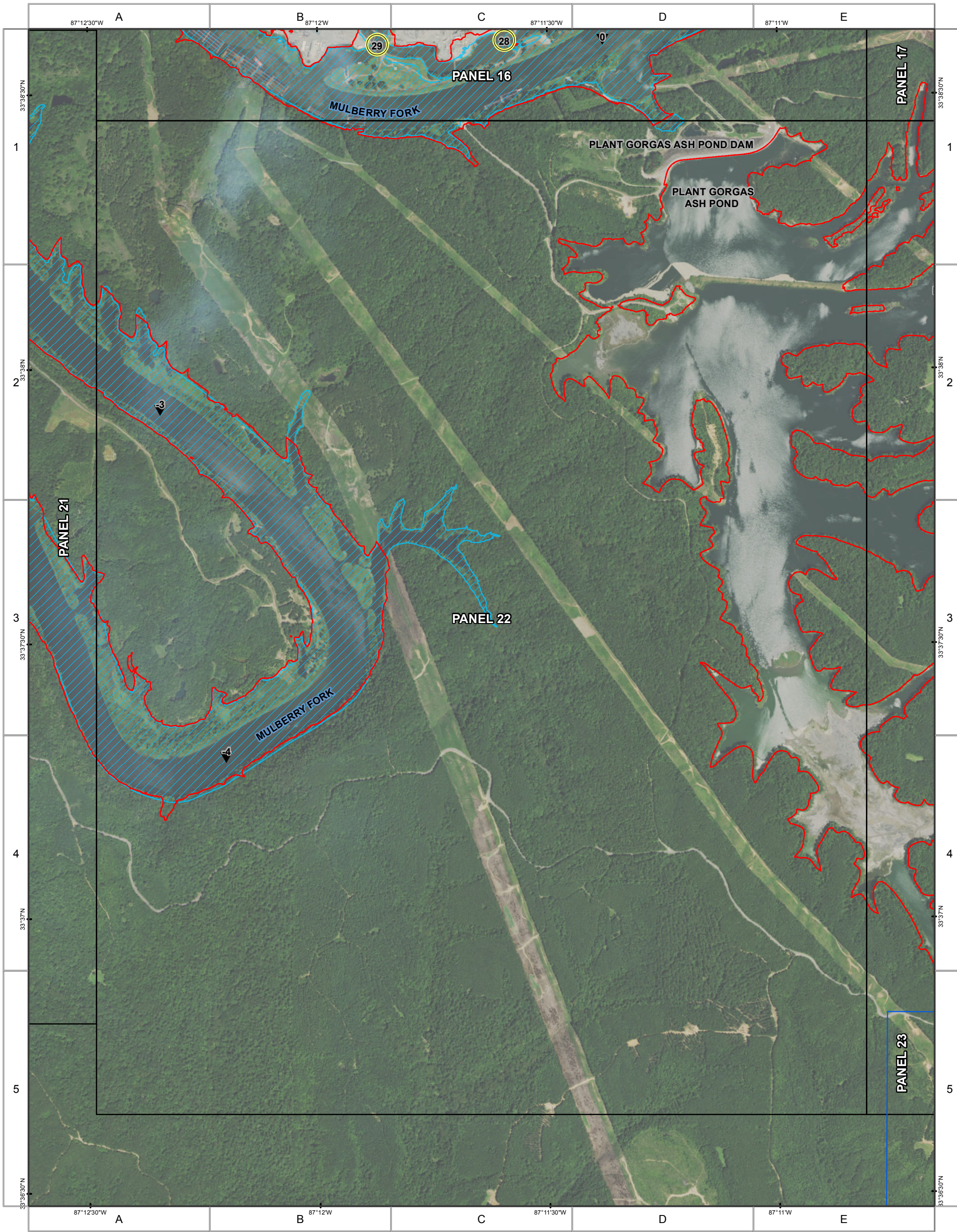
 ISSUE DATE: 3/28/2017 PANEL 21 of 27

Notes

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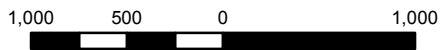
LEGEND

-  PANEL
-  SUNNY DAY BREACH
-  WALKER COUNTY BOUNDARY
-  FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Projection
Transverse Mercator
NAD 1983 Alabama West
State Plane

