



May 9th, 2014

William J. Pearson
Field Survey
U.S. Department of Interior
Fish & Wildlife Service
Daphne ES Field Office
1208-B Main Street
Daphne, AL 36526

RE: Jim Walter Resources, Inc. -- Mine No. 4 -- Revision R-39 – Area E-H

Dear Mr. William J. Pearson

We are in the process of applying for a mining permit revision for the area described below and would like to request comments from your office in order to proceed with this project.

We are in the process of applying for a mining permit revision for the area described below and would like to request comments from your office in order to proceed with this project. Jim Walter Resources, Inc. has existing mining in Tuscaloosa County, Alabama. In order to accommodate its business expansion in Tuscaloosa County, Jim Walter Resources, Inc. wants to permit a total of 34 acres at the project sites as located in Sections 9, 11, 12, 16, & 27, Township 19 South, Range 8 West, all on the Brookwood, Burchfield Store, & Windham Springs, Alabama U.S.G.S Quadrangle as found in Tuscaloosa County, Alabama. The proposed site locations are shown on the attached 2000' scale project area map attachment "B".

The proposed 34 acres project received a habitat study in April of 2014. In the study it states that there was no habitat found for the listed, threatened and endangered species and that no evidence was found or observed for the presence or possible presence of these listed species. I have attached a copy of this study for you in attachment "C".

The project consists of adding area that has been previously disturbed through timber harvesting Natural gas extraction, mining, silviculture maintenance, and/or existing roads.

In addition to the avoidance of any and all jurisdictional drainage courses Jim Walter Resources Mining plans to adhere to the Alabama Surface Mining Commission Administrative Code, Chapter 880-X-10C, PERFORMANCE STANDARDS SURFACE MINING ACTIVITIES, and will develop an erosion control plan tailored to the mining operation that will be submitted and reviewed by qualified professionals from the Alabama Surface Mining Commission. The mine plan will closely adhere to the protective measure in the ADEM regulations sections 335-6-10.06 (a) and (c) to maintain minimum water quality conditions applicable to all state waters as stated within the approved ADEM NPDES permit AL0026590.

Additionally the NPDES Permit has some maximum and average limitations as set forth by ADEM for this NPDES Permit and are as follows: The pH limit is between 6.0 - 9.0 s.u.; TSS maximum limit is 70 mg/l and the average is 35 mg/l; Fe maximum limit is 7.0 mg/l and the average is 3.5 mg/l; Mn maximum limit is 4.0 mg/l and the average is 2.0 mg/l.

This NPDES Permit has two specific proposed Sediment Basins at Area "E" and Area "G". Area "E"'s proposed sediment basin will address and filter the runoff from this project site prior to entering into a flow path or overland flow that will ultimately drain into Oswald Creek. This basin is identified as proposed sediment basin 032. Area "G"'s proposed sediment basin will address and filter the runoff from this project site prior to entering into a flow path or overland flow that will ultimately drain into an unnamed tributary that drains into the Black Warrior River. This basin is identified as proposed sediment basin 033. The location of the proposed basins 032 & 033 can be seen in attachment "D".

This sediment basin will have storm detentions to absorb any increase of surface run-off, if it should occur. This mining operation will not alter the drainage area of the downstream tributaries. Therefore, the overall quantity of flow to downstream should not be adversely affected. This sediment basin will be designed for a 10 year 24 hour stormwater event at the primary spillway with a design of 25 year 6 hour at the emergency spillway. I have attached a copy of the Sediment Basins Typical Cross-Section in attachment "E" and a copy of the Typical Plan View in attachment "F".

Jim Walter Resources, Inc. will adhere to the current requirements for the inspections of BMPs that are in strict accordance with both Alabama Surface Mining Commission (ASMC) and Alabama Department of Environmental Management (ADEM) Rules and Regulations and are as follows:

Sediment basins are inspected semi-monthly for erosion, instability, etc., with maintenance performed as necessary. Sediment basins are examined quarterly for structural weakness, instability, slope failure, or other hazardous conditions with maintenance performed as necessary. Formal inspections are made annually, by a qualified registered professional engineer or other qualified person under the direction of a professional engineer, including any reports or modifications, in accordance with 880-X- 10C- .20[1(j)] of the Alabama Surface Mining Regulations.

In addition to the frequent inspections (listed above) made by Jim Walter Resources, Inc. personnel or their agents, monthly inspections of the BMPs are performed by ASMC inspectors during the active mining phase. Following a phase II bond release, the ASMC inspections are performed quarterly until the final bond release.

Jim Walter Resources, Inc. will ensure that the water quality is monitored to assure discharges/runoff does not increase stream solids beyond the state water quality standards. All surface water samples will be taken by the grab method. Flow rate measurements of surface water samples will be performed in accordance with ASTM D3858, 10.9.6, p.101 "Standard Practice for Open Channel Flow Measurement of Water by Velocity - Area Method".

All surface water samples are analyzed for at a minimum the pH, Total Iron, Total Manganese, Total Suspended Solids, and reported to the Alabama Department of Environmental Management and Alabama Surface Mining Commission to maintain and ensure adherence to the State's water quality standards required in the approved ADEM NPDES permit AL0026590.

The approved BMP's structures will be inspected within 24 hours of each significant rainfall event and immediate corrective action will be taken if erosion or soil runoff is observed.

Jim Walter Resources, Inc. will immediately re-vegetate any disturbed areas that are not actively being mined and execute any work that results in exposed earth or slopes leading to the surface waters during periods when significant rainfall is not present.

In addition the area to be impacted will be restored immediately following the mineral extraction operation. Through the BMP's required by the Alabama Surface Mining Commission (ASMC) and the Alabama Department of Environmental Management (ADEM) State Water Quality Standards Jim Walter Resources, Inc. believes the project will not have any adverse downstream effects on any Threatened and Endangered Species outside the project area.

Therefore based on intentional drainage course avoidance design of the project area and the information provided above would you concur that the project activities will have no adverse effect on any endangered and threatened species and that no further species consultation will be required.

I would like to thank you for your co-operation concerning this matter and would appreciate your comments at your earliest convenience. If you should have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,
McGehee Engineering Corp.

Amber Tubbs

Amber Tubbs
Project Manager,

Enclosure:

- (A) Project Notification Summary*
- (B) Project Area Map 2000 Scale*
- (C) Habitat Study – McGehee Engineering Corporation – April, 2014*
- (D) Basin Location Maps*
- (E) Sediment Basin Typical Cross Section*
- (F) Sediment Basin Typical Plan View*

Attachment “A”

Project Notification Summary

**PROJECT NOTIFICATION & PROJECT SUMMARY
REQUEST FOR IDENTIFICATION OF THE AREAS OF SPECIAL CONCERN
FOR A SURFACE OR UNDERGROUND MINING OPERATION**

Date: May 9th, 2014

Mining Company Name: Jim Walter Resources, Inc. -- Mine No. 4 -- Revision R-39 – Area E-F

Return Address: P. O. Box 3431, Jasper, Alabama 35502-3431

Return Fax Number: (205) 221-7721

Contact Person: McGehee Engineering Corp., L. Stephen Blankenship

Project Name: Mine No. 4 -- Revision R-39 – Area E-F

Number of Acres: 34 Acres

USGS Quad Sheet(s) on which the Mine occurs: Abernant, Burchfield Store, & Oak Grove

County: Jefferson & Tuscaloosa County

See Attached Map

Current Landuse of Permit and Adjacent Areas:

Undeveloped/No current use

Dominant Vegetation Communities of Permit and Adjacent Areas:

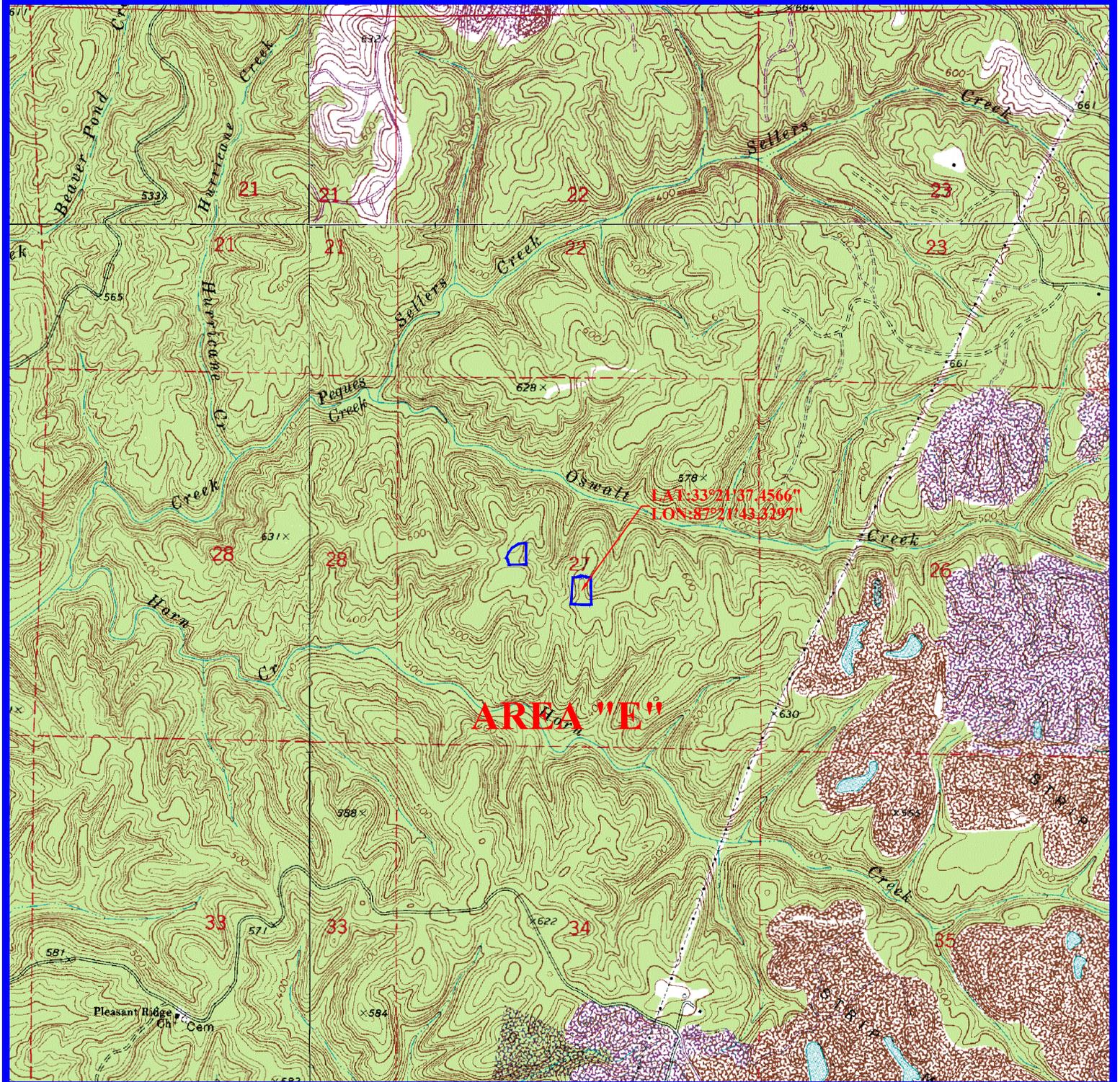
See Attached Habitat Study

Project:

Jim Walter Resources, Inc. -- Mine No. 4 -- Revision R-39 – Area E-F

Attachment ‘B’

Project Area Map 2000 Scale



SCALE: 1" = 2000'
February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 4 ACRES TOTAL)



