

Exhibit 22 - Environmental Assessment of Wetlands and Endangered Species

ENVIRONMENTAL ASSESSMENT OF WETLANDS AND THREATENED AND ENDANGERED SPECIES REPORT

FOR THE

LASALLE ECONOMIC DEVELOPMENT DISTRICT (LEDD) JENA INDUSTRIAL SITE

Prepared for:

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Attachment 2: Site Photographs

Attachment 3: LDWF data base search letter

1. INTRODUCTION

This report presents the findings of an Environmental Assessment (EA) conducted on behalf of Meyer, Meyer, LaCroix & Hixson for the Town of Jena, Louisiana. Biome Consulting Group, LLC (Biome) has prepared this EA in conformance with US Army Corps of Engineers (CE), Federal Fish and Wildlife Service (FWS) and Louisiana Department of Wildlife and Fisheries (LDWF) standards, practices and procedures as outlined in their most current guidelines. The Town of Jena is seeking certification in the Louisiana Economic Development (LED) program for an approximately 28 acre tract of land.

It is anticipated that the 28.67 acre tract of land will be improved and used for industrial purposes. The findings in this report satisfy the requisite LED certification guidelines as listed under Section L of the LED application.

1.1 Objectives

The specific objectives of this EA are to:

- Conduct a jurisdictional determination in accordance with CE Section 404 guidelines;
- Field delineate jurisdictional waters and wetlands;
- GPS locate jurisdictional areas and prepare representative graphics;
- Conduct field review of the Site for the presence of listed species;
- List federal and state threatened and endangered (TE) plant and animal species with known records of occurrence in the project vicinity;
- Identify their habitat requirements and describe the distributions and habitat use of TE species presently occurring in the project vicinity.

1.2 Study Area

The study area, herein known as “the Site” consists of approximately 28.67 acres of land. It is owned by the Town of Jena and geographically illustrated in the attached figures of this report. The Site is centrally located within La Salle Parish and inside the town limits of Jena. It lies within Sections 15 and 16, Township 8-North, Range 3-East and is physically centered near 31°40'1.35"N latitude and 92°9'43.93."W longitude (NAD 1983 UTM Zone 15N). The Site is bound to the north by State Route 8 and active commercial development, to the east by Hanger Road, and Jena Airport, and to the south and west by undeveloped timberland and an active well site (**Figures 1&2**). It is irregularly shaped; however, the Site boundary was provided to Biome via an electronic GIS shapefile from the project engineer at MMLH. This shapefile was uploaded to a handheld Trimble GPS unit for ground truthing the Site’s perimeter.

Access can be gained via State Route 8 to the north or Hanger Road to the east. The entire perimeter is free of fences or obstructions that would otherwise limit access. A six foot chain link fence provides security around the active commercial activity to the north. The fence is protected from underbrush by a well maintained cleared buffer between the fence and the study area. Several well-traveled trails bisects the Site's pine plantation and allow easy passage through the dense underbrush.

Pine silviculture and hydro-carbon production characterize the rural setting of the Site and surrounding area. Historically, the Site has been primarily used for pine silviculture activities dating back to the 1950s. Hydro-carbon exploration and drilling were conducted on Site as evidenced by well pads viewed on historic aerial photography and confirmed in the field. An active oil derrick is located adjacent to the Site's boundary. The Site is unimproved and comprised of a tight stand of approximately 20 year old of Loblolly pine. A dense sub-layer of yaupon, popcorn, sweetgum, red oak and beautyberry grows between the pine rows. All of these small woody species are intertwined by greenbrier and honey suckle producing a nearly closed sub-canopy. Where the groundcover is not lost to shading and leaf litter, partridgeberry, wild geranium, euphorbia, broom sedge and Carolina jasmine are found.

The Site is located within the Little River Watershed and provides stormwater runoff to the headwaters of Muddy Prong, a first order ephemeral stream that conveys water into Trout Creek. Approximately 11 miles to the southwest, Trout Creek reaches the Little River confluence between White Sulphur Springs and Fishville, Louisiana.

Stormwater runoff is generally intercepted by the small drainage channels that dissect the upland ridges and flow in a southwesterly direction. The elevation on the site ranges between 192 feet on the west central boundary and 214 feet on the east boundary (**Figures 4 & 5**). The vast majority of the site is converted to planted pine plantation; however, there is what appears to be a relic oil pad and overgrown access road in the center of the site. A possible relic pad to the north near State Route 8 was also discovered on historic aerals. Confirmation of this pad was not confirmed due the overgrown nature of the vegetation. Several shallow excavated areas were identified in the field and presumed to be anthropogenic and related to hydrocarbon production. Active oil well pads and a pipeline are located adjacent to the southeast corner of the site.

2. STUDY METHODS

Listed species and their habitats which are known to occur in La Salle Parish (**Table 1**) and which are protected under Louisiana Title 56 and the United States Endangered Species Act (ESA) of 1973 (7 U.S.C. §1531 et seq.) were carefully investigated. Although species with a recorded occurrence in La Salle Parish were given special attention, all listed species were considered

during the performance of the field reconnaissance. Threatened species represent plants and animals that are likely to become endangered within the foreseeable future throughout all, or a significant portion of their range. Endangered species are considered those plants and animals that have become so rare that they are in danger of becoming extinct.

Jurisdictional wetlands and other waters determinations were conducted in accordance with the Regional Supplement to the *Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Version 2.0). Jurisdictional areas were field delineated with glow pink survey flagging tape. Each flagged point was alpha-numerically labeled and subsequently located using a handheld, Trimble Geo 7x GPS unit. Data collected during the field survey were imported into an ArcMap GIS software for the generation of report graphics (**Figure 3**). Routine CE wetland data sheets that establish an analytical basis for the upland and wetland determinations were completed in the field and finalized in *Wetforms*® digital format. These data are provided in **Attachment 1**. Representative site photographs which depict the visual conditions at the time of the site survey are displayed in **Attachment 2**.