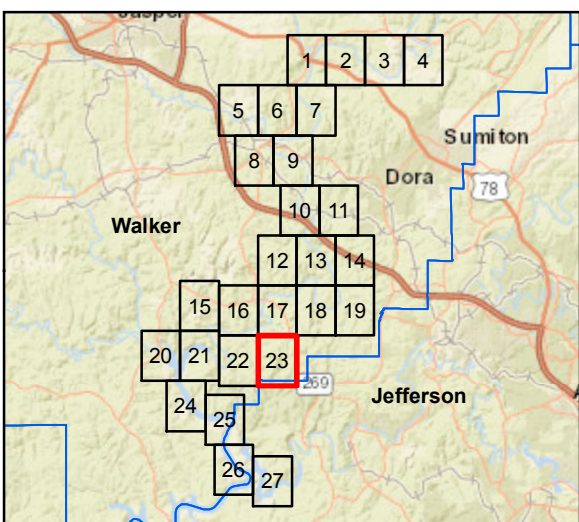
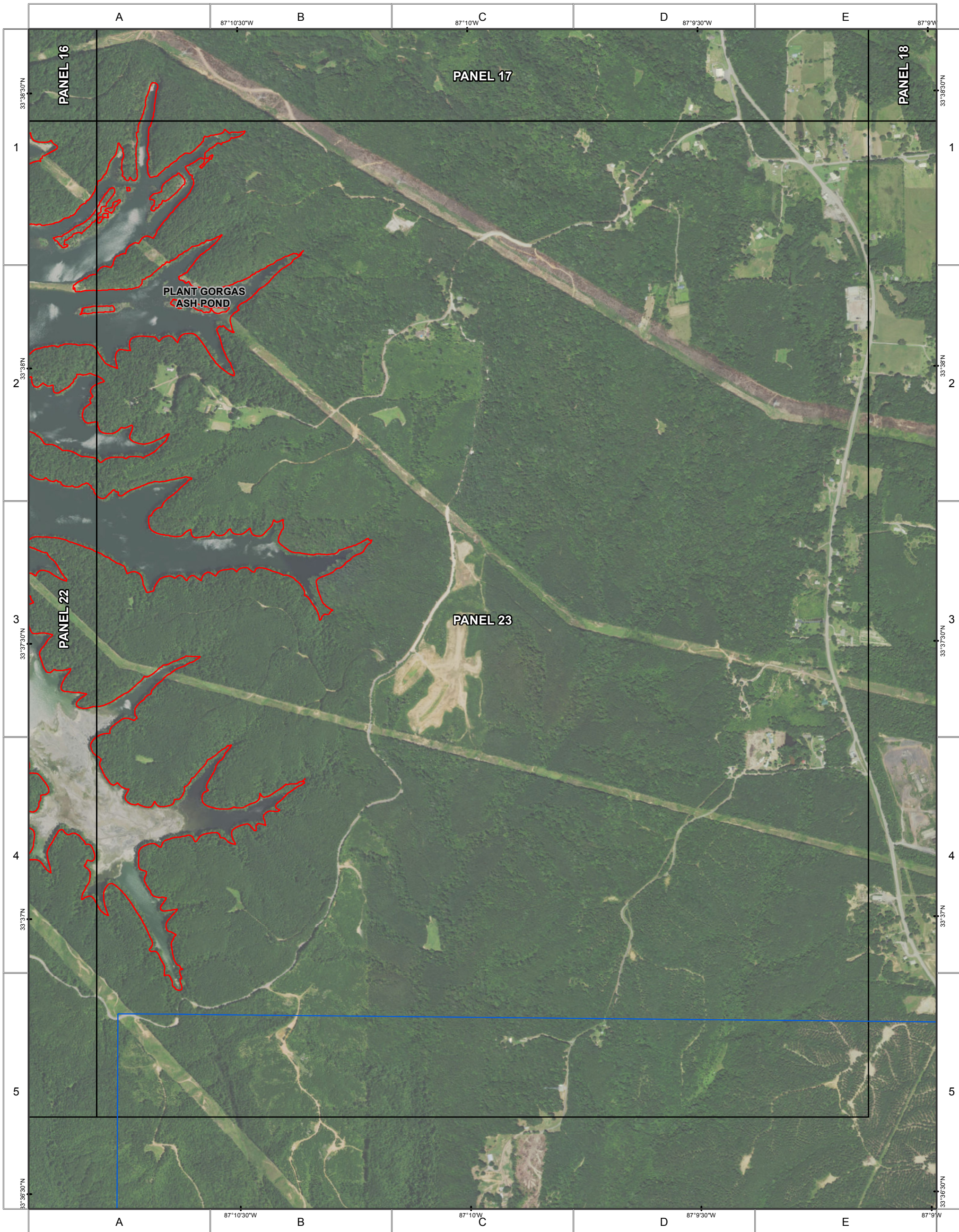
Goldner Associates

ISSUE DATE: 3/28/2017 PANEL 22 of 27

Notes
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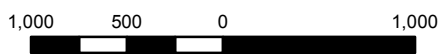
LEGEND


- PANEL
- SUNNY DAY BREACH
- WALKER COUNTY BOUNDARY
- FEMA ZONE A/AE 100 YEAR FLOODPLAIN
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL