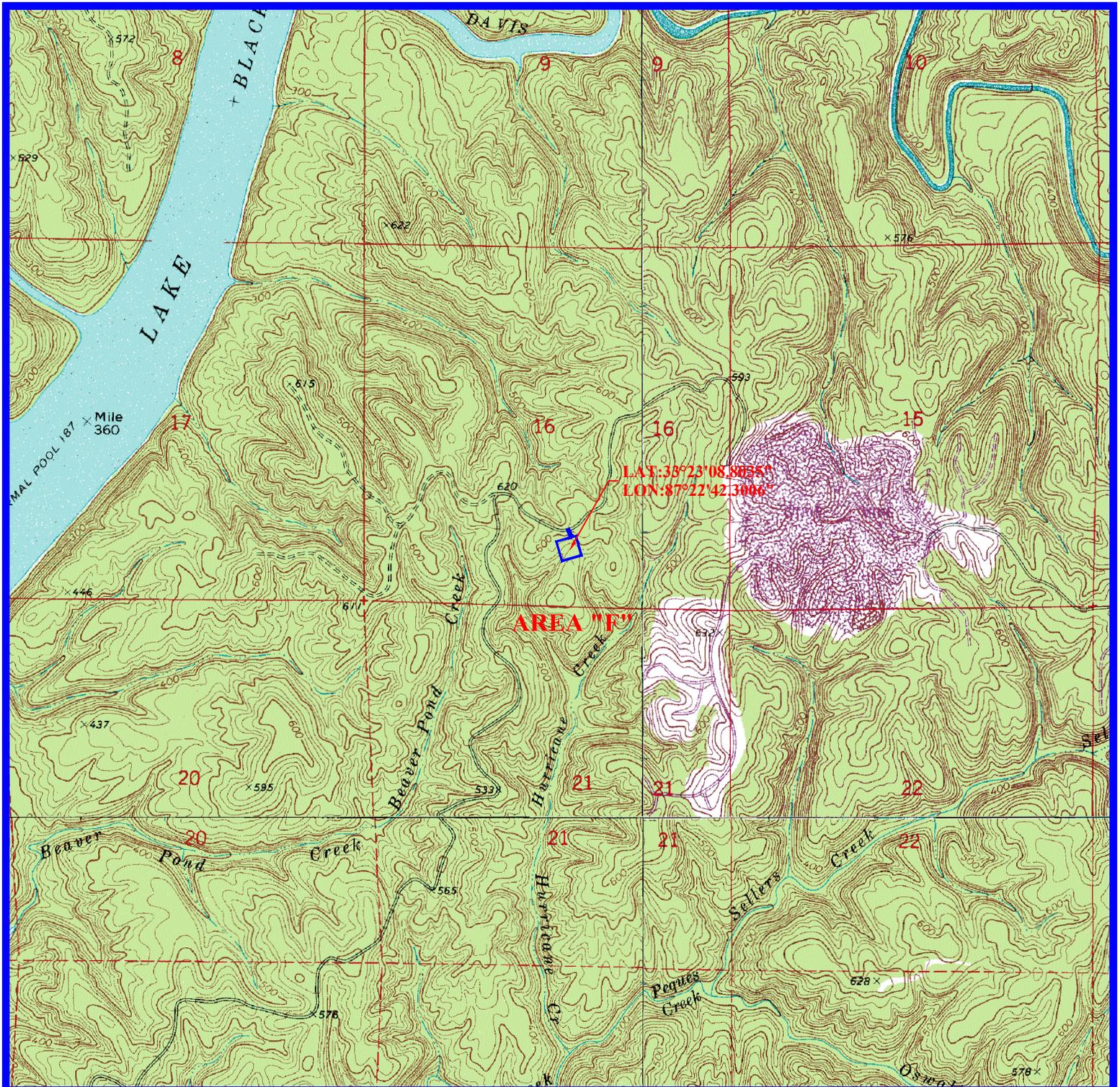
PROJECT AREA MAP

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE BROOKWOOD, AL. USGS QUAD.

MEC
mcgehee engineering corp
post office box 3431
jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

 REVISION R-39 AREA "E" BOUNDARY

Latitude: 33°21'37" N
Longitude: 87°21'43" W



SCALE: 1" = 2000'
February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 2 ACRES TOTAL)



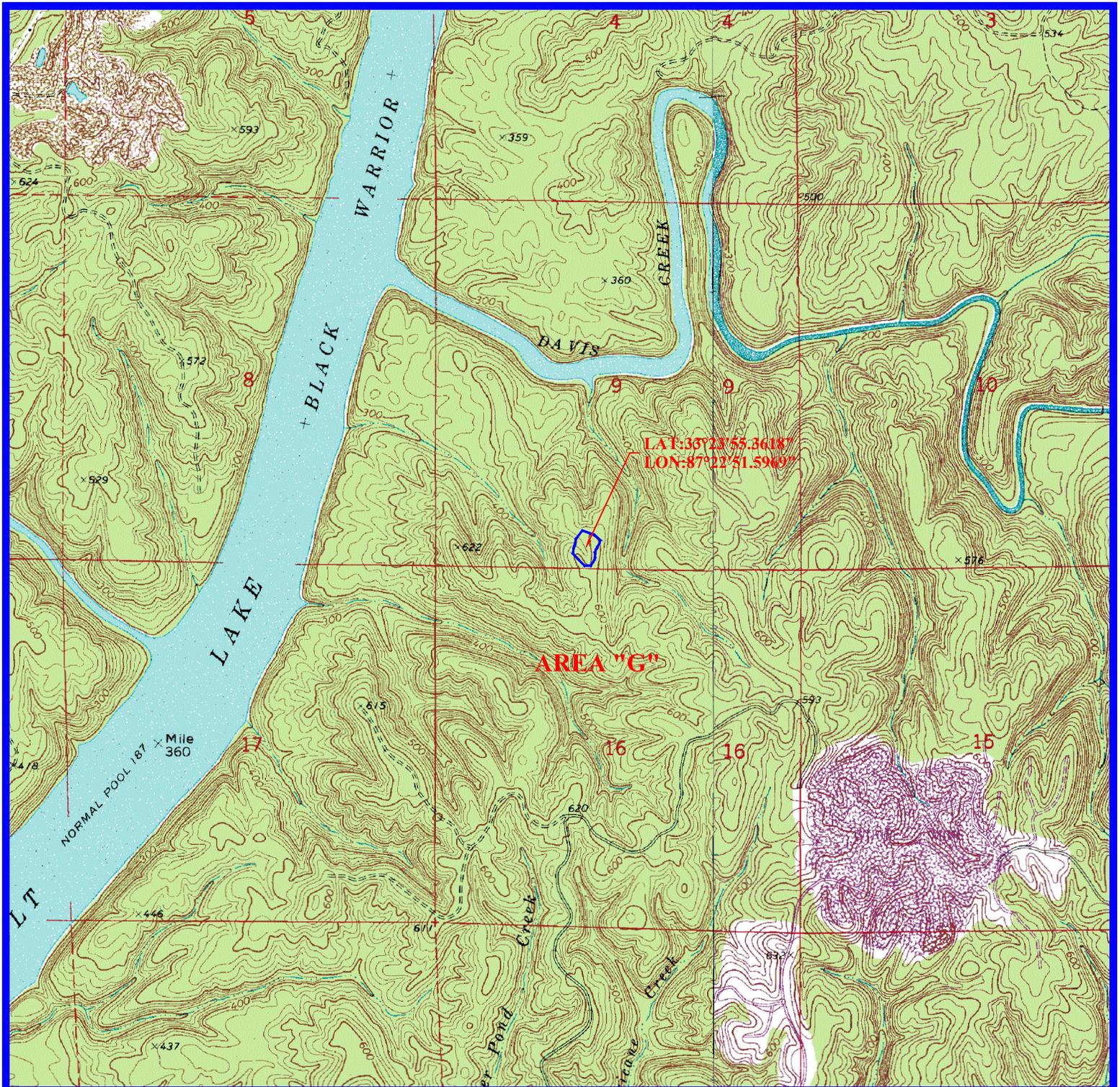
PROJECT AREA MAP

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WINDHAM SPRINGS, AL. USGS QUAD.

MEC
mcgehee engineering corp
post office box 3431
jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

 REVISION R-39 AREA "F" BOUNDARY

Latitude: 33°23'09" N
Longitude: 87°22'42" W



SCALE: 1" = 2000'
February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 3 ACRES TOTAL)



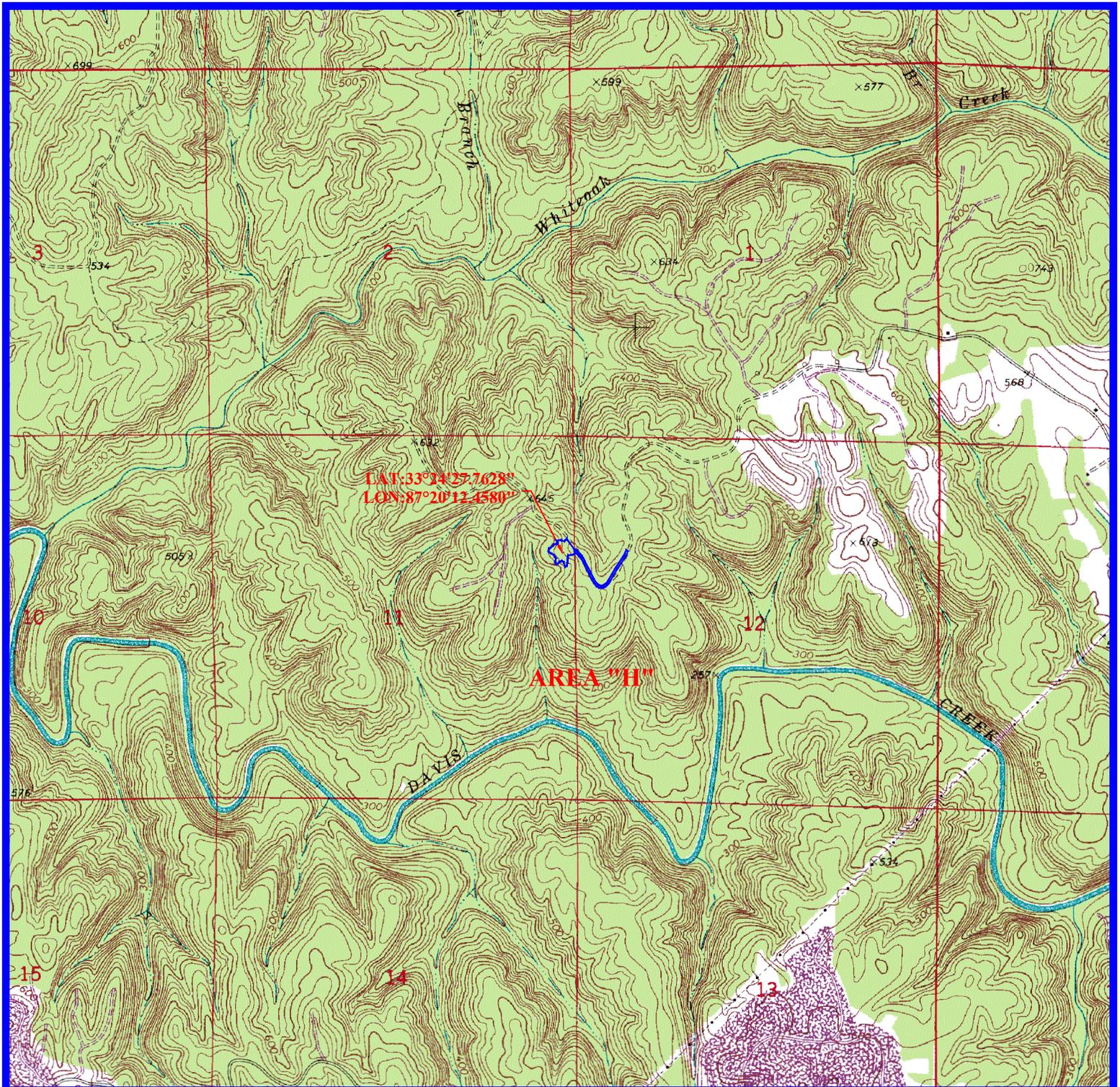
PROJECT AREA MAP

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WINDHAM SPRINGS, AL. USGS QUAD.



 REVISION R-39 AREA "G" BOUNDARY

Latitude: 33°23'55" N
Longitude: 87°22'52" W



LAT: 33°34'27.7628"
 LON: 87°20'12.4580"

AREA "H"

SCALE: 1" = 2000'
 February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
 (APPROXIMATELY 3 ACRES TOTAL)



PROJECT AREA MAP

SECTIONS 11 & 12, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE BURCHFIELD, AL. USGS QUAD.



 REVISION R-39 AREA "H" BOUNDARY

Latitude: 33°24'28" N
 Longitude: 87°20'12" W

Attachment “C”

Habitat Study – McGehee Engineering Corporation – April, 2014

BIOLOGICAL HABITAT ASSESSMENT

JIM WALTER RESOURCES

MINE NO. 4

REVISION R-39 – AREA E-H

Prepared For:

JIM WALTER RESOURCES

12 acres +/-

Sections 11, 12, 16, & 27, Township 19 South, Range 8 West

ALL IN

TUSCALOOSA COUNTY ALABAMA

April 11th, 2014

**MCGEHEE
ENGINEERING CORP.**
P. O. Box 3431
450 19th Street West
Jasper, Alabama 35502-3431
Telephone: (205) 221-0686
Fax: (205) 221-7721

L. Stephen Blankenship
Email: stephenb@mcgehee.org



BIOLOGICAL HABITAT ASSESSMENT

Prepared For:

JIM WALTER RESOURCES

MINE NO. 4

REVISION R-39 – AREA E-H

12 acres +/-

Sections 11, 12, 16, & 27, Township 19 South, Range 8 West

ALL IN

TUSCALOOSA COUNTY ALABAMA

Prepared by:

MCGEHEE ENGINEERING CORP.