2.1 Review of Existing Information

Species were investigated according to the study approaches recommended by state and federal agencies and the latest, most up to date literature. Tabular listings of TE species with known records of occurrence in the study area were reviewed in the following government databases:

- Louisiana Natural Heritage Program
- Louisiana Department of Wildlife and Fisheries
- Louisiana Department of Natural Resources SONRIS
- Nature Serve Explorer
- US Fish and Wildlife Service (FWS)
- United States Department of Agriculture (USDA) Natural Conservation Resources Conservation Service: Plants Database
- USGS National Wetland Inventory

Other key sources of information and data used in performing this study included but were not limited to the following:

- LSU Atlas: The Louisiana Statewide GIS database
- USDA historic aerials
- USDA Natural Resource Conservation Service Soil data
- US Geographical Survey (USGS) topographic quadrangles
- USDA National Elevation Data, 2 meter or better

- Digital Elevation Models
- Historic Aerials
- Noni Map View

2.2 Listed Species Field Reconnaissance Survey

This report provides specific information within the project boundary pertaining to its natural communities, and its capacity to support listed species known to occur in La Salle Parish. The field reconnaissance review was conducted during the month of December 2015. Pedestrian transects at varying intervals according to species type and habitat makeup were utilized to adequately cover the Site. Data collected during the field reconnaissance phase of the study was documented using a handheld Trimble Geo 7x, sub-meter accurate GPS unit. These data were compiled and expressed in the report graphics.

Field notes were recorded and digital photographs of the general nature of the Site, along with any observed species were documented. A series of color, black & white and infrared aerial photographs and raster data ranging from 1952 to 2014 were carefully studied prior to conducting the field survey. USGS topographic quadrangles were also utilized to identify representative elevation conditions and to identify land use improvements in the general vicinity. Remote sensing techniques were employed to evaluate potential habitat or vegetative community types that would be indicative of adequate or sustaining habitat for listed species. Identifying occurrences of T&E aquatic species also considered data base queries of previously recorded terrestrial and aquatic surveys by the FWS and other sources.

3. PROTECTED SPECIES

A request to LDWF staff regarding a query of the state database relative to known occurrences of listed species or species of special concern in La Salle Parish was sent on January 5, 2016.

Attachment 3 is the response letter from the LDWF. The letter states, "After careful review of our database, no impacts to rare, threatened, or endangered species of critical habitats within Louisiana's boundary are anticipated for the proposed project." This statement is consistent with our findings that the site does not contain habitat that supports protected animal species.

3.1 Plant Species

The issue of listed plants is treated slightly differently than animals with prime interest being afforded to federally listed species. Under this heading, there is only one species listed by either the state or FWS. This species is the Earth-fruit (*Geocarpon minimum*) and is associated with bare soil where competition is very limited. The Earth-fruit is most often seen in the margin of bare soil "slicks" in saline prairies. Neither the Earth-fruit or its' preferred habitat are located on the project site; therefore, the development of the Site will "Not Effect" this species.

3.2 Aquatic Species

There are no species listed as threatened or endangered by the state or FWS under this category. Furthermore, none of the rare species in this category would be expected to reside on the Site.

3.3 Wildlife Species

3.3.1 Federally Protected Species

Red-cockaded woodpecker (*Picoides borealis*) – Listed as Endangered by both state and FWS. This species is a relatively small woodpecker with prominent white bars across its back. The crown, nape and back of the neck are black and there is a black line from the bill down to the side of the neck. The cheeks, side of the neck and throat are white and there is a white eyebrow line. The tail is black with white on the outer features and the underside is white with black streaks on the flanks. The males have an inconspicuous red streak (cockade) on each side of the crown. This species is found in longleaf pine forests and in mixed pine-upland hardwood forest with little or no hardwood mid-story. Good habitat consists of pine stands with trees 22.9 cm and larger in diameter at breast height. Pine stands with or without adequate management do not occur near the site. Therefore habitat is not present on the Site and development activities will “Not Effect” the Red-Cockaded woodpecker.

Louisiana Pine Snake (*Pituophis ruthveni*) – A candidate for listing by the FWS and not listed by the state. This snake is a pale tan with a row of large black or brown blotches down the back and a smaller series on either side. The underside is whitish with obscure brown spotting. The tip of the snout is point and the snake’s scales are keeled and in 27 to 33 rows. This species is typical of sandy, well drained soils, often associated with open pine forests and xeric sandhills with a well-developed grassy understory. This species is not protected by either state or federal law at this time. Furthermore, suitable habitat does not exist on Site to support this species. Development activities on the site will “Not Effect” the Louisiana pine snake.

3.3.2 State Protected Species

Bald Eagle (*Haliaeetus leucocephalus*) – The Bald eagle (*Haliaeetus leucocephalus*) is protected only by the state since the FWS delisted this species from the Endangered Species Act in 2007. The Bald eagle is however, afforded protection under the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act and the Lacey Act. Conifer species old and tall enough to support an eagle nest do not occur on or nearby the Site. Additionally a review of the project area did not reveal any signs of active or inactive nesting sites. Development activities on the site will “Not Effect” the Bald eagle.

Alligator Snapping Turtle (*Macrolemys temminkii*) – Listed only by the state as Restricted Harvest. This turtle has webbed toes, an upper jaw with a strongly hooked beak and eyes on the side of the head. There are three dark brown peaked heels on the carapace and five pairs of plastral scutes. The plastron is small, narrow and cross-shaped with a long narrow bridge. This species is typically found in freshwater lakes and bayous, but can also be found in coastal marshes. The site does not provide habitat to support this species. Development activities on the Site will “Not Effect” the Alligator snapping turtle.

Southern Redback Salamander (*Plethodon serratus*) – Listed only by the state as Prohibited from possession or harvest. The Southern redback salamander is thin and dark with a reddish orange saw-toothed stripe along the top of the salamander. The underside as well as the lower sides consists of light and gray mottling. This species is typically found in wet forests with rocks and lots of limbs, logs and leaves which are used to hide from predators. Necessary habitat for this species is not present on the Site. No evidence of nesting, foraging or individual species was documented during the site review. Development activities on the site will “Not Effect” the Southern redback salamander.

4. JURISDICTIONAL WETLANDS AND OTHER WATERS

4.1 US Army Corps of Engineers

Technical guidelines outlined in the US Army Corps of Engineers Wetlands Delineation Manual (1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) were applied in the field for determining the presence and location of jurisdictional wetlands and waters on and near the Site.

Section 404 of the Clean Water Act (33 USC 1344) requires authorization from the Secretary of the Army, acting through the CE, for the discharge of dredged or fill material into all waters of the United States, including wetlands. Discharges of fill material generally include, without limitation: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and sub-aqueous utility lines; fill associated with the creation of ponds; and any other work involving the discharge of fill or dredged material. A CE permit is required whether the work is permanent or temporary.