 Projection
 Transverse Mercator
 NAD 1983 Alabama West
 State Plane









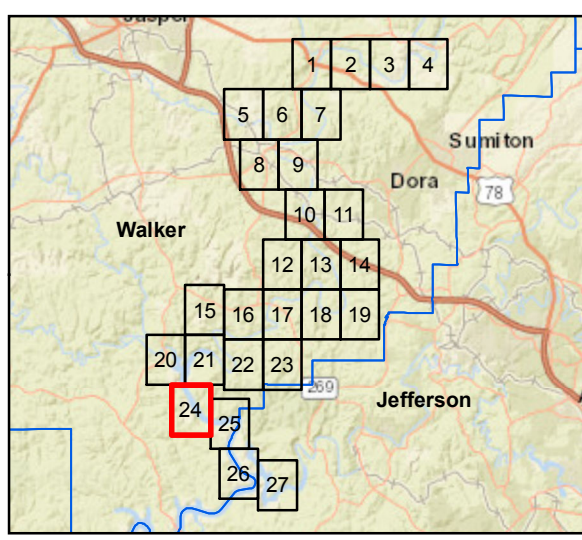
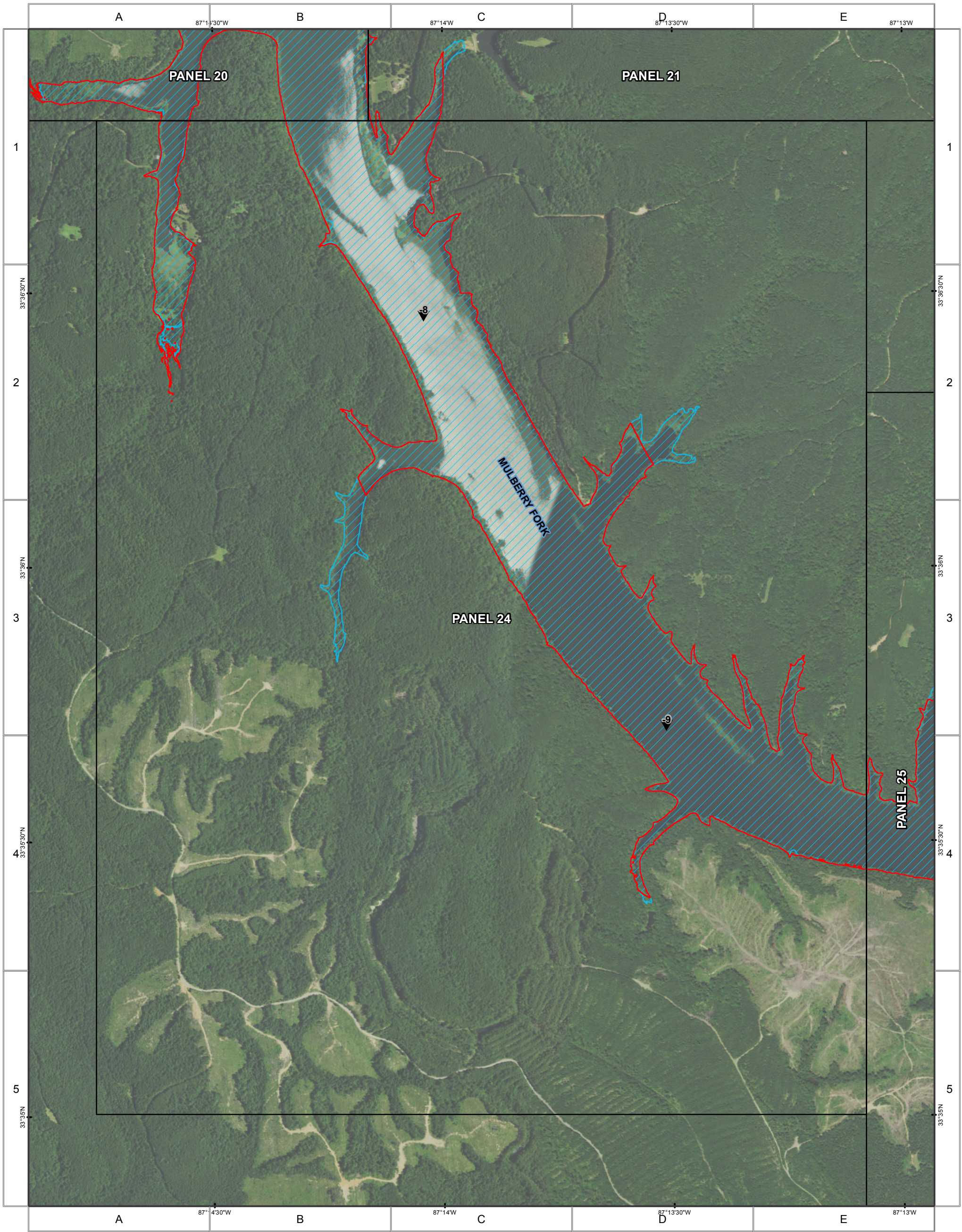
 ISSUE DATE: 3/28/2017 PANEL 23 of 27

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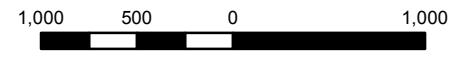
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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