P. O. Box 3431

450 19th Street West

Jasper, Alabama 35502-3431

Telephone: (205) 221-0686

Fax: (205) 221-7721

Email: stephenb@mcgehee.org

Executive Summary

McGehee Engineering Corporation performed a biological habitat assessment survey for habitat and the possible presence of the species federally listed as endangered, threatened, or of concern on February of 2014. The study was conducted on the proposed Jim Walter Resources – Mine No. 4 – Revision R-39 – Area E-H project areas. The proposed project area consists of approximately 12 acres at the project sites as located in Sections 11, 12, 16, & 27, Township 19 South, Range 8 West, all on the Brookwood, Burchfield Store, & Windham Springs, Alabama U.S.G.S Quadrangle as found in Tuscaloosa County, Alabama.

The proposed project areas are previously disturbed. Area E is previously affected through recent timber removal and replanting of 3 to 5 year old Loblolly pine stands. Area F is a area impacted from natural gas extraction. Area G is along an existing gas well road in an area that has had timber removal within the past 15 years. The vegetation has naturally re-vegetated with a dominance of Virginia pines. Area H is an existing gas well road and an area that was under gas well development at time of assessment. The vegetation behind this development is similar to area H in type and age.

There are no drains, wetlands, caves or open abandoned mines within these areas of interest.

The biological habitat assessment survey focused in on seventeen T, E & C species listed in Tuscaloosa County, as can be found in Table 2.1 along with the Indiana Bat, Bald Eagle, Wood Stork and the Red Cockaded Woodpecker.

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- Appendix D — Soil Map

Chapter 1. Proposed Project Review

1.1 Introduction

McGehee Engineering Corporation performed a biological habitat assessment survey for habitat and the possible presence of the species federally listed as endangered, threatened, or of concern on March of 2014. The study was conducted on the proposed Jim Walter Resources – Mine No. 4 – Revision R-39 – Area E-H project areas. The proposed project area consists of approximately 12 acres at the project sites as located in Sections 11, 12, 16, & 27, Township 19 South, Range 8 West, all on the Brookwood, Burchfield Store, & Windham Springs, Alabama U.S.G.S Quadrangle as found in Tuscaloosa County, Alabama.

The proposed project areas are previously disturbed. Area E is previously affected through recent timber removal and replanting of 3 to 5 year old Loblolly pine stands. Area F is a area impacted from natural gas extraction. Area G is along an existing gas well road in an area that has had timber removal within the past 15 years. The vegetation has naturally re-vegetated with a dominance of Virginia pines. Area H is an existing gas well road and an area that was under gas well development at time of assessment. The vegetation behind this development is similar to area H in type and age.

There are no drains, wetlands, caves or open abandoned mines within these areas of interest.

The proposed Jim Walter Resources – Mine No. 4 – Revision 39 Area E-H project areas are located in the Brookwood community of Tuscaloosa County. Natural gas extraction, mining and silviculture maintenance are common in this area.

1.2 Area "E" Project Location

Jim Walter Resources, Inc. – Mine No. 4 – Revision 39 – Area E project consists of approximately 4 acres and is located in Section 27, Township 19 South, Range 8 West, as located in Tuscaloosa County, Alabama Brookwood, Alabama U.S.G.S Quadrangle. The proposed site location is shown below on the attached project area map Figure 1 and (Appendix "A").

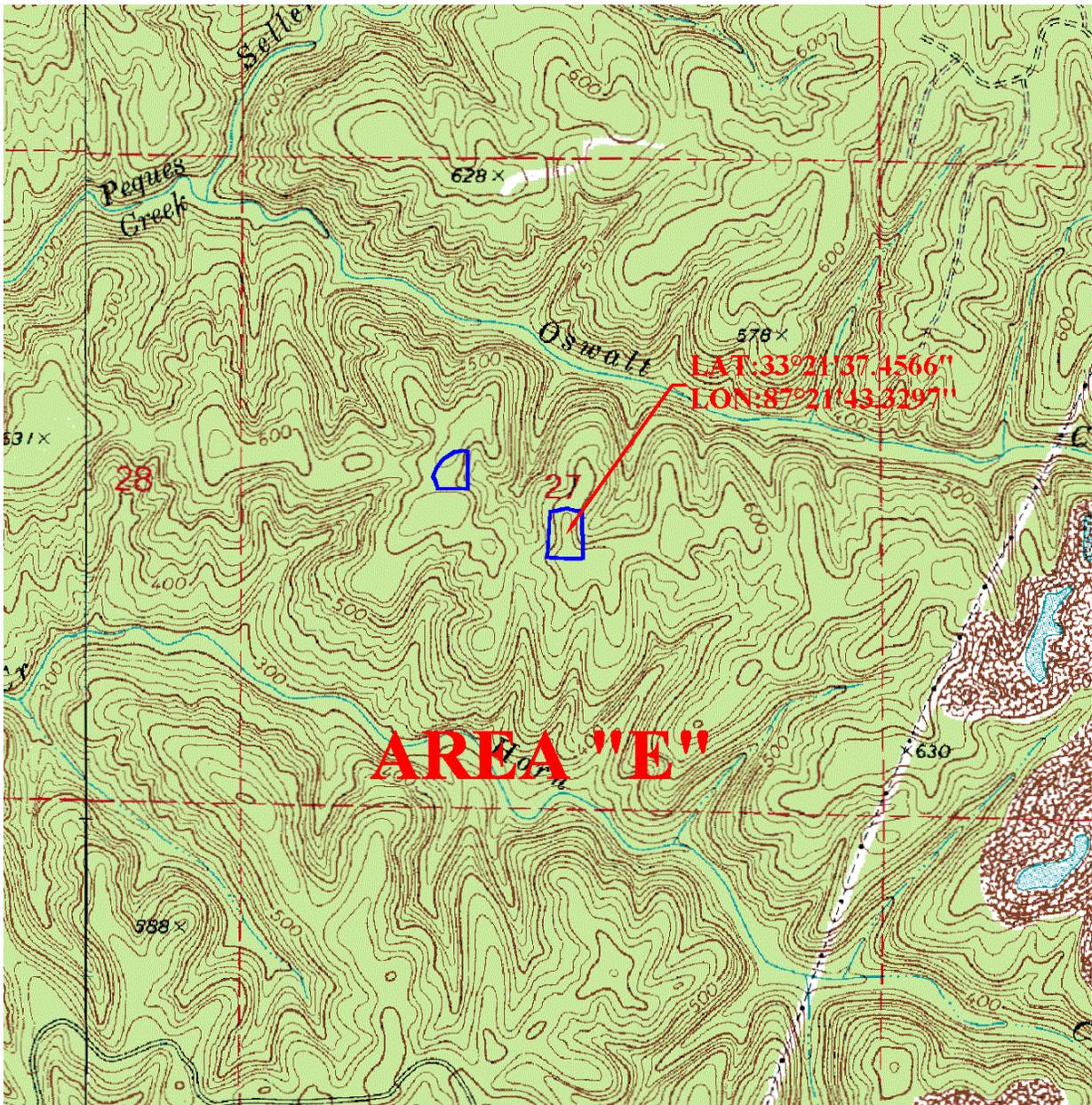


Figure 1. Project Area E Map. (not to scale)

1.3 Area "F" Project Location

Jim Walter Resources, Inc. – Mine No. 4 – Revision 39 – Area F project area consists of approximately 2 acres and is located in Section 16, Township 19 South, Range 8 West, as located in Tuscaloosa County, Alabama on the Windham Springs, Alabama U.S.G.S Quadrangle. The proposed site location is shown below on the attached project area map Figure 1 and (Appendix "A").

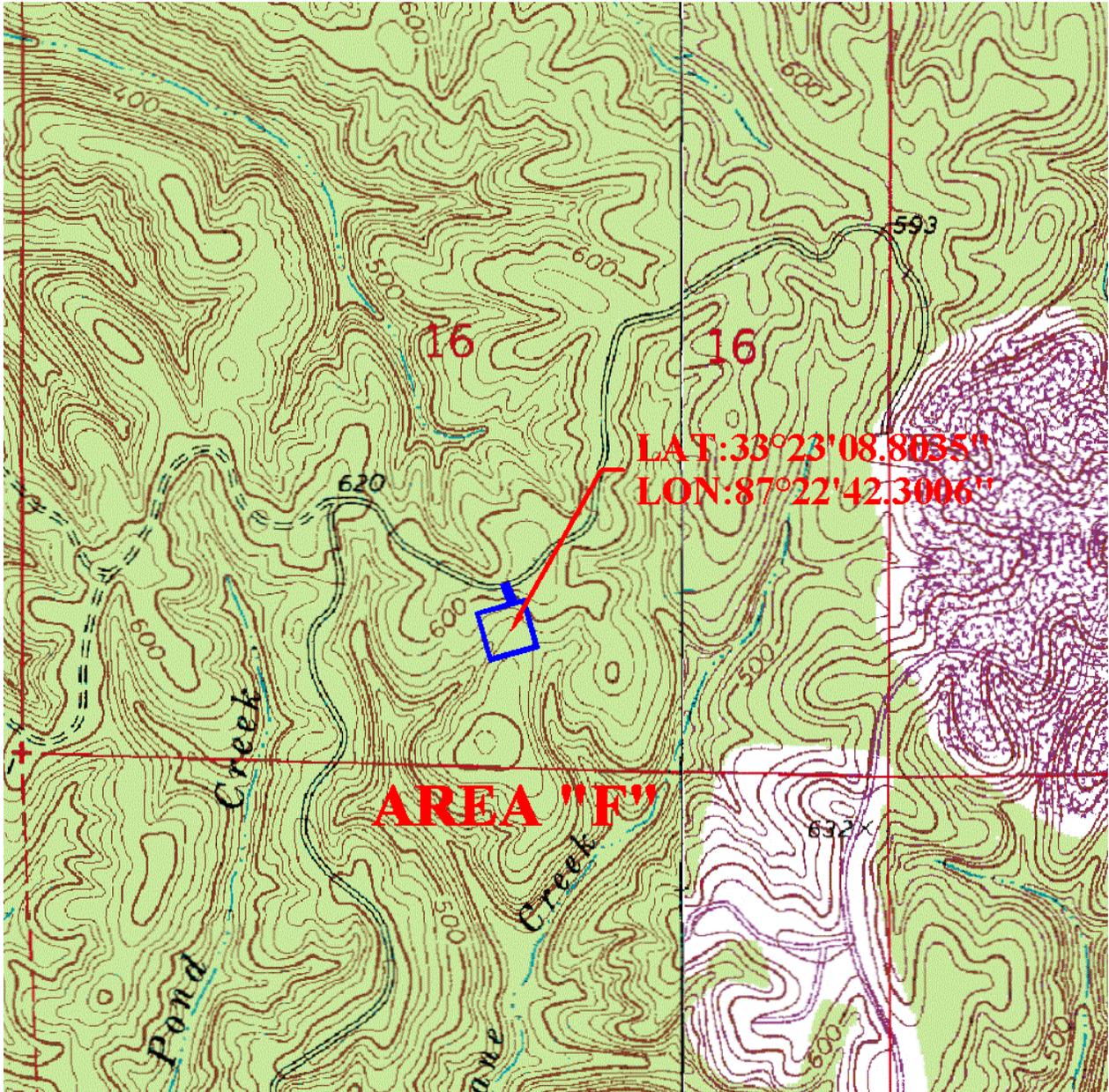


Figure 2. Project Area F Map. (not to scale)

1.4 Area "G" Project Location

Jim Walter Resources, Inc. – Mine No. 4 – Revision 39 – Area G project consists of approximately 3 acres and is located in Section 9, Township 19 South, Range 8 West, as located in Tuscaloosa County, Alabama on the Windham Springs, Alabama U.S.G.S Quadrangle. The proposed site location is shown below on the attached project area map Figure 1 and (Appendix "A").