The basic premise of the dredge and fill program is to ensure that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation’s waters would be significantly degraded. What this

implies is a Section 404 permit application must reflect that to the extent practicable the following below sequential review has been met.

1. Reasonably avoided all wetland impacts
2. Minimized potential impacts on wetlands and
3. Provide compensation for any remaining unavoidable impacts.

An initial jurisdictional analysis of the Site was completed using remote sensing data: historic aeriels, two foot LIDAR data (**Figure 4**), USGS Topographic Map, Jena West (**Figure 5**) and the NRCS La Salle Parish Soil Survey (**Figure 6**). The on-site jurisdictional evaluation consisted of the aforementioned data review and intensive field reconnaissance of the Site. These efforts revealed two jurisdictional features that were field delineated using survey flagging tape. Each delineated wetland point was alpha-numerically labeled and located using a sub-meter accurate, Trimble 7X GPS unit. Field data was uploaded to a GIS (Geographic Information System) and geo-referenced to a base map. The graphic representation of the jurisdictional boundary is displayed in **Figure 3**.

The jurisdictional areas comprise approximately 0.37 acres and 0.30 acres of CE wetlands and other waters. The entire 0.67 acres of jurisdictional area make up the head waters of an unnamed tributary of Muddy Prong Creek. The jurisdiction consists of low quality seasonal flow ways that are shallow in nature except for areas where they have been excavated and ponded for historic land uses. They are principally formed from channelized rain water sheet flow. The incised channels have intercepted underground seepage flow from adjacent hillsides which maintains an adequate hydrologic regime for hydric soil development and persistence. A dark matrix with a Munsell chroma of less than 2 and many to numerous redox concentrations persisting throughout the upper soil profiles were identified within the jurisdictional area. Significant contemporary diffuse redox boundaries were present near the surface with and without living root channels.

The remaining portion of the site is dominated by pine silviculture positioned on elevated upland ridges and hillslopes. The upland is characterized by an overstory of loblolly pine with a dense shrub layer of yaupon, popcorn, privet and sweetgum. Underlying soils are provided rapid runoff due to the sloping terrain. Several relic species of what appears to have been a mixed-hardwood pine forest ecosystem remain persistent throughout the uplands. These include: southern magnolia, southern red oak, farkleberry and post-oak.

5. SUMMARY AND CONCLUSIONS

Extensive review and survey reconnaissance of the Site revealed that it is unsuitable for any state or federal listed plant or animal species. The disturbed nature and habitat makeup of the Site is not conducive for listed animal species nesting or foraging habitat. Therefore, development of the approximately 28.67 acre Site will “Not Effect” any species currently listed or species potentially listed in the near future as threatened or endangered. Of the state and

federally listed animal species, no occurrences were documented, nor expected on the Site. Although their absence from the site cannot be guaranteed, the likelihood of occurrence is exceedingly low.

Jurisdictional features meeting Section 404 wetland criteria were identified and delineated within the Site's property boundary. The jurisdiction consists of 0.67 acres of low quality wetlands and other waters. Dredge or fill activities waterward of the jurisdictional limits will require CE permitting review prior to conducting such activities.

Based on the information gathered during the performance of this Environmental Assessment, it is our best profession opinion that development of the Site can be achieved without negatively affecting listed plant and animal species or their habitat.

Prepared by:

Patrick Imhof
Environmental Scientist

February 17, 2016
Date

6. REFERENCES

Field Guide to the Rare Plants of Florida

by Linda G. Chafin, Botanist with Jean C. Putnam Hancock, Botanical Illustrator and Gil Nelson, Ph.D., Graphic Designer and Chief Photographer

FWS Integrated Wildlife Habitat Ranking System 2009

FWS Critical Habitat Mapper, Louisiana Data layer

Godfrey Robert K. Aquatic and wetland plants of southeastern United States: Dicotyledons
University of Georgia Press, Athens, GA 30602 1981

Godfrey Robert K. Aquatic and wetland plants of southeastern United States: Monocotyledons
University of Georgia Press, Athens, GA 30602 1979

Louisiana Department of Wildlife and Fisheries, Natural Heritage Program

Nature Serve Website

U.S. Department of Agriculture aerial photographs

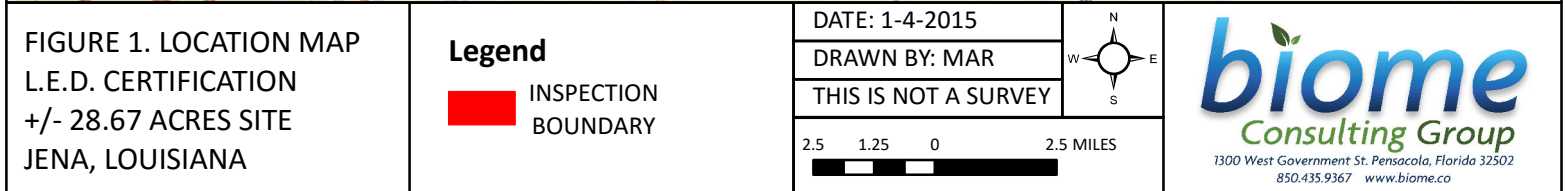
U.S. Department of Agriculture, Natural Resource Conservation Services: Soil Survey of La Salle Parish, 1991

U.S. Geological Survey, Jena West Topographical Quadrangle. Revised 1983.

