NORTHEAST LOUISIANA ECONOMIC ALLIANCE

NELEA

Exhibit FF. Bastrop IP Mill Site Wetlands Delineation Report

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Bastrop IP Mill Site Wetlands Delineation Report

March 11, 2019

Mr. Charles Allred
Chief, Surveillance and Enforcement Section
Vicksburg District
US Army Corps of Engineers
4155 Clay Street
Vicksburg, Mississippi 39183
Submitted via email to *regulatory@usace.army.mil*

Re: Wetland Data Report and Request for Preliminary Jurisdictional Determination
112 acres – Former International Paper "Louisiana Mill" Property
Northeast Louisiana Economic Alliance
Bastrop, Morehouse Parish, Louisiana 71221
PSI Project No.: 02591767-1

Dear Mr. Allred:

On behalf of Ms. Tana Trichel, President/CEO of the Northeast Louisiana Economic Alliance (NELEA), Professional Service Industries, Inc. (PSI), an Intertek company, has prepared the following wetland data report and request for a Preliminary Jurisdictional Determination (preliminary JD). Specifically, this report relates to the former International Paper "Louisiana Mill" property of approximately 112 acres in size (hereinafter referred to as Subject Property) in Bastrop, Morehouse Parish, Louisiana. The primary entrance currently used for this property is from a street address at approximately 501 Colliers Lane, Bastrop, Louisiana 71221. Both a Vicinity Map and a Site Location Map are attached as Figures 1 and 2, respectively.

The Subject Property consisting of approximately 112 acres currently has a main entrance located at the intersection of Colliers Lane and North Liberty Avenue in Bastrop, Louisiana. It is centered near Lat. 32.786425° (32° 47' 11.13" N); Long. -91.908311° (91° 54' 29.92" W) in Section 24, Township 21 North, Range 05 East, North of the Red River Land District, Morehouse Parish, Louisiana. The northern portion of the Subject Property is situated in the Horse Bayou drainage while the southern portion is apparently situated in the Staulkinghead Creek drainage. The Subject Property is characterized primarily by unforested upland components of the Pleistocene Prairie Terrace, and to a lesser extent as emergent palustrine wetland ecosystems. There also appears to be two isolated wetland areas apparently resulting from ponding in the former pine and hardwood tree length storage areas on the northern side of the property. These appear to result from ponding in areas with a former industrial