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Transverse Mercator
NAD 1983 Alabama West
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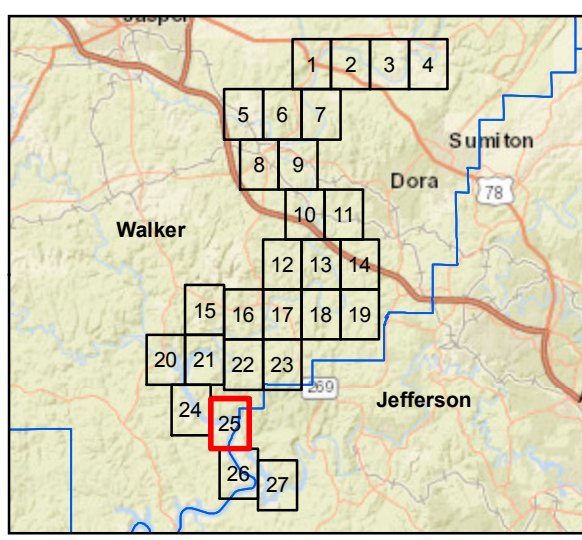
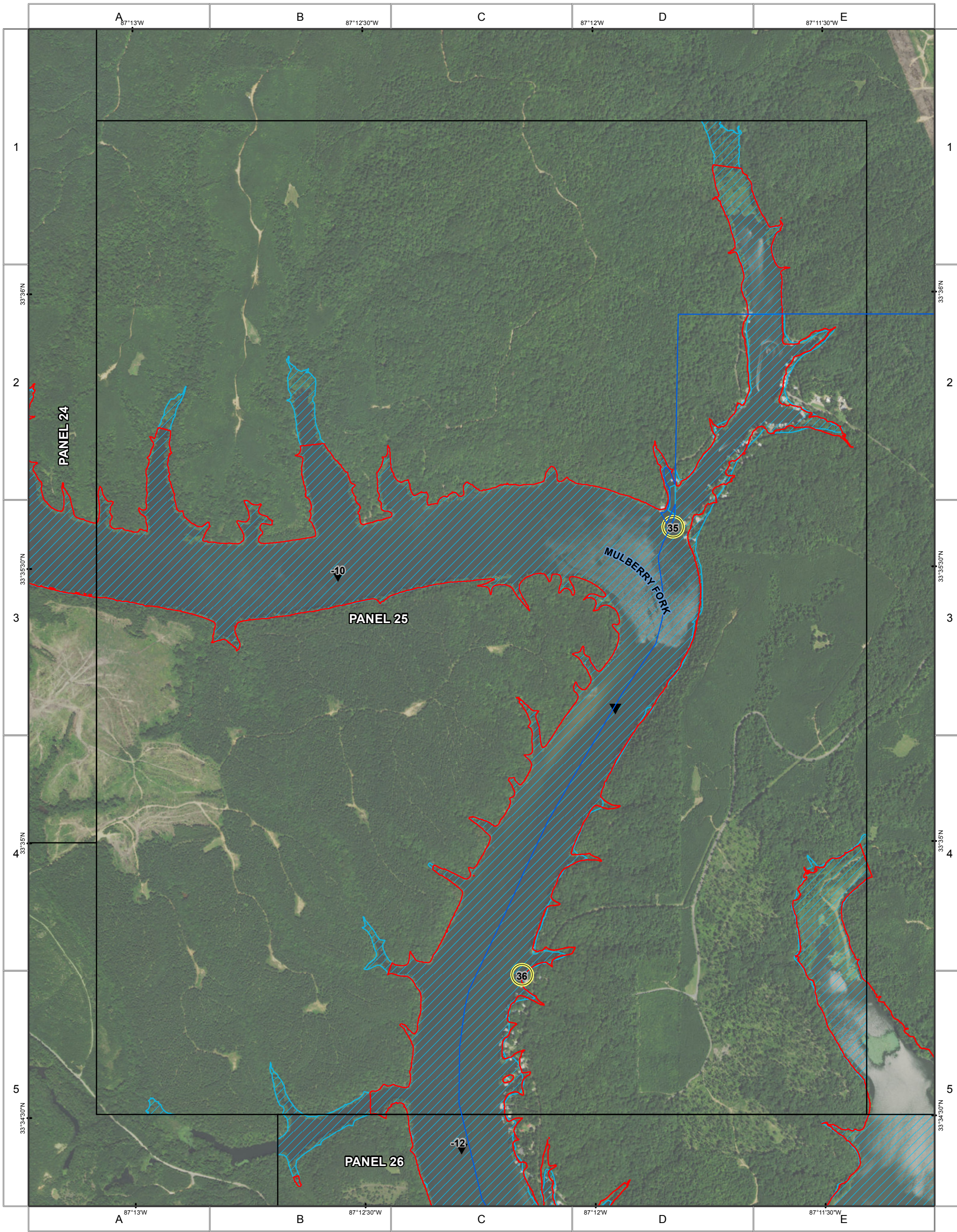
ISSUE DATE: 3/28/2017 PANEL 24 of 27

Notes

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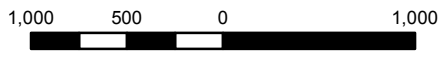
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