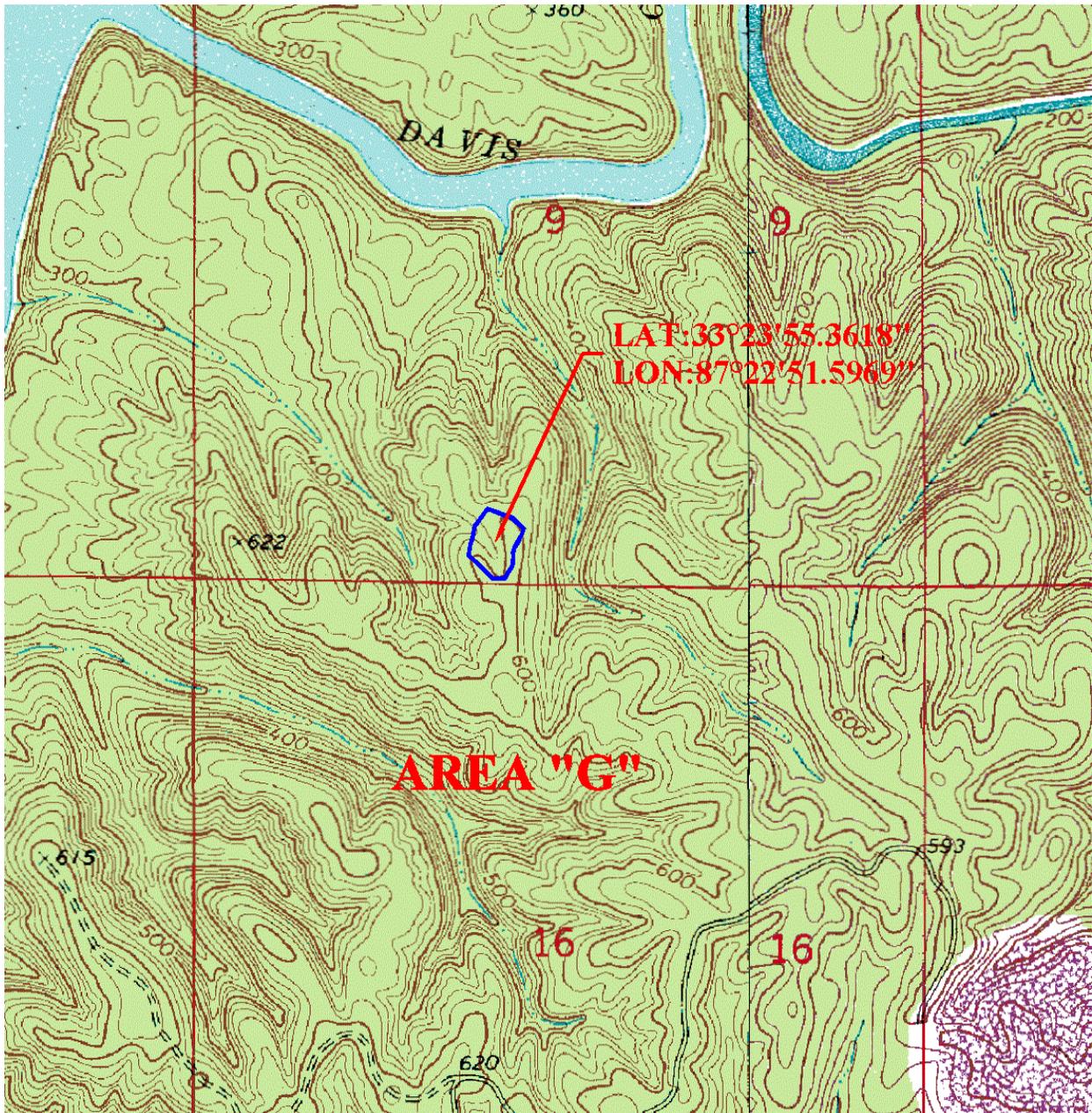


Figure 3. Project Area G Map. (not to scale)

1.5 Area "H" Project Location

Jim Walter Resources, Inc. – Mine No. 4 – Revision 39 – Area H project consists of approximately 3 acres and is located in Section 11 & 12, Township 19 South, Range 8 West, as located in Tuscaloosa County, Alabama on the Burchfield Store, Alabama U.S.G.S Quadrangle. The proposed site location is shown below on the attached project area map Figure 1 and (Appendix "A").

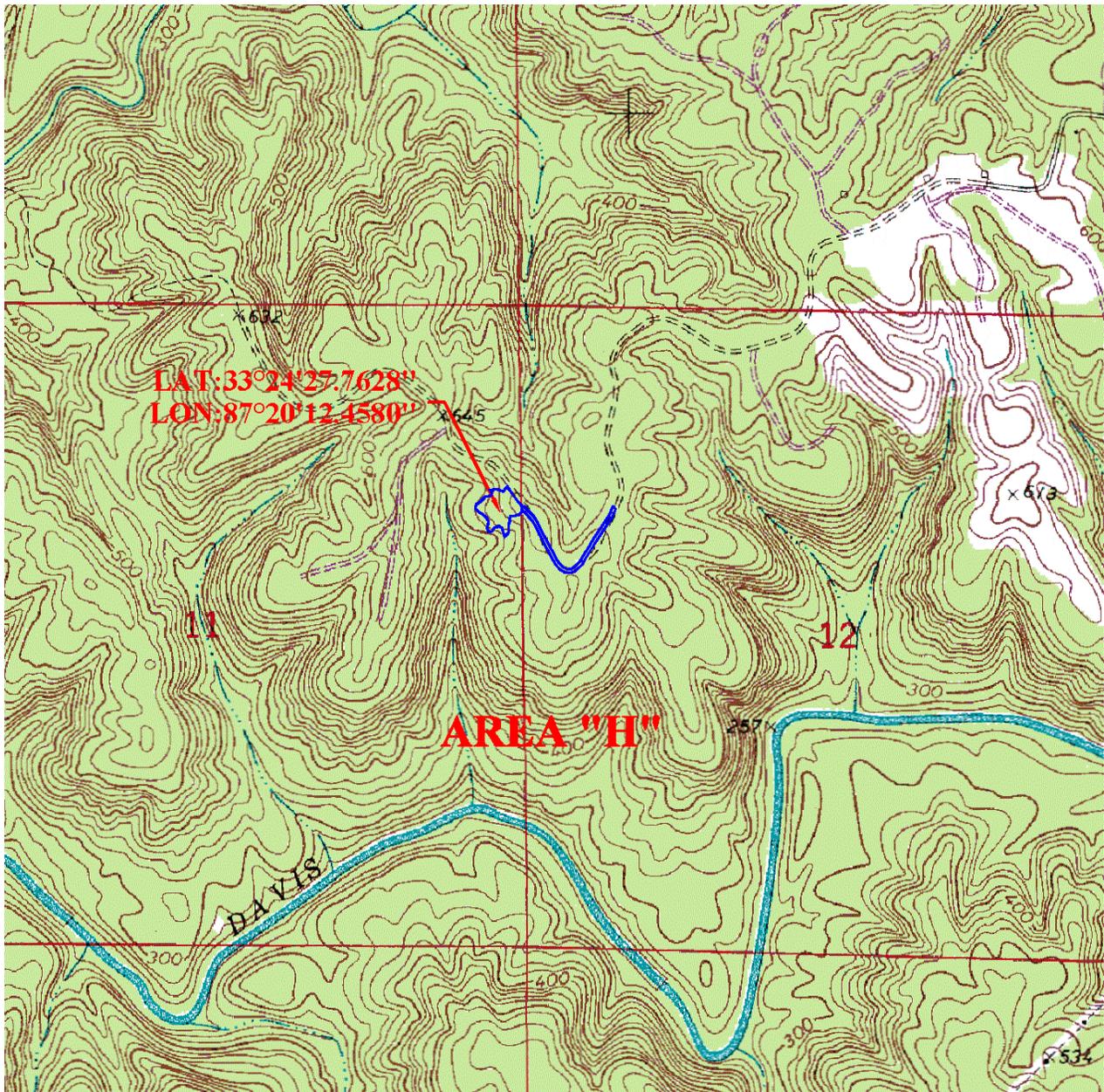


Figure 3. Project Area H Map. (not to scale)

Chapter 2. Threatened & Endangered Species List

2.1 Species Identification

The U.S. Fish and Wildlife Service (USFWS) threatened, endangered, and candidate species list for Tuscaloosa County was reviewed by a qualified biologist in order to determine species potentially occurring in the project vicinity (Table 2.1). In addition, the Alabama Natural Heritage Section Database that contains numerous records of sensitive species in Alabama was queried to provide a list of special status species and habitats that may have been documented as occurring within the project area and/or the project vicinity.

Table 2.1. List of Threatened, Endangered and Candidate Species for Tuscaloosa County.

Common Name <i>Scientific Name</i>	Status	General Habitat
Bald eagle <i>Haliaeetus leucocephalus</i>	BGEPA	Large open bodies of water where adequate food exist and human disturbance is limited
Wood stork <i>Mycteria americana</i>	E	Freshwater and estuarine wetlands, primarily nesting in cypress or mangrove swamps. Narrow tidal creeks or flooded tidal pools where fish become concentrated
Red-cockaded woodpecker <i>Picoides borealis</i>	E	Open, mature and old growth pine ecosystems with minimal hardwood over story and mid story
Mitchell's Satyr Butterfly <i>Neonympha mitchellii mitchellii</i>	E	Fens-- low acid, mainly groundwater fed peat wetlands with highly diversified plant and animal life, including grasses, sedges, rushes and wildflowers
Gray Bat <i>Myotis grisescens</i>	E	Live in caves year-round; Winter hibernation in deep vertical caves, Summer roost in caves along rivers
Indiana Bat <i>Myotis sodalis</i>	E	Lives in a variety of habitats including floodplain and riparian zones for roosting with upland area nearby and caves and sometimes mines for hibernating and mating
Fine-lined pocketbook mussel <i>Hamiota (=Lampsilis) altilis</i>	T	Large rivers to small creek habitats swift flowing riffles and gravel-cobble substrates
Ovate clubshell mussel <i>Pleurobema perovatum</i>	E	Sand and gravel bottom free flowing streams and rivers with good water quality and stable stream channels
Orange-nacre mucket mussel <i>Hamiota (=Lampsilis) perovalis</i>	T	Large rivers to small creek habitats swift flowing riffles and gravel-cobble substrates
Southern clubshell <i>Pleurobema decisum</i>	E	Sand and gravel bottom free flowing streams and rivers with good water quality and stable stream channels
Alabama moccasinshell <i>Medionidus acutissimus</i>	T	Small to mid-sized streams with sandy-gravel and gravel substrates with moderate flow
Triangular kidneyshell mussel <i>Ptychobranchus greenii</i>	E	Sand and gravel bottom free drainage courses and rivers with good water quality and stable stream channels
Alabama Heelsplitter <i>Potamilus inflatus</i>	T	Sand and gravel bottom, moderate to low current, free flowing streams and rivers with good water quality
Warrior pigtoe mussel <i>Pluerobema rubellum</i>	E	Sand and gravel bottom free flowing streams and rivers with good water quality and stable stream channels; Presumed extinct

Upland combshell mussel <i>Epioblasma metastrata</i>	<i>E</i>	Stable gravel and sand riffles of high water quality streams
Dark pigtoe mussel <i>Pluerobema furvum</i>	<i>E</i>	Sand/gravel/cobble shoals and rapids in small rivers and large streams; usually highly oxygenated water with moderate flow
Flattened musk turtle <i>Sternotherus depressus</i>	<i>T</i>	Free-flowing creek or small river with pools about 1 m deep or more, with rocks, abundant mollusks, low silt load and deposits, moderate temperature rock-bottomed to sandy substrate
Black Warrior waterdog <i>Necturus alabamensis</i>	<i>C</i>	Streams with deep pools 1 to 4 meters with reduced sedimentation and large leaf packs supporting mayfly and caddis fly larvae
White Fringeless orchid <i>Platanthera integrilabia</i>	<i>C</i>	Wet, flat, boggy areas at the head of streams or seepage slopes. The species is often found in association with Sphagnum species in acidic muck or sand, and in partially, but not fully shaded areas
Mohr's Barbara's buttons <i>Marshallia mohrii</i>	<i>T</i>	Moist sandy clay soils, along shale bed streams, road side right-of-ways, seasonally wet low swales around natural springs and seeps
Georgia Aster <i>Symphotrichum georgianum</i>	<i>C</i>	Upland prairie grassland communities to thinned oak pine woodlands. Most remaining populations survive adjacent to roads, utility rights of way, and other openings
Harperella <i>Ptilimnium nodosum</i>	<i>E</i>	Rocky or gravel shoals and margins of clear, swift-flowing stream sections; and edges of intermittent pineland ponds in the coastal plain

Key to codes on list:

- **E** – Endangered
- **T** - Threatened
- **BGEPA** - Bald & Golden Eagle
- **C** - Candidate Species
- **(P)** - Possible Occurrence

Chapter 3. Methodology

3.1 Methodology

The subject property was surveyed by McGehee Engineering Corp. (MEC) for the occurrence and potential for occurrence for species protected or listed by the U.S. Fish and Wildlife Service (USFWS), based on known habitat preferences and geographical distribution. The principal surveyor for this site was Biologist Wes Lamon of McGehee Engineering Corp.