Table 1:**Louisiana Department of Wildlife and Fisheries Rare, Threatened and Endangered Species Occurring in LaSalle Parish January 2016**

Scientific Name	Common Name	State Status	Federal Status
<i>Agalinis skinneriana</i>	Skinner's purple false foxglove		
<i>Asio flammeus</i>	Short-eared Owl		
<i>Burmannia biflora</i>	Northern Burmannia		
<i>Canis rufus</i>	Red Wolf		
<i>Carex microdonta</i>	Little Tooth Sedge		
<i>Cypripedium kentuckiense</i>	Southern Lady's-slipper		
<i>Dichanthelium strigosum</i> var. <i>glabrescens</i>	Roughhair Witchgrass		
<i>Echinacea purpurea</i>	Purple Coneflower		
<i>Fallicambarus dissitus</i>	Pine Hills Crawfish		
<i>Faxonella creaseri</i>	Ouachita Fencing Crawfish		
<i>Geocarpon minimum</i>	Earth-fruit		T
<i>Haliaeetus leucocephalus</i>	Bald Eagle	E	Delisted
<i>Houstonia purpurea</i> var. <i>calycosa</i>	Purple Bluet		
<i>Lobelia flaccidifolia</i>	Coastal Plain Lobelia		
<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	E
<i>Pituophis ruthveni</i>	Louisiana Pine Snake		C
<i>Plethodon kisatchie</i>	Louisiana Slimy Salamander		
<i>Polyodon spathula</i>	Paddlefish		
<i>Pteronotropis hubbsi</i>	Bluehead Shiner		
<i>Seiurus motacilla</i>	Louisiana Waterthrush		
<i>Stellaria alsine</i>	Chickweed		

C = Candidate, T = Listed Threatened, E = Listed Endangered



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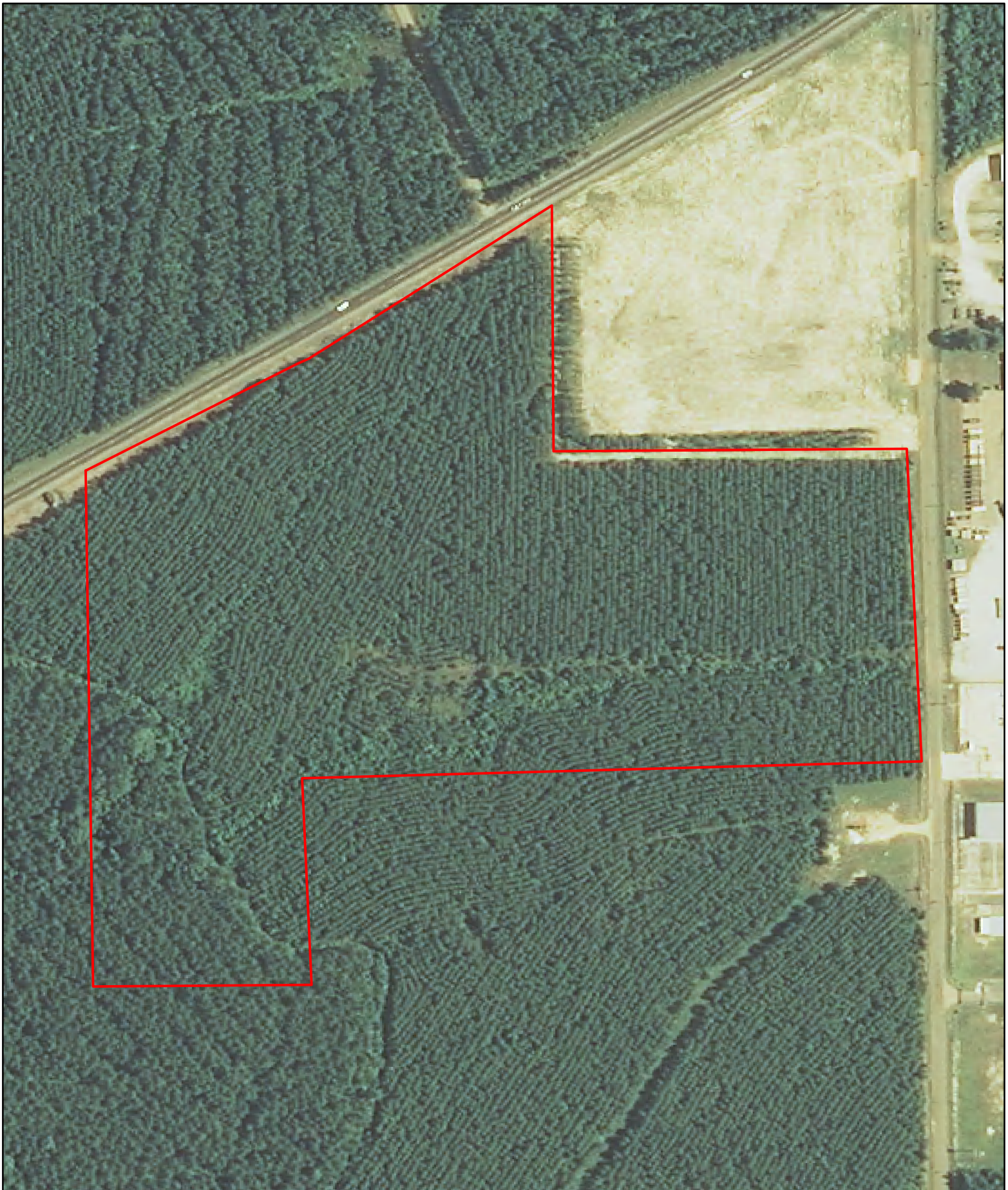


FIGURE 2. 2013 AERIAL
L.E.D. CERTIFICATION
+/- 28.67 ACRES SITE
JENA, LOUISIANA

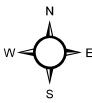
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 INSPECTION
BOUNDARY