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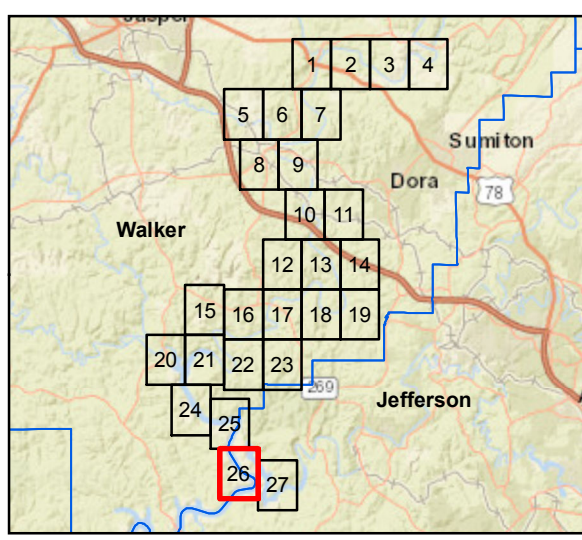
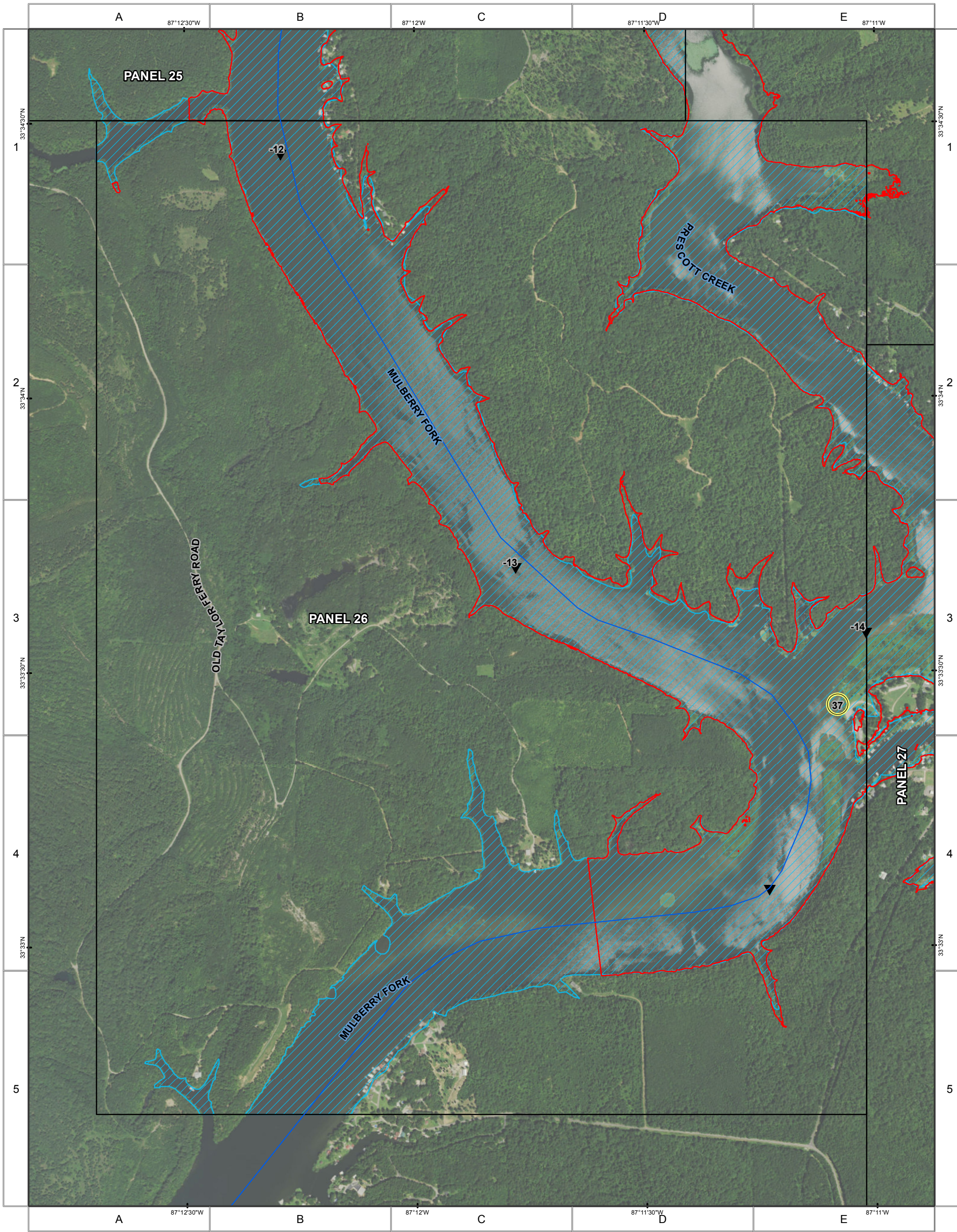
ISSUE DATE: 3/28/2017 PANEL 25 of 27

Notes

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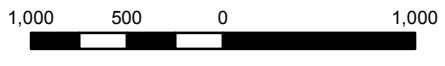
LEGEND

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PLANT GORGAS ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