The study site was surveyed by completely traversing the site in a zigzag pattern at approximately 20 meters intervals. Survey conditions are described in Table 3.1. Prior to performing the field reconnaissance, MEC performed a review of aerial photographs of the project site and a pedestrian survey was conducted by MEC biologist to identify vegetation communities and land uses, perform general habitat assessment for plants and animals; assess the potential for nesting or roosting activity by birds and/or bats within the general study area. Focused surveys for sensitive aquatic species were not performed; however, the potential for habitat for these species was assessed during the survey.

Table 3.1.1 Survey Conditions

Date: February 24th, 2014

Temperature (°F)	Wind (MPH)	Sky Cover %
60°	4-10	10%

As part of the field reconnaissance, MEC also conducted a delineation of potentially jurisdictional wetlands and waters of the U.S. as it relates to Section 404 of the Clean Water Act in accordance to the 1987 “*Corps of Engineers Wetlands Delineation Manual*”: Wetlands Research Program Technical Report Y-87-1 the April 2012 Version 2.0 Eastern Mountain & Piedmont COE Regional Supplement to the COE Wetland Delineation Manual.

Additional Data sources other than mentioned within the report include the following:

USGS Quadrangle Map	Brookwood, AL Quad Revised 1983, Burchfield Store, AL Quad Revised 1983, and Windham Springs, AL Quad Revised 1974
National Wetlands Inventory Map	Brookwood, AL NWI Quad developed 1981, Burchfield Store, AL NWI Quad developed 1981, and Windham Springs, AL NWI Quad developed 1981
SCS Soil Survey	Tuscaloosa County NRCS Web Survey
Aerial Photos	10-20-2012
Plant Database	United States Department of Agriculture / Natural Resources Conservation Services Web Database
FEMA Flood Map	Federal Emergency Mgt. DFIRM Database FIRMettes 01125C0400G, 01125C0250G, 01125C0225G Tuscaloosa County

Chapter 4. Environmental Setting

4.1 General Habitat Description

The proposed Jim Walter Resources – Mine No. 4 – Revision 39 – Area E-H project areas are located Brookwood community in Tuscaloosa County. The project is situated in a mining area. The project site of approximately 12 acres mostly consists of the following vegetation species:

Tree Stratum

Chestnut Oak (*Quercus prinus*)
Loblolly Pine (*Pinus taeda*)
Red Maple (*Acer rubrum*)
Sweetgum (*Liquidambar styraciflua*)
Virginia Pine (*Pinus virginiana*)
Yellow Poplar (*Liriodendron tulipifera*)

Sapling Stratum

American Beech (*Fagus grandifolia*)
Chestnut Oak (*Quercus prinus*)
Loblolly Pine (*Pinus taeda*)
Red Maple (*Acer rubrum*)
Sweetgum (*Liquidambar styraciflua*)
Virginia Pine (*Pinus virginiana*)

Shrub Stratum

Chestnut Oak (*Quercus prinus*)
Loblolly Pine (*Pinus taeda*)
Red Buckeye (*Aesculus pavia*)
Red Maple (*Acer rubrum*)
Sweetgum (*Liquidambar styraciflua*)
Virginia Pine (*Pinus virginiana*)
White Oak (*Quercus alba*)

Woody Vine Stratum

Japanese Honeysuckle (*Lonicera japonica*)
Muscadine (*Vitis rotundifolia*)
Greenbrier species

Herbaceous Stratum

Bluestem Broom Sedge (*Andropogon virginicus*)
Canadian Goldenrod (*Solidago altissima*)
Christmas fern (*Polystichum acrostichoides*)
Indian Grass (*Sorghastrum nutans*)
Meadow Fescue (*Festuca pratensis*)
Red Maple (*Acer rubrum*)
Tall Fescue (*Festuca arundinacea*)
Virginia Pine (*Pinus virginiana*)

The proposed project areas are previously and highly disturbed. Area E is previously impacted through recent timber removal and replanting of 3 to 5 year old Loblolly pine stands. Area F is a disturbed area for natural gas extraction. Area G is along an existing gas well road in an area that has had timber removal within the past 15 years. The vegetation has naturally revegetated with a dominance of Virginia pines. Area H is an existing gas well road.

There are no drains, wetlands, caves or open abandoned mines within these areas of interest.

The primary soil groups within the project area Montevallo-Nauvoo Association with steep slopes and Smithdale-Pikeville association with hilly slopes, both with well drained non-hydric soils. The soil identified in the field matched the USDA Soil data profile and in areas “B” & “C” therefore a more detailed description of these soils as well as the soil maps can be found in Appendix C.

Chapter 5. Habitat Study Results

5.1 Terrestrial and Terrestrial Habitat Species

- a. **Bald eagle** (*Haliaeetus leucocephalus*) - There was no potential nesting habitat for the Bald Eagles. There are no large open bodies of water with large trees suitable for nesting habitat.
- b. **Red-cockaded woodpecker** (*Picoides borealis*) -- There were no isolated mature pines of the age and required size that would harbor the Red-cockaded woodpecker on or adjacent to the project site.
- c. **Wood stork** (*Mycteria americana*) - There was no potential nesting habitat for the Wood stork. There were no large trees near open water on or near this site.
- d. **Indiana Bat** (*Myotis sodalis*) – No habitat exists in the proposed project area. Preferred roost tree species of the appropriate size were not located on the project sites. These areas are disturbed, existing gas well areas, or along well traveled gas well roads. Also, there are no limestone caves or mines with stable temperatures in the project review area or immediately adjacent.
- e. **Gray Bat** (*Myotis grisescens*) – Habitat for this species does not exist. There are no caves on or adjacent to this project site.
- f. **Mitchell’s Satyr Butterfly** (*Neonympha mitchellii mitchellii*) –There are no fens--low acid, mainly groundwater fed, highly diversified peat wetlands.
- g. **Harperella** (*Ptilimnium nodosum*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- h. **White fringeless orchid** (*Platanthera integrilabia*) – No habitat exists on the proposed boundary. There are no flat boggy areas on this site.
- i. **Mohr’s Barbara’s buttons** (*Marshallia mohrii*) - No habitat exists in on the proposed project area. There are no seeps in the proposed area.
- j. **Georgia aster** (*Symphotrichum georgianum*) – No habitat exists within boundary. There are no open prairie locations on the project site. Roadside rights of ways and grassy parking areas are the possible habitat, but they are highly disturbed. Therefore, this habitat can be excluded.

5.1.1 Summary

No habitat was found for any of the above listed species within or adjacent to the revision R-39 Area E-H boundaries. No evidence was found or observed for the presence or possible presence of these listed species.

5.2 Aquatic and Aquatic Habitat Species

- a. **Black Warrior waterdog** (*Necturus alabamensis*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- b. **Fine-lined pocketbook mussel** (*Hamiota (=Lampsilis) altilis*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- c. **Flattened musk turtle** (*Sternotherus depressus*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- d. **Ovate clubshell mussel** (*Pleurobema perovatum*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- e. **Southern clubshell mussel** (*Pleurobema decisum*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- f. **Orange-nacre mucket mussel** (*Hamiota (=Lampsilis) perovalis*) -- No habitat exists on the proposed boundary. There are no drains within the proposed boundaries. Also this species is not known below Smith Lake.
- g. **Alabama moccasinshell mussel** (*Medionidus acutissimus*) -- No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- h. **Alabama Heelsplitter mussel** (*Potamilus inflatus*) -- No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- i. **Warrior pigtoe mussel** (*Pleurobema rubellum*) -- No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- j. **Dark pigtoe mussel** (*Pleurobema perovatum*) -- No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- k. **Triangular kidneyshell mussel** (*Ptychobranthus greenii*) – No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.
- l. **Upland combshell mussel** (*Epioblasma metastriata*) -- No habitat exists on the proposed boundary. There are no drains within the proposed boundaries.

5.2.1 Summary

There was no habitat found for the above listed, threatened and endangered species. No evidence was found or observed for the presence or possible presence of these listed species.

5.3 Wetlands and Streams

5.3.1 Wetlands

The project areas were evaluated according to the 1987 “*Corps of Engineers Wetlands Delineation Manual*” the April 2012 Version 2.0 Eastern Mountain & Piedmont COE Regional Supplement to the COE Wetland Delineation Manual.

No wetlands were identified on the project site.

5.3.2 Streams

The project area was evaluated for jurisdictional waters; there were no streams located within the R-39 Area E-H boundaries. Streams are identified using the North Carolina Method of Intermittent and Perennial Streams.

Chapter 6. References

- Brinson, M.M. 1993. *A Hydrogeomorphic Classification for Wetlands*. Technical Report WRPDE-4. US Army Engineers Waterways Experiment Station, Vicksburg, MS.
- Cowardin, L.M., V. Carter, F.C. Golet and E.T. Laroe. 1979. *Classification of Wetlands and Deep Water Habitats of the United States*. U.S. Fish and Wildlife Service. FWS/OBS 79/31.
- Environmental Laboratory 1987. *“Corps of Engineers Wetlands Delineation Manual”*: Wetlands Research Program Technical Report Y-87-1 (Online Edition) 1987. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.
- Haag, Wendell R. 2004. *Alabama Wildlife*. Volume 2. Imperiled aquatic mollusks and fishes. The University of Alabama Press, Tuscaloosa, Alabama.
- “National List of Plant Species That Occur In Wetlands: Southeast (Region 2): U.S.
Department of the Interior – Fish & Wildlife Service Biological Report 88(26.2) May 1988
- U.S. Fish and Wildlife Service, 1980. *Habitat Evaluation Procedures*. Division Ecological Services: Washington, D.C.
- U.S. Fish and Wildlife Services. April 2014. *Endangered Species List – List of Species by County for Tuscaloosa County Alabama*.

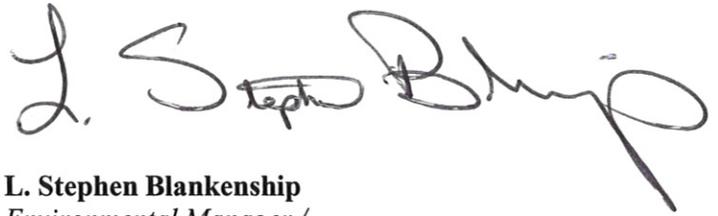
Chapter 7. Signatures of Preparers

Prepared by:



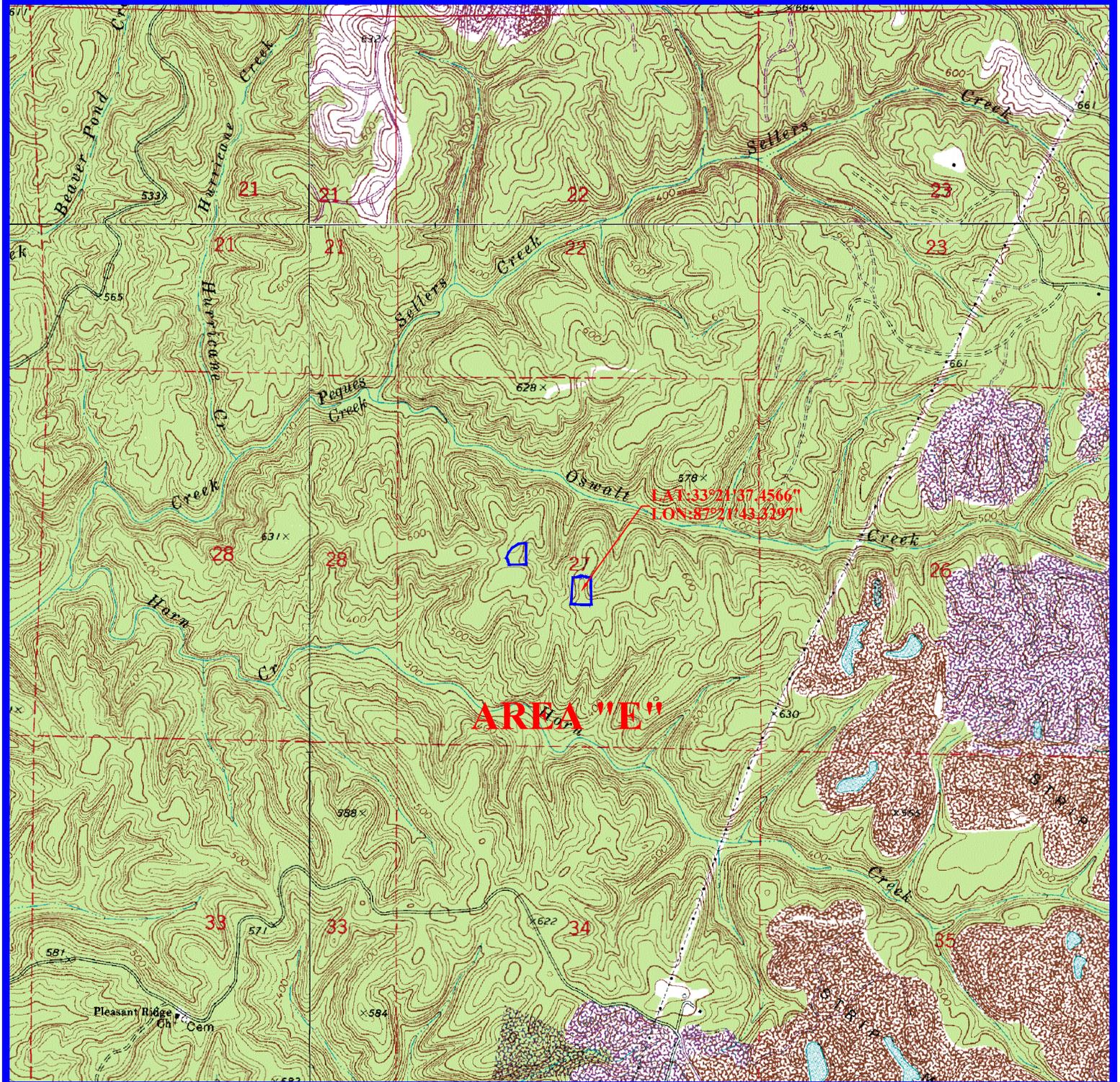
Wes Lamon
Biologist

Reviewed by:



L. Stephen Blankenship
*Environmental Manager /
Wetland Specialist*

Appendix A — Project Area Map



SCALE: 1" = 2000'
February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 4 ACRES TOTAL)



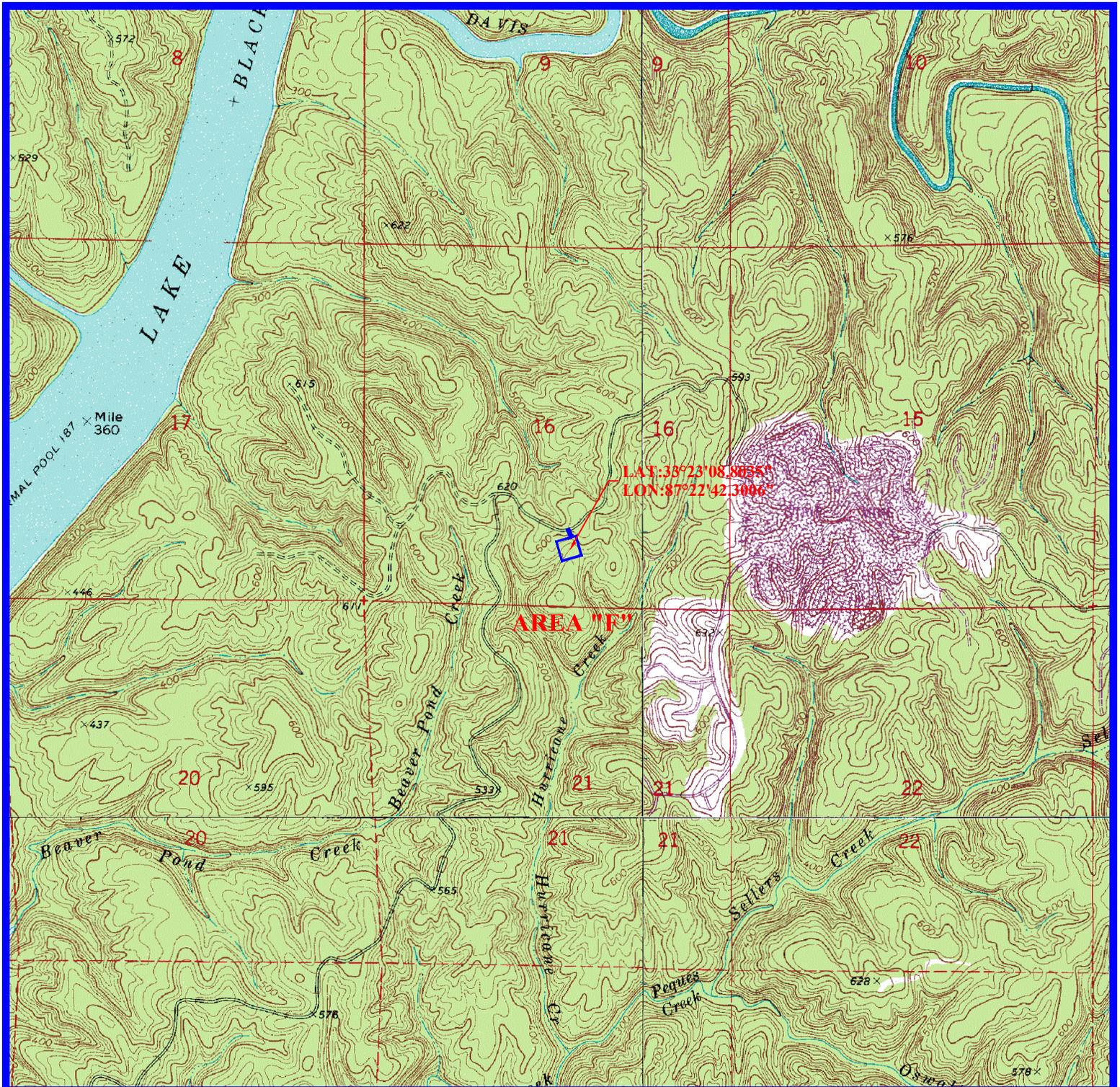
PROJECT AREA MAP

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE BROOKWOOD, AL. USGS QUAD.

MEC
mcgehee engineering corp
post office box 3431
jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

 REVISION R-39 AREA "E" BOUNDARY

Latitude: 33°21'37" N
Longitude: 87°21'43" W



SCALE: 1" = 2000'
February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 2 ACRES TOTAL)



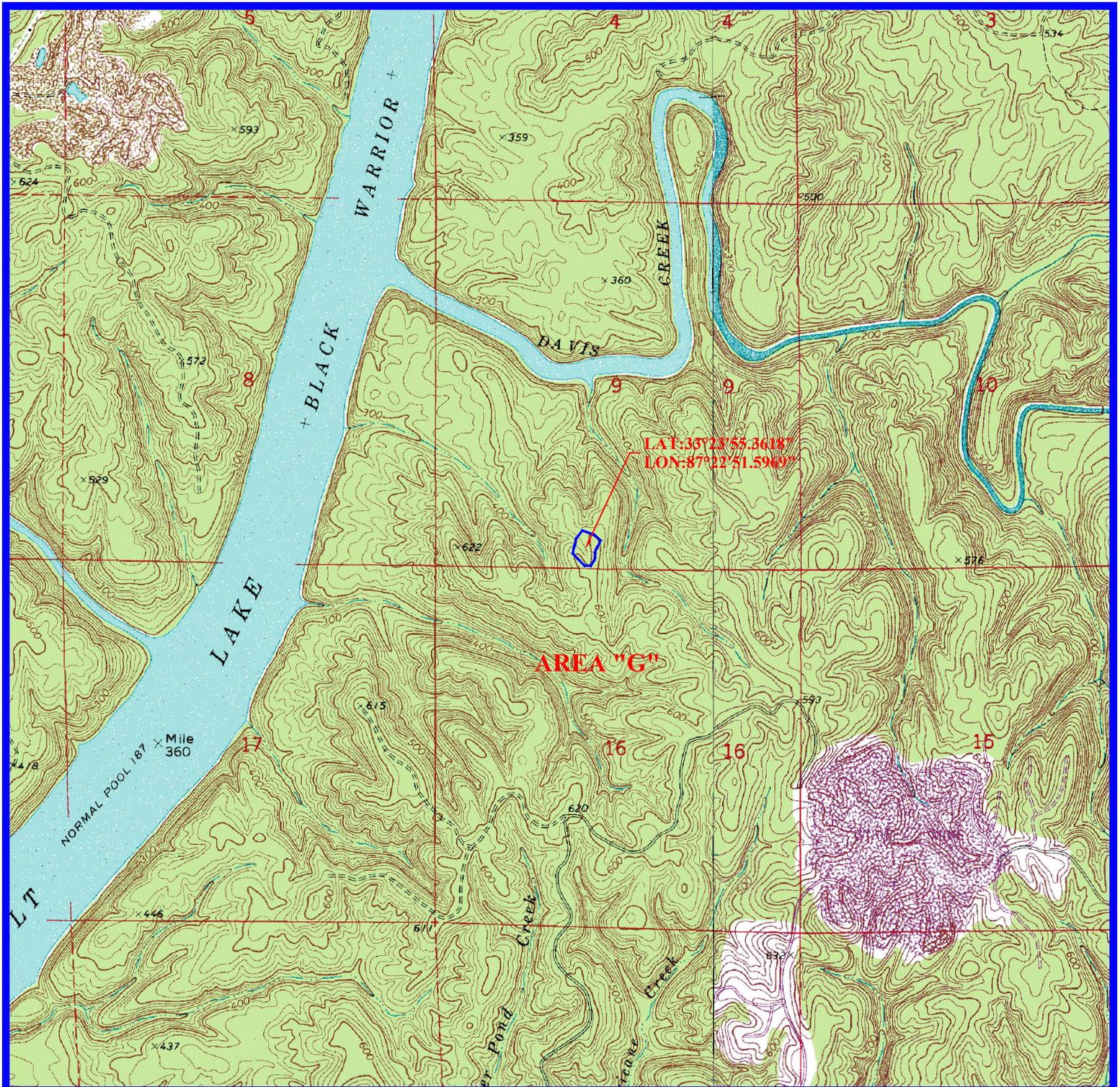
PROJECT AREA MAP

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WINDHAM SPRINGS, AL. USGS QUAD.

MEC
mcgehee engineering corp
post office box 3431
jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org

 REVISION R-39 AREA "F" BOUNDARY

Latitude: 33°23'09" N
Longitude: 87°22'42" W



SCALE: 1" = 2000'
February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 3 ACRES TOTAL)



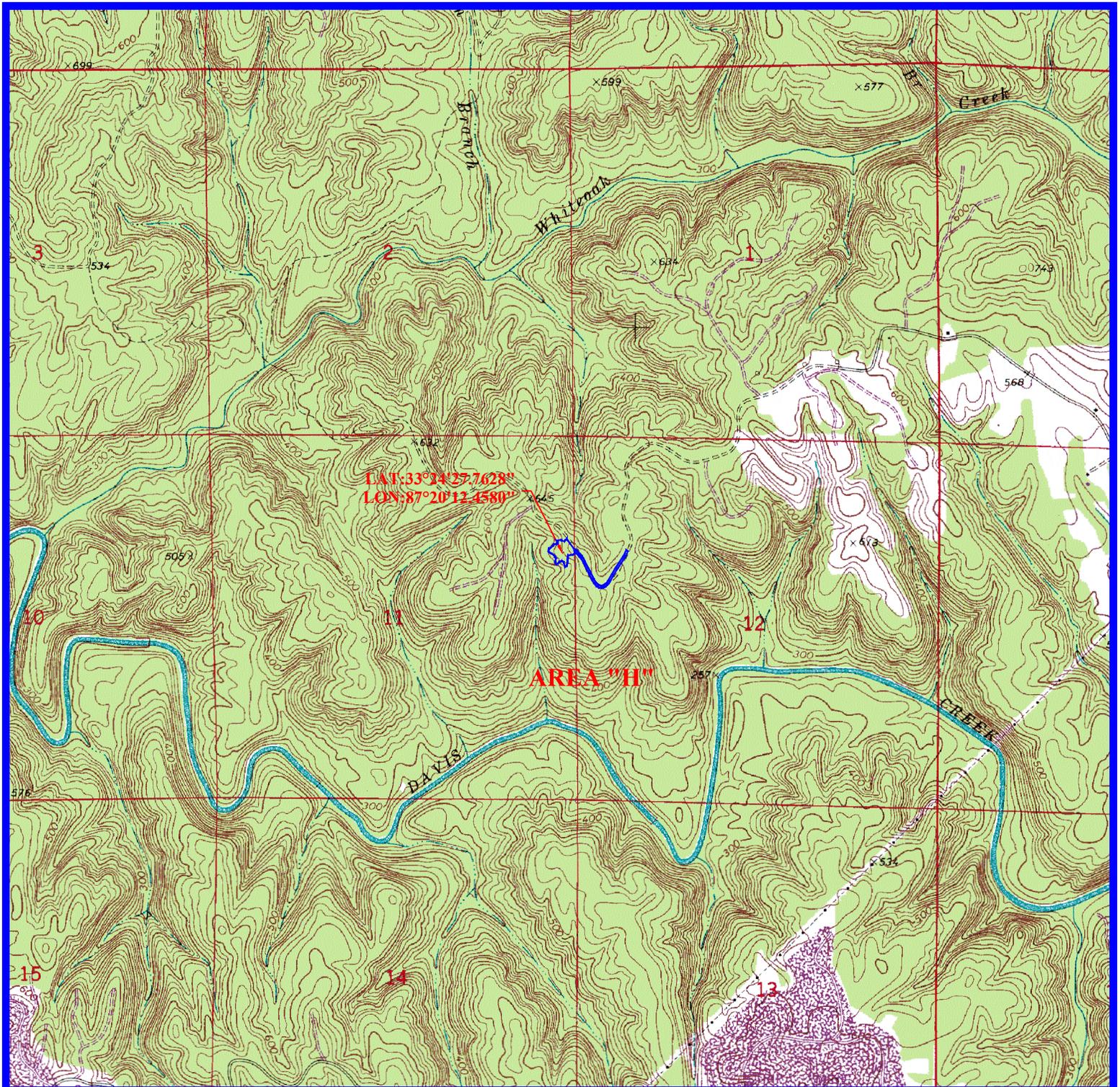
PROJECT AREA MAP

SECTION 16, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WINDHAM SPRINGS, AL. USGS QUAD.