DATE: 1-4-2015

DRAWN BY: MAR

THIS IS NOT A SURVEY



0.03 0.015 0 0.03 MILES



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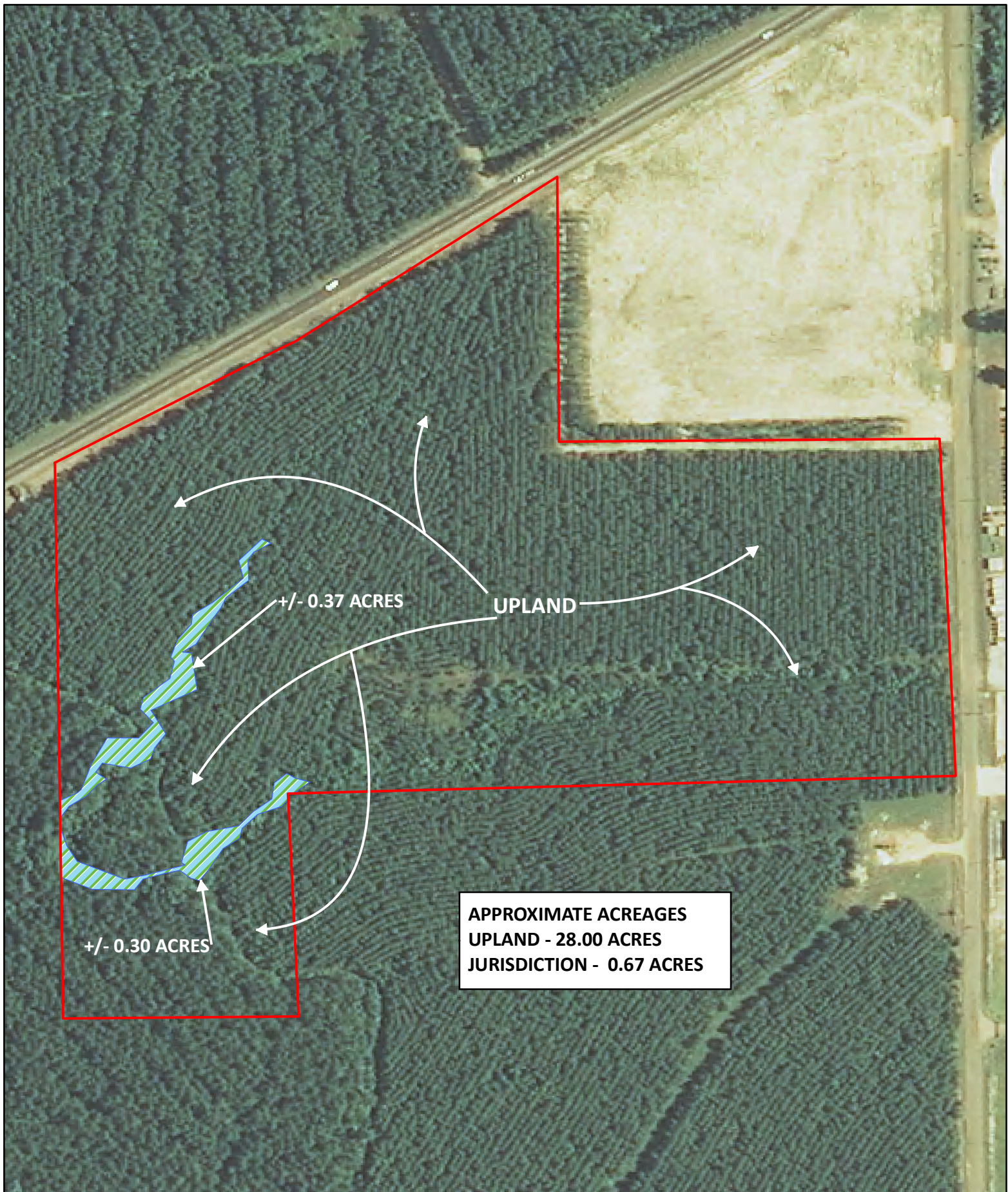


FIGURE 3. JURISDICTION
 L.E.D. CERTIFICATION
 +/- 28.67 ACRES SITE
 JENA, LOUISIANA

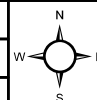
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- INSPECTION
BOUNDARY
- JURISDICTION

DATE: 1-4-2015

DRAWN BY: MAR

THIS IS NOT A SURVEY



0.03 0.015 0 0.03 MILES



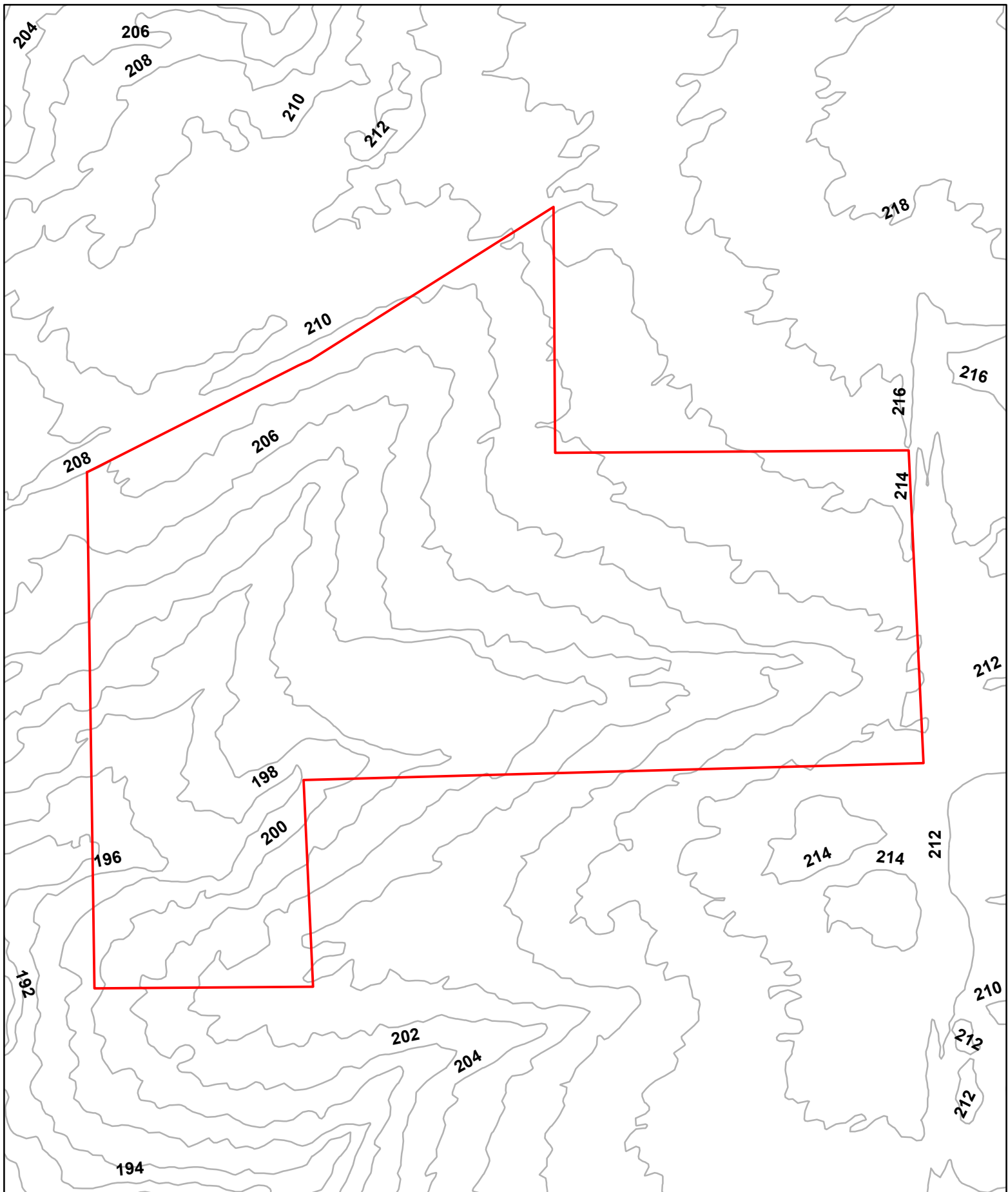


FIGURE 4. 2' LIDAR
L.E.D. CERTIFICATION
+/- 28.67 ACRES SITE
JENA, LOUISIANA

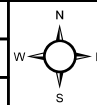
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BOUNDARY