Golden Associates

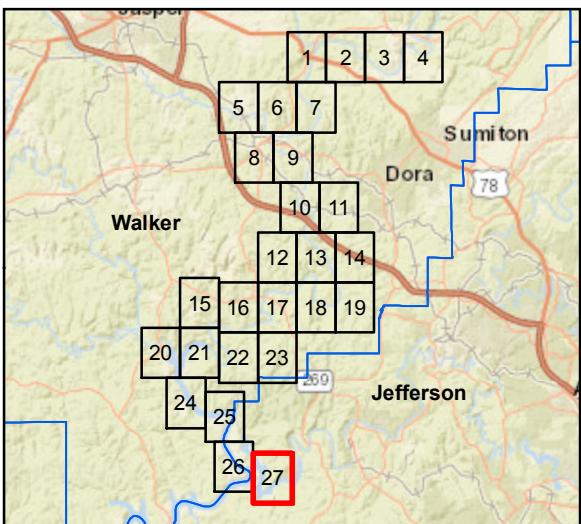
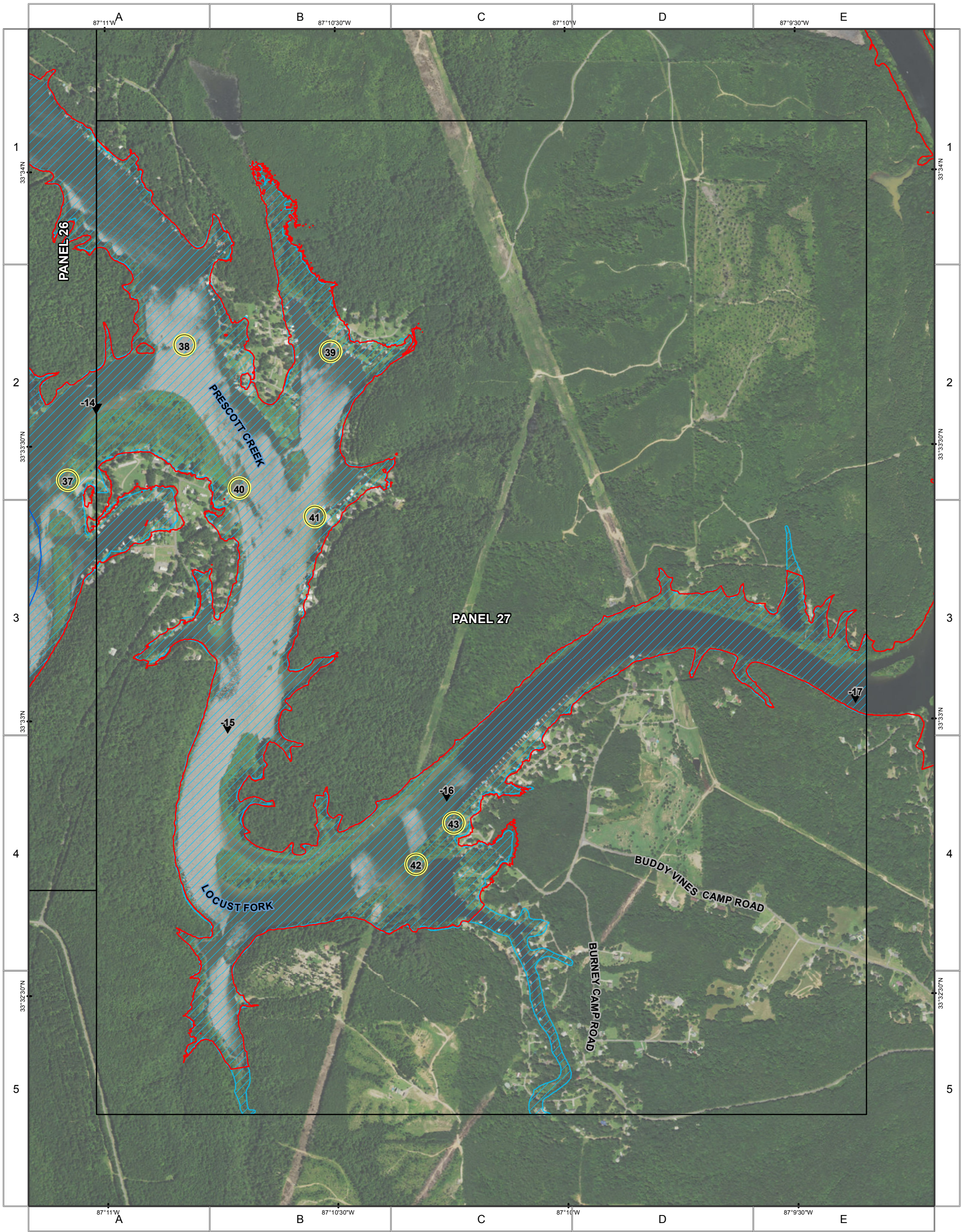
Projection
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State Plane

ISSUE DATE: 3/28/2017 PANEL 26 of 27

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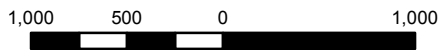
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PLANT GORGAS