 REVISION R-39 AREA "G" BOUNDARY

Latitude: 33°23'55" N
Longitude: 87°22'52" W



LAT: 33°34'27.7628"
 LON: 87°20'12.4580"

AREA "H"

SCALE: 1" = 2000'
 February 12th, 2014

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
 (APPROXIMATELY 3 ACRES TOTAL)



PROJECT AREA MAP

SECTIONS 11 & 12, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE BURCHFIELD, AL. USGS QUAD.



 REVISION R-39 AREA "H" BOUNDARY

Latitude: 33°24'28" N
 Longitude: 87°20'12" W

Appendix B — Photographic Log

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area E</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2831</i>		
Point No.	<i>001</i>		
Description:			
This is an existing gas well pad at point 001.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Pinus taeda</i> • <i>Rubus betulifolius</i> • <i>Rhus copallinum</i> • <i>Andropogon virginicus</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area E</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2841</i>		
Point No.	<i>001</i>		
Description:			
This is a view of planted Loblolly pines and an existing powerline at point 001.			
Dominant Vegetation:			
Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area E</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2843</i>		
Point No.	<i>002</i>		
Description: This is a view of an existing natural gas well road at point 002.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Pinus taeda</i> • <i>Rubus betulifolius</i> • <i>Rhus copallinum</i> • <i>Andropogon virginicus</i> • <i>Panicum capillare</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area E</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2846</i>		
Point No.	<i>002</i>		
Description: This is a view of the replanted pines at point 002.			
Dominant Vegetation:			
Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area E</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2851</i>		
Point No.	<i>003</i>		
Description: This is a view of the replanted pines at point 003.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Pinus taeda</i> • <i>Rubus betulifolius</i> • <i>Rhus copallinum</i> • <i>Andropogon virginicus</i> • <i>Panicum capillare</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area E</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2857</i>		
Point No.	<i>003</i>		
Description: This is a view of the replanted pines other vegetation at point 003.			
Dominant Vegetation:			
Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area F</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2861</i>		
Point No.	<i>004</i>		
Description: This is a view of the constructed gas well pad at point 004.			
Dominant Vegetation: <ul style="list-style-type: none"> • <i>Pinus taeda</i> • <i>Panicum capillare</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area F</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2863</i>		
Point No.	<i>004</i>		
Description: This is a view of the existing road at point 004.			
Dominant Vegetation: Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area G</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2887</i>		
Point No.	<i>005</i>		
Description:			
This is a view of the upland area at point 005.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Pinus taeda</i> • <i>Quercus prinus</i> • <i>P. virginiana</i> • <i>Andropogon virginicus</i> • <i>Panicum capillare</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area G</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2890</i>		
Point No.	<i>005</i>		
Description:			
This is a view of the existing natural gas well road at point 005.			
Dominant Vegetation:			
Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area G</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2892</i>		
Point No.	<i>006</i>		
Description: This is a view of the upland area at point 006.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Quercus prinus</i> • <i>Liriodendron tulipifera</i> • <i>Liquidambar styraciflua</i> • <i>Acer rubrum</i> • <i>Vitis rotundifolia</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area G</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2897</i>		
Point No.	<i>006</i>		
Description: This is another view of the upland area at point 006.			
Dominant Vegetation:			
Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2898</i>		
Point No.	<i>007</i>		
Description: This is a view of the existing natural gas road at point 007.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Pinus virginiana</i> • <i>Pinus taeda</i> • <i>Liquidambar styraciflua</i> • <i>Quercus prinus</i> • <i>Andropogon virginicus</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2900</i>		
Point No.	<i>007</i>		
Description: This is a view at point 007 looking away from the existing roadbed.			
Dominant Vegetation:			
Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2903</i>		
Point No.	<i>008</i>		
Description: This is a view of the existing natural gas road at point 008.			
Dominant Vegetation: <ul style="list-style-type: none"> • <i>Pinus virginiana</i> • <i>Andropogon virginicus</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2905</i>		
Point No.	<i>008</i>		
Description: This is a view of the intersection of the existing gas well road at point 008.			
Dominant Vegetation: Same as above.			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2906</i>		
Point No.	<i>009</i>		
Description: This is a view of the existing gas well road at point 009.			
Dominant Vegetation:			
<ul style="list-style-type: none"> • <i>Pinus virginiana</i> • <i>Andropogon virginicus</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2907</i>		
Point No.	<i>009</i>		
Description: This is another view of the existing gas well road at point 009.			
Dominant Vegetation:			
Same as above.			

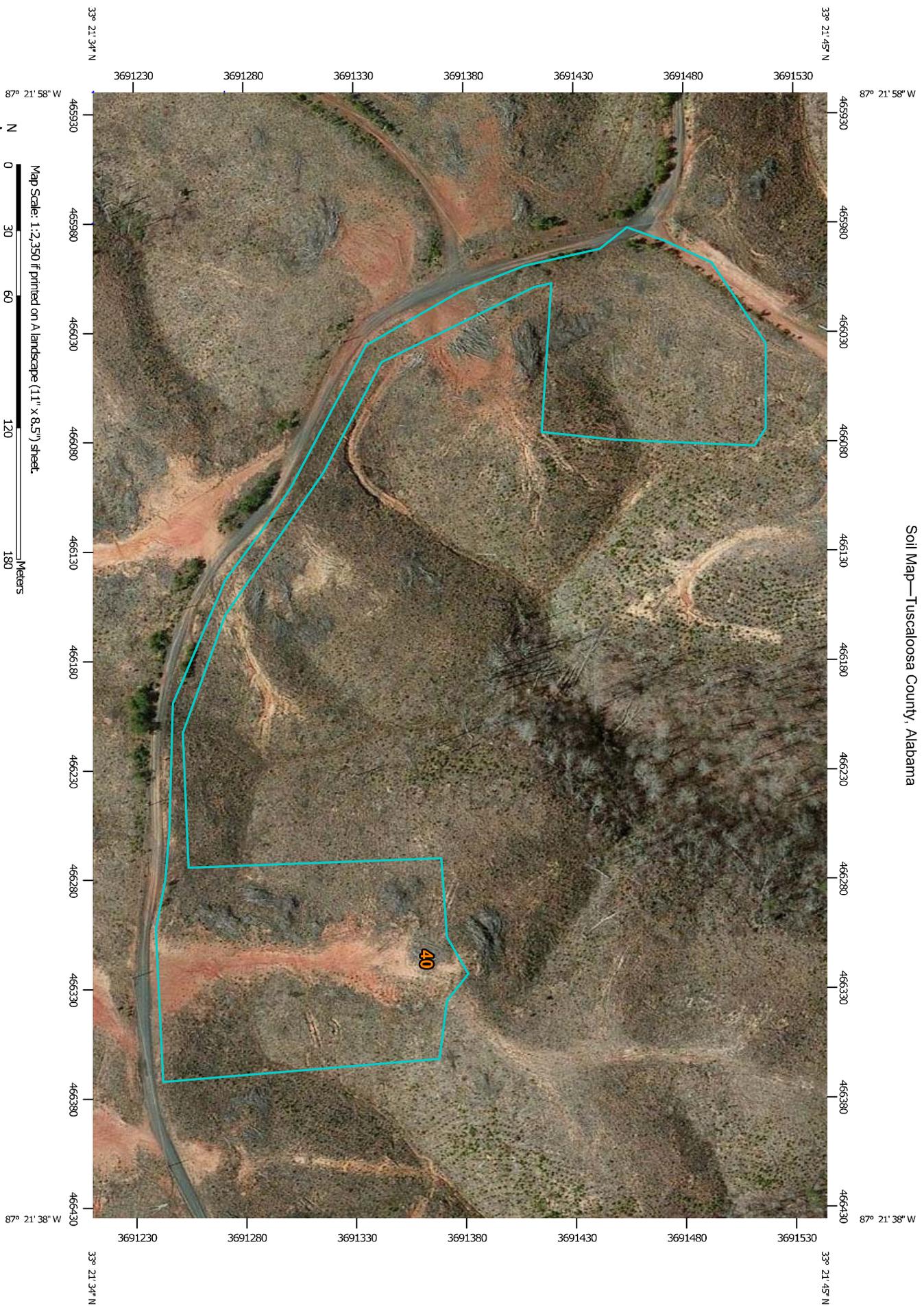
McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2911</i>		
Point No.	<i>010</i>		
Description: This is a view of the upland area beside the gas well pad development at point 010.			
Dominant Vegetation: <ul style="list-style-type: none"> • <i>Pinus taeda</i> • <i>Pinus virginiana</i> • <i>Liriodendron tulipifera</i> 			

McGehee Engineering		Photographic Log	
Client Name: <i>Jim Walter Resources, Inc.</i>		Site Location:	<i>Mine #4 – Revision R-39 – Area H</i>
Date:	<i>02-24-14</i>		
Photo No.	<i>100_2909</i>		
Point No.	<i>010</i>		
Description: This is a view at point 010.			
Dominant Vegetation: Same as above.			

Appendix C — Photo Log Point Location Map

Appendix D — Soil Map

Soil Map—Tuscaloosa County, Alabama



Map Scale: 1:2,350 if printed on A landscape (11" x 8.5") sheet.
0 30 60 120 Meters
0 100 200 400 600 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

	Area of Interest (AOI)		Spot Area
	Area of Interest (AOI)		Story Spot
	Soils		Very Story Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tuscaloosa County, Alabama
 Survey Area Data: Version 7, Dec 19, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

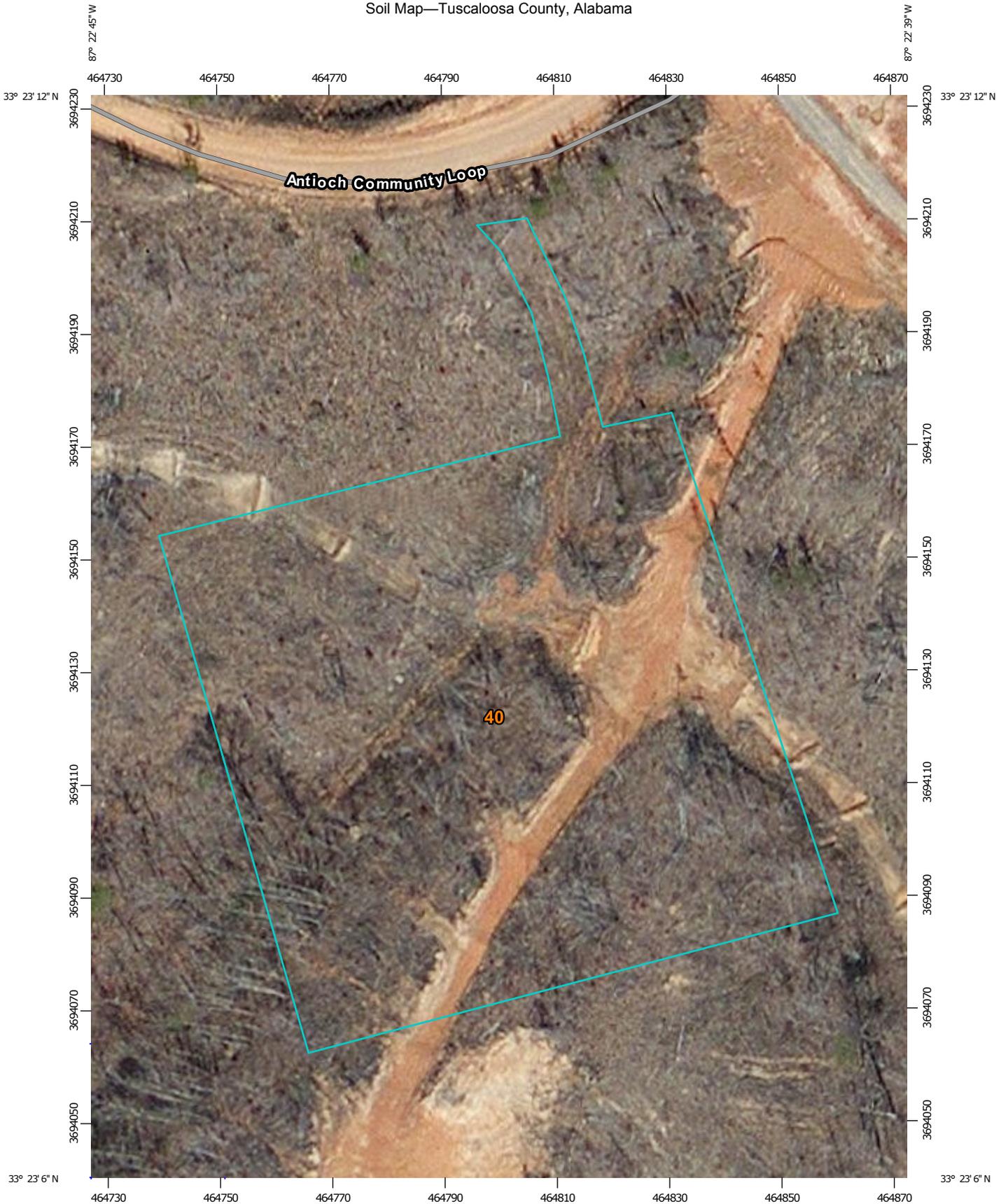
Date(s) aerial images were photographed: Feb 13, 2011—Mar 16, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