DATE: 1-4-2015

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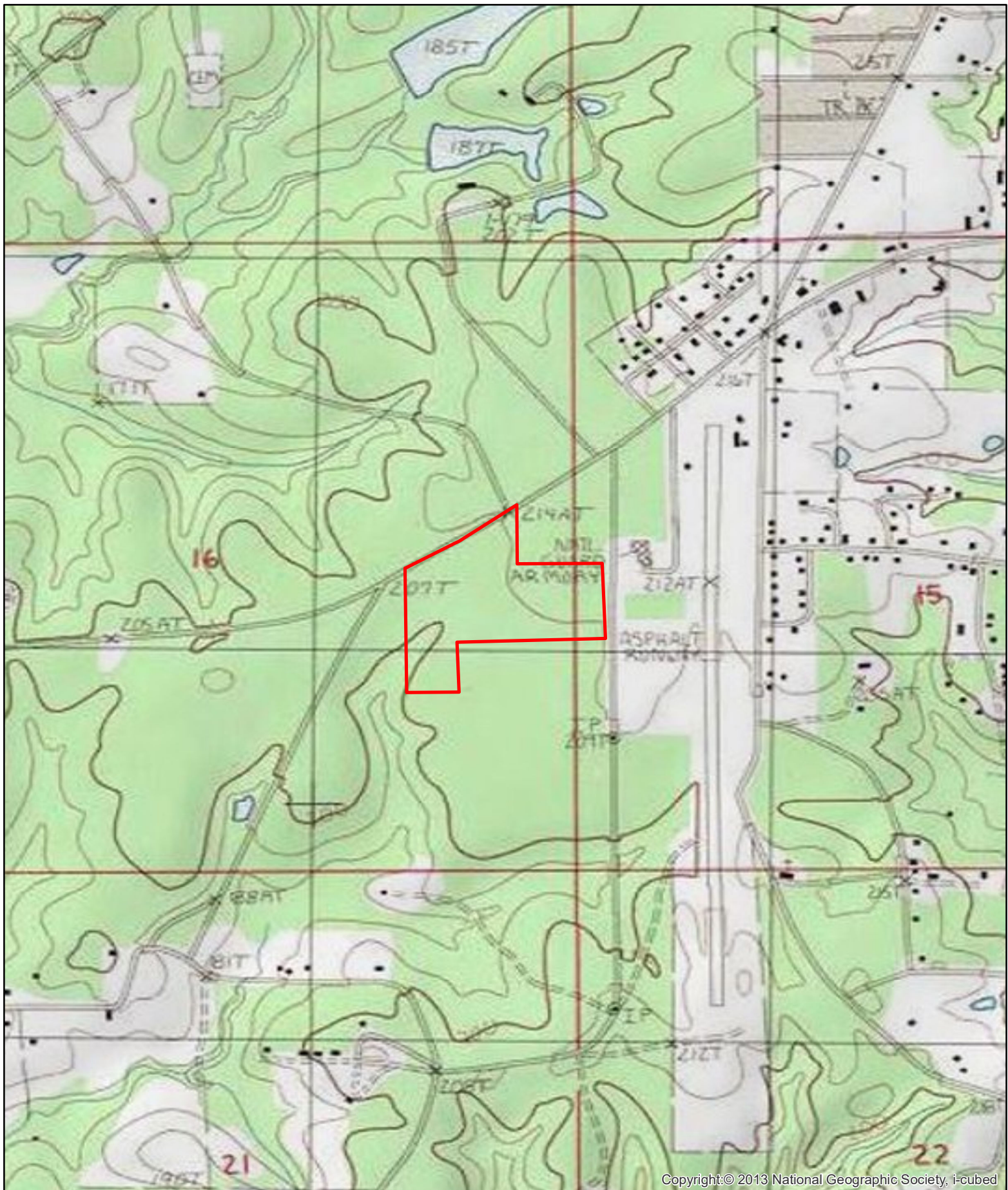
THIS IS NOT A SURVEY



0.03 0.015 0 0.03 MILES



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FIGURE 5. USGS QUAD
L.E.D. CERTIFICATION
+/- 28.67 ACRES SITE
JENA, LOUISIANA

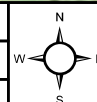
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 INSPECTION
BOUNDARY

DATE: 2-18-2015

DRAWN BY: MAR

THIS IS NOT A SURVEY



0.1 0.05 0 0.1 MILES



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SOIL MAPPING UNITS:

Pb - PHEBA LOAM

Rt - RUSTON FINE SANDY LOAM, 3-8 PERCENT SLOPES

Sf - SAVANNAH FINE SANDY LOAM, 1-5 PERCENT SLOPES

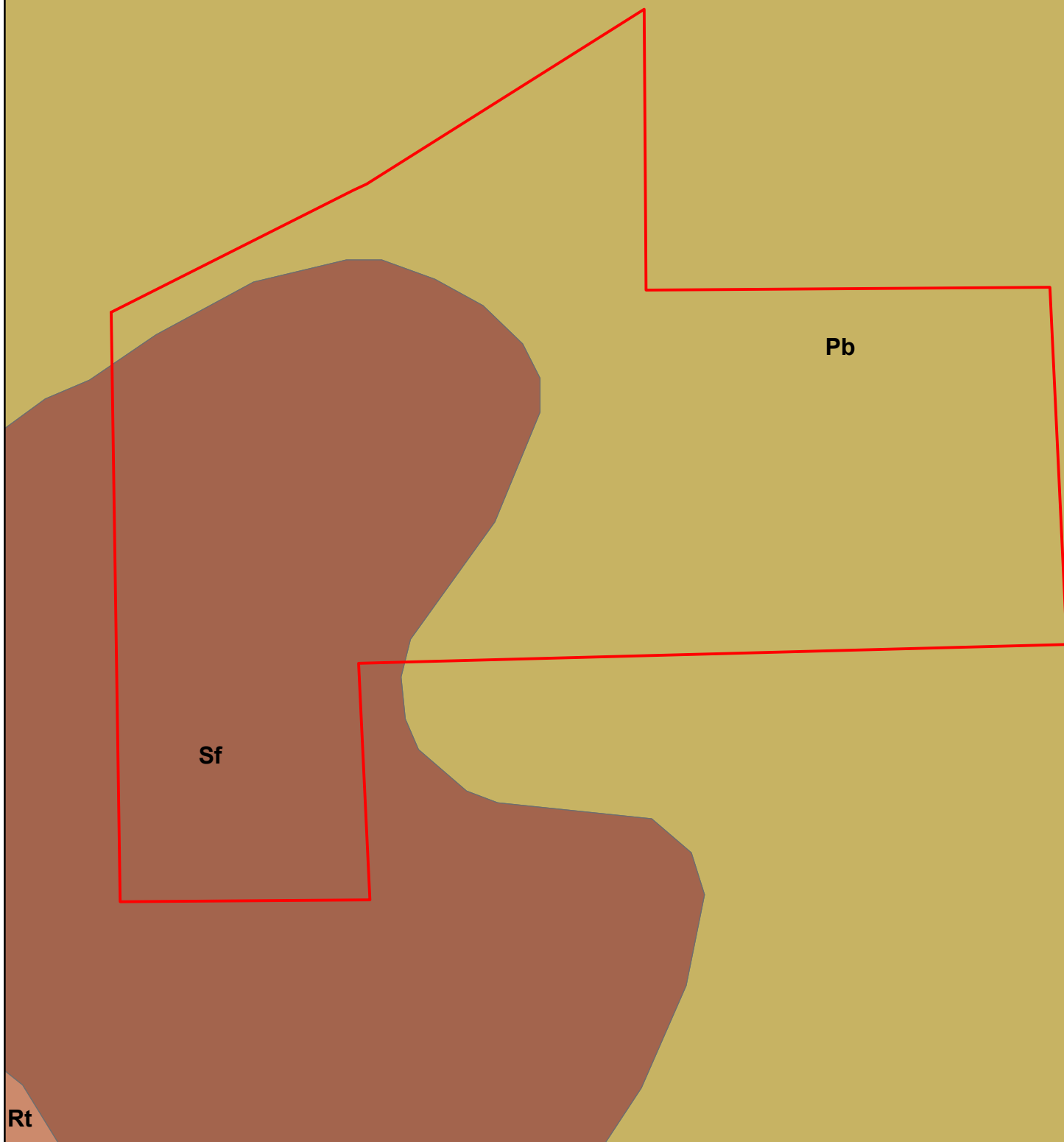



FIGURE 6. NRCS SOILS
L.E.D. CERTIFICATION
+/- 28.67 ACRES SITE
JENA, LOUISIANA

Legend

 INSPECTION
BOUNDARY

DATE: 1-4-2015

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THIS IS NOT A SURVEY



0.03 0.015 0 0.03 MILES



ATTACHMENT 1

U.S. ARMY CORPS OF ENGINEERS DATA SHEETS

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Dominant Species?

 Sampling Point: 1

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <i>Pinus taeda</i>	75	<input checked="" type="checkbox"/>	96.2%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. <i>Liquidambar styraciflua</i>	3	<input type="checkbox"/>	3.8%	FAC	
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		
8. _____	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>39</u> 20% of Total Cover: <u>15.6</u> 78 = Total Cover					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>172</u> x 3 = <u>516</u> FACU species <u>24</u> x 4 = <u>96</u> UPL species <u>0</u> x 5 = <u>0</u> Column Total s: <u>196</u> (A) <u>612</u> (B) Prevalence Index = B/A = <u>3.122</u>
Sapling or Sapling/Shrub Stratum (Plot size: 30' Radius)					
1. <i>Ilex vomitoria</i>	65	<input checked="" type="checkbox"/>	63.1%	FAC	
2. <i>Triadica sebifera</i>	15	<input type="checkbox"/>	14.6%	FAC	
3. <i>Callicarpa americana</i>	15	<input type="checkbox"/>	14.6%	FACU	
4. <i>Quercus falcata</i>	5	<input type="checkbox"/>	4.9%	FACU	
5. <i>Liquidambar styraciflua</i>	3	<input type="checkbox"/>	2.9%	FAC	
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>51.5</u> 20% of Total Cover: <u>20.6</u> 103 = Total Cover					
Shrub Stratum (Plot size: _____)					
1. _____	0	<input type="checkbox"/>	0.0%		
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		Definition of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height.
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u> 0 = Total Cover					
Herb Stratum (Plot size: 30' Radius)					
1. <i>Callicarpa americana</i>	3	<input checked="" type="checkbox"/>	60.0%	FACU	
2. <i>Liquidambar styraciflua</i>	1	<input checked="" type="checkbox"/>	20.0%	FAC	
3. <i>Pteridium aquilinum</i>	1	<input checked="" type="checkbox"/>	20.0%	FACU	
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
6. _____	0	<input type="checkbox"/>	0.0%		
7. _____	0	<input type="checkbox"/>	0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
8. _____	0	<input type="checkbox"/>	0.0%		
9. _____	0	<input type="checkbox"/>	0.0%		
10. _____	0	<input type="checkbox"/>	0.0%		
11. _____	0	<input type="checkbox"/>	0.0%		
12. _____	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>2.5</u> 20% of Total Cover: <u>1</u> 5 = Total Cover					
Woody Vine Stratum (Plot size: 30' Radius)					
1. <i>Gelsemium sempervirens</i>	10	<input checked="" type="checkbox"/>	100.0%	FAC	
2. _____	0	<input type="checkbox"/>	0.0%		
3. _____	0	<input type="checkbox"/>	0.0%		
4. _____	0	<input type="checkbox"/>	0.0%		
5. _____	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>5</u> 20% of Total Cover: <u>2</u> 10 = Total Cover					