ASH POND DAM BREACH ANALYSIS

WALKER COUNTY, AL



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Logo: Golder Associates

ISSUE DATE: 3/28/2017 **PANEL 27** of 27

Notes
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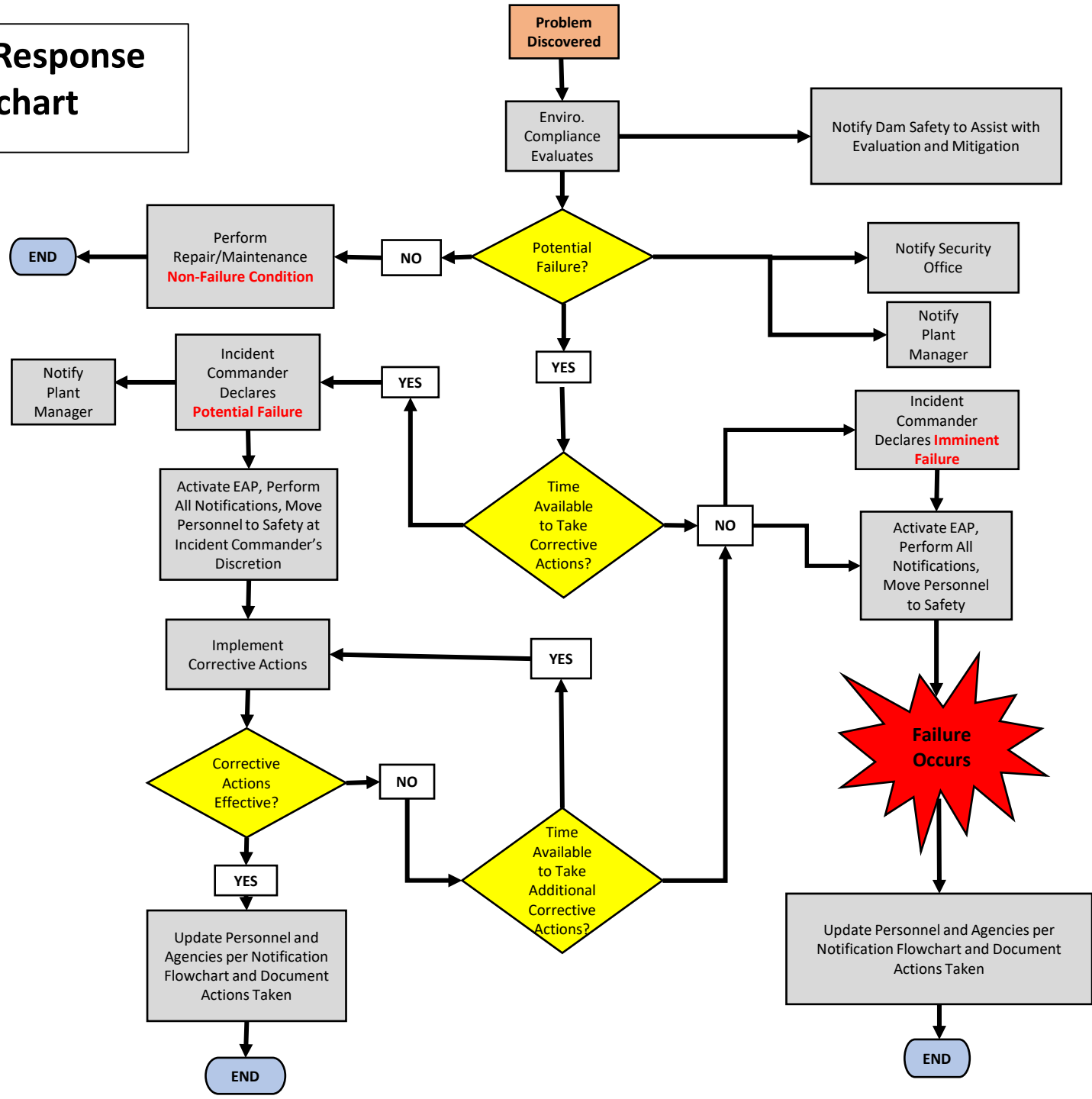
LEGEND

- PANEL
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- AREA OF INTEREST (ID NUMBER WITHIN)
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APPENDIX C