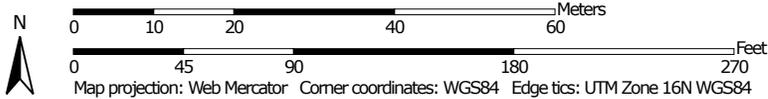
Map Unit Legend

Tuscaloosa County, Alabama (AL125)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
40	Smithdale-Pikeville association, hilly	5.9	100.0%
Totals for Area of Interest		5.9	100.0%

Soil Map—Tuscaloosa County, Alabama



Map Scale: 1:937 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tuscaloosa County, Alabama
 Survey Area Data: Version 7, Dec 19, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 13, 2011—Mar 16, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

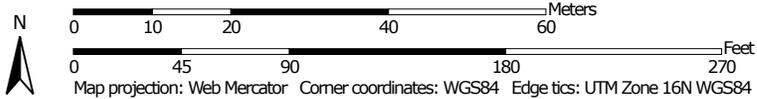
Map Unit Legend

Tuscaloosa County, Alabama (AL125)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
40	Smithdale-Pikeville association, hilly	2.3	100.0%
Totals for Area of Interest		2.3	100.0%

Soil Map—Tuscaloosa County, Alabama



Map Scale: 1:955 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tuscaloosa County, Alabama
 Survey Area Data: Version 7, Dec 19, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 13, 2011—Mar 16, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Tuscaloosa County, Alabama (AL125)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
22	Montevallo-Nauvoo association, steep	3.3	100.0%
Totals for Area of Interest		3.3	100.0%

Soil Map—Tuscaloosa County, Alabama



Map Scale: 1:1,790 if printed on A landscape (11" x 8.5") sheet.



0 25 50 100 150 Meters

0 50 100 200 300 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/13/2014
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



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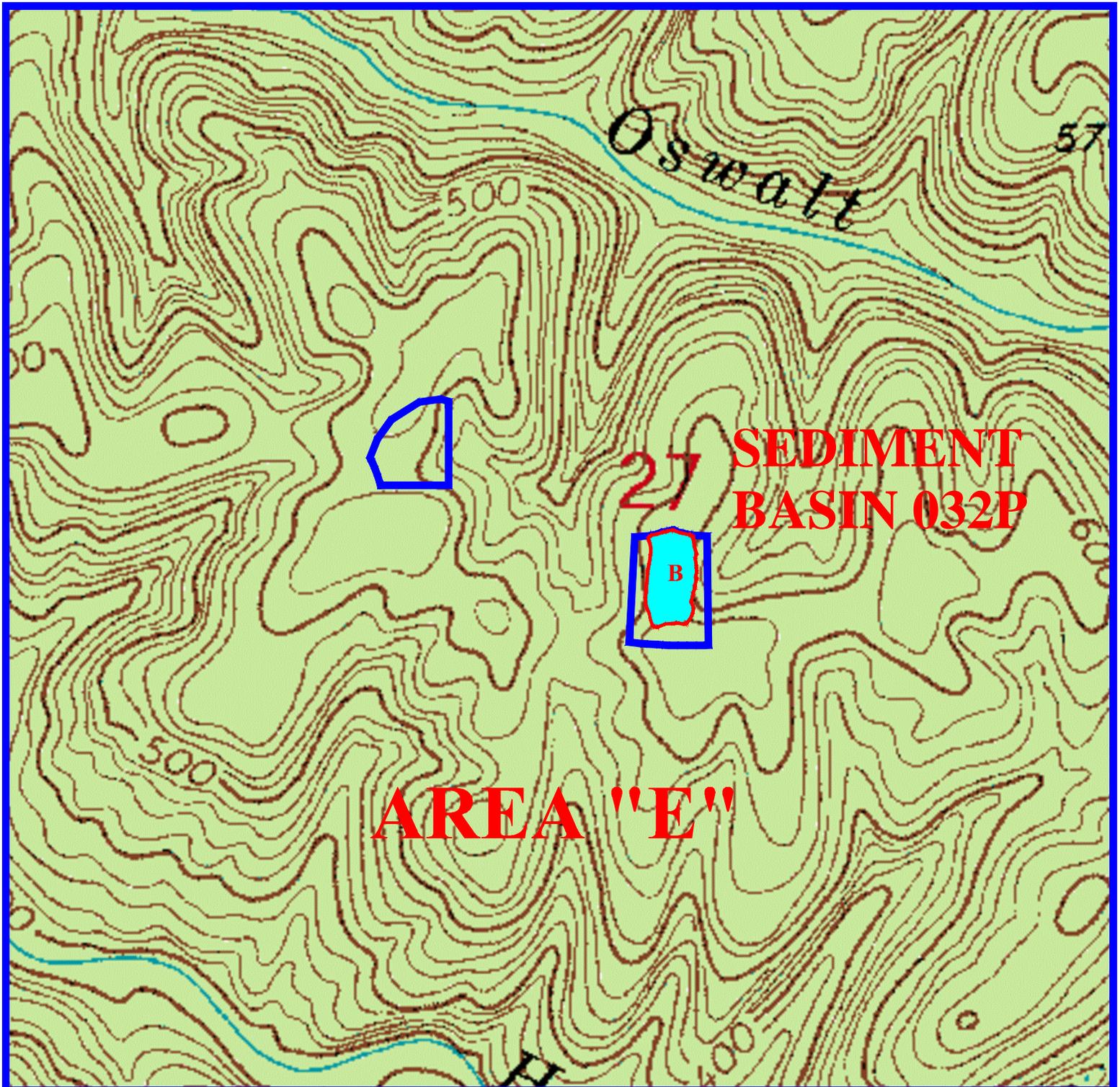
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Tuscaloosa County, Alabama (AL125)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
22	Montevallo-Nauvoo association, steep	2.1	100.0%
Totals for Area of Interest		2.1	100.0%

Attachment “D”

Basin Location Maps



SCALE: 1" = 500'
 May 9th, 2014
 Map Size: 8.5"x11"

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
 (APPROXIMATELY 3 ACRES TOTAL)



BASIN LOCATION MAP

SECTION 27, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE BROOKWOOD, AL USGS QUAD (1983)



-  REVISION R-39 AREA "G" BOUNDARY
-  SEDIMENT BASIN

Latitude: 33°23'55" N
 Longitude: 87°22'52" W

**SEDIMENT
BASIN 033P**



AREA "G"

SCALE: 1" = 500'
May 9th, 2014
Map Size: 8.5"x11"

JIM WALTER RESOURCES, INC.
MINE NO. 4 -- REVISION R-39
(APPROXIMATELY 3 ACRES TOTAL)



BASIN LOCATION MAP

SECTION 9, TOWNSHIP 19 SOUTH, RANGE 8 WEST
ALL IN TUSCALOOSA COUNTY, ALABAMA
AS FOUND ON THE WINDHAM SPRINGS, AL USGS QUAD (1974)

MEC
mcgehee engineering corp
post office box 3431
jasper, alabama 35502-3431
telephone: (205) 221-0686 fax: 221-7721
email: staff@mcgehee.org



REVISION R-39 AREA "G" BOUNDARY



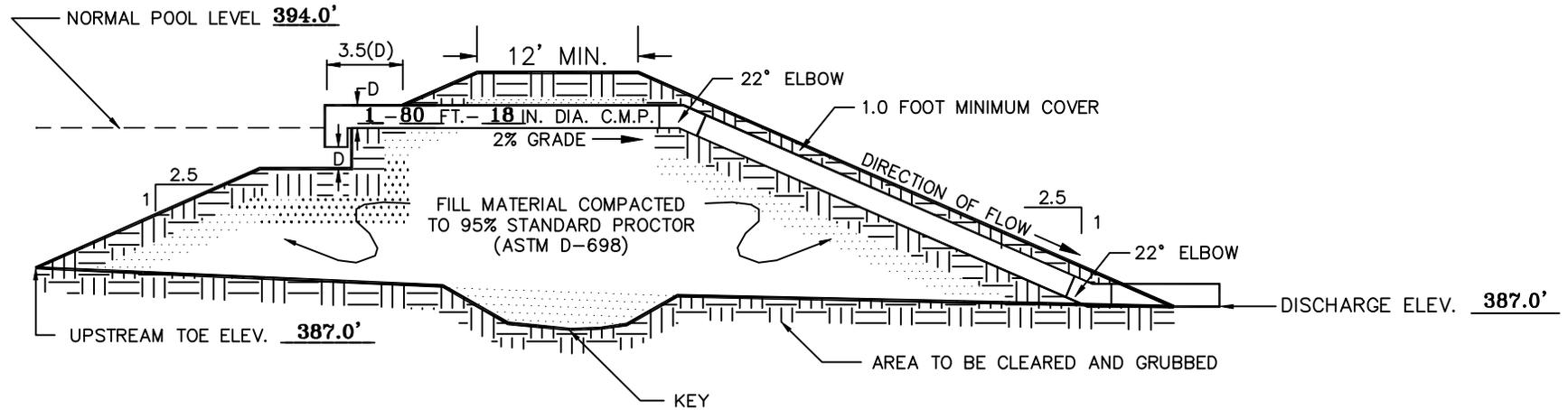
SEDIMENT BASIN

Latitude: 33°23'55" N
Longitude: 87°22'52" W

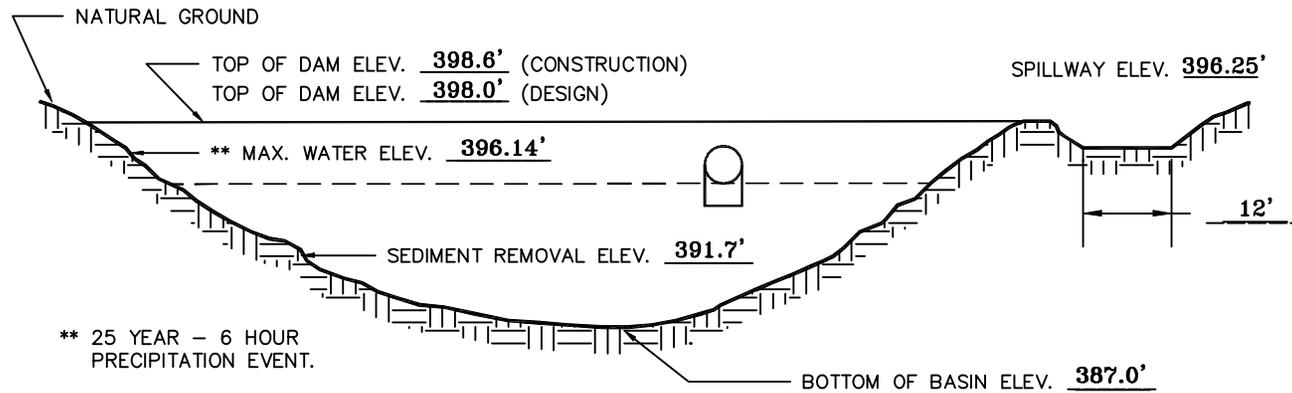
Attachment “E”

Sediment Basin Typical Cross Section

TYPICAL EMBANKMENT CROSS-SECTION



TYPICAL IMPOUNDMENT PROFILE



Attachment “F”

Sediment Basin Typical Plan View



PLAN VIEW OF EMBANKMENT POND TYPICAL DRAWING