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR	4/2					Loam	dark grayish brown
4-7	10YR	5/2					Loam	grayish brown
7-12	10R	5/4					Loam	yellowish brown

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No hydric soil indicators present.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Jena **City/County:** Jena/LaSalle **Sampling Date:** 15-Dec-15
Applicant/Owner: MMLH **State:** LA **Sampling Point:** 2
Investigator(s): Pat Imhof **Section, Township, Range:** S 15 T 08N R 03E
Landform (hillslope, terrace, etc.): Drain **Local relief (concave, convex, none):** concave **Slope:** 5.2 % / 3.0 °
Subregion (LRR or MLRA): LRR P **Lat.:** 31° 40'17.7"N **Long.:** 92°09'50.1"W **Datum:** NAD83
Soil Map Unit Name: Savannah fine sandy loam, 1 to 5 percent **NWI classification:** _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ☒ No ☐
Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Data point is located in an ephemeral drain in the western portion of the property.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: High water table with flowing water from seepage located upslope.		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Dominant Species?

 Sampling Point: 2

Tree Stratum (Plot size: 30' Radius)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. Liquidambar styraciflua	40	<input checked="" type="checkbox"/>	48.2%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. Acer rubrum	40	<input checked="" type="checkbox"/>	48.2%	FAC	
3. Carpinus caroliniana	3	<input type="checkbox"/>	3.6%	FAC	
4.	0	<input type="checkbox"/>	0.0%		
5.	0	<input type="checkbox"/>	0.0%		
6.	0	<input type="checkbox"/>	0.0%		
7.	0	<input type="checkbox"/>	0.0%		
8.	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>41.5</u> 20% of Total Cover: <u>16.6</u> 83 = Total Cover					Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 5 x 2 = 10 FAC species 128 x 3 = 384 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Total s: 133 (A) 394 (B) Prevalence Index = B/A = <u>2.962</u>
Sapling or Sapling/Shrub Stratum (Plot size: 30' Radius)					
1. Liquidambar styraciflua	35	<input checked="" type="checkbox"/>	81.4%	FAC	
2. Acer rubrum	7	<input type="checkbox"/>	16.3%	FAC	
3. Quercus phellos	1	<input type="checkbox"/>	2.3%	FACW	
4.	0	<input type="checkbox"/>	0.0%		
5.	0	<input type="checkbox"/>	0.0%		
6.	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>21.5</u> 20% of Total Cover: <u>8.6</u> 43 = Total Cover					
Shrub Stratum (Plot size:)					Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1.	0	<input type="checkbox"/>	0.0%		
2.	0	<input type="checkbox"/>	0.0%		
3.	0	<input type="checkbox"/>	0.0%		
4.	0	<input type="checkbox"/>	0.0%		
5.	0	<input type="checkbox"/>	0.0%		
6.	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u> 0 = Total Cover					
Herb Stratum (Plot size: 30' Radius)					Definition of Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height.
1. Chasmanthium latifolium	3	<input checked="" type="checkbox"/>	42.9%	FAC	
2. Smilax laurifolia	3	<input checked="" type="checkbox"/>	42.9%	FACW	
3. Arundinaria gigantea	1	<input type="checkbox"/>	14.3%	FACW	
4.	0	<input type="checkbox"/>	0.0%		
5.	0	<input type="checkbox"/>	0.0%		
6.	0	<input type="checkbox"/>	0.0%		
7.	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>3.5</u> 20% of Total Cover: <u>1.4</u> 7 = Total Cover					
Woody Vine Stratum (Plot size:)					Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1.	0	<input type="checkbox"/>	0.0%		
2.	0	<input type="checkbox"/>	0.0%		
3.	0	<input type="checkbox"/>	0.0%		
4.	0	<input type="checkbox"/>	0.0%		
5.	0	<input type="checkbox"/>	0.0%		
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u> 0 = Total Cover					
Remarks: (If observed, list morphological adaptations below).					

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR	2/1					Loam	dark grayish brown
2-5	10YR	3/2					Loam	light yellowish brown
5-12	10YR	4/2					Loam	yellowish brown

¹ Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) (LRR P, T, U)
- ☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ☐ Muck Presence (A8) (LRR U)
- ☐ 1 cm Muck (A9) (LRR P, T)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) (MLRA 150A)
- ☐ Sandy Muck Mineral (S1) (LRR O, S)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
- ☐ Thin Dark Surface (S9) (LRR S, T, U)
- ☐ Loamy Mucky Mineral (F1) (LRR O)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) (LRR U)
- ☐ Depleted Ochric (F11) (MLRA 151)
- ☐ Iron-Manganese Masses (F12) (LRR O, P, T)
- ☐ Umbric Surface (F13) (LRR P, T, U)
- ☐ Delta Ochric (F17) (MLRA 151)
- ☐ Reduced Vertic (F18) (MLRA 150A, 150B)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

ATTACHMENT 2

SITE PHOTOGRAPHS



Photograph No. 1 – View from the eastern boundary of the subject site facing north.



Photograph No. 2 – Facing west along the commercial property to the north of the project site.



*Photograph No.3 – View of the wetland drain
in the western portion of the subject site.*



*Photograph No. 4 – View from the northern boundary of
the subject site facing southwest along State Route 8.*



Photograph No. 5 – View of the typical dense shrub layer throughout the subject site.



Photograph No. 6 – Typical vegetation located in the wooded area of the subject site.



Photograph No. 7 – View of drain closer to the western property boundary.



Photograph No. 8 – View of typical groundcover with excessive leaf litter and shading.

ATTACHMENT 3

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES RESPONSE LETTER



JOHN BEL EDWARDS
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

CHARLIE MELANCON
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

Date January 22, 2016

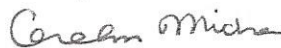
Name Michael Rogers
Company biome Consulting Group
Street Address 1300 West Government St.
City, State, Zip Pensacola, FL 32502

Project Jena Site
Project ID 72016
Invoice Number 16012210

Personnel of the Coastal & Nongame Resources Division have reviewed the preliminary data for the captioned project. After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats within Louisiana's boundary are anticipated for the proposed project. No state or federal parks, wildlife refuges or scenic streams are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. LNHP requires that this office be acknowledged in all reports as the source of all data provided here. If at any time Heritage tracked species are encountered within the project area, please contact the LNHP Data Manager at 225-765-2643. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

for 
Amity Bass, Coordinator
Natural Heritage Program