Incident Response Flowchart

Incident Response Flowchart

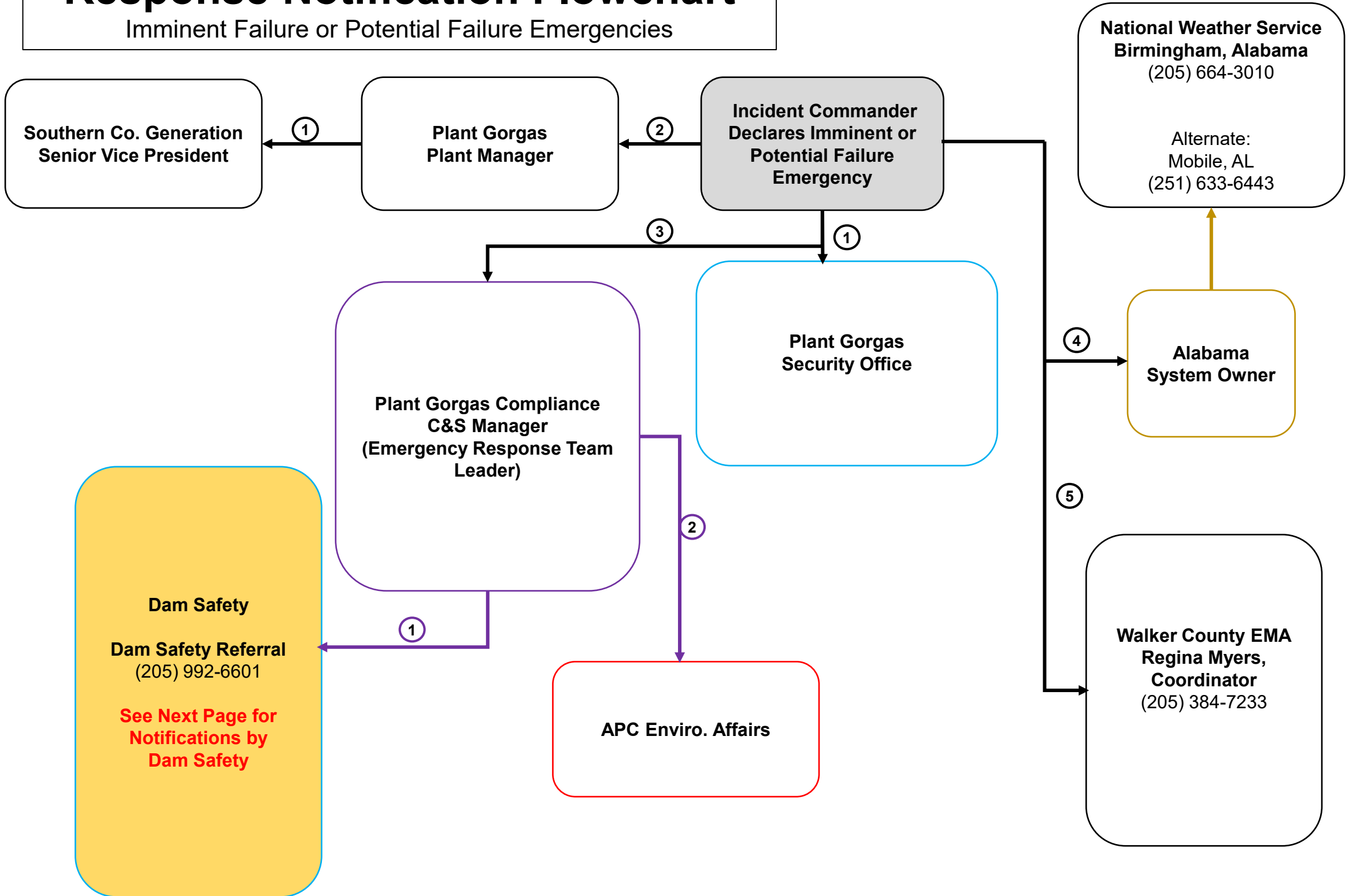


APPENDIX D

Response Notification Flowchart

Response Notification Flowchart

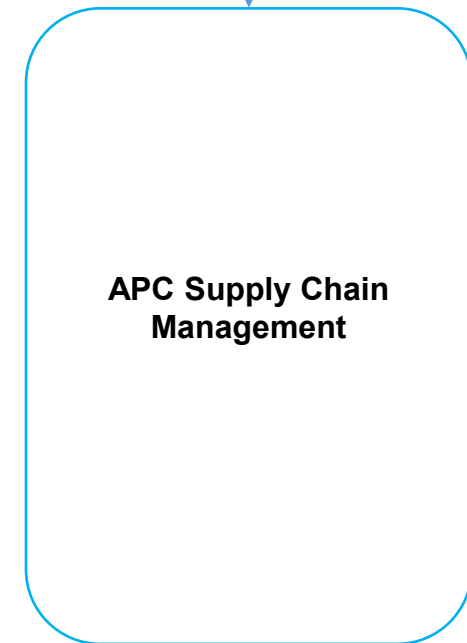
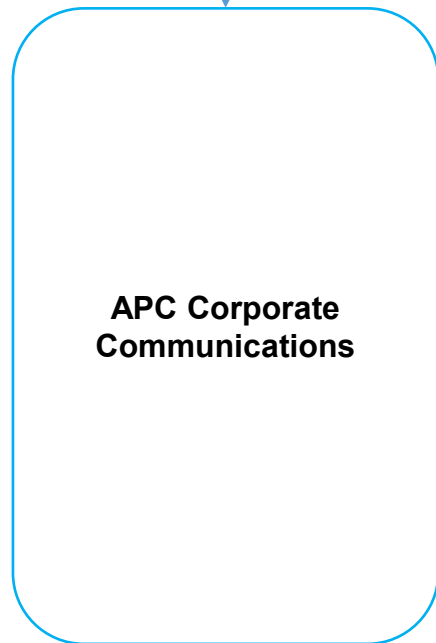
Imminent Failure or Potential Failure Emergencies



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					
Walker 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:* _____

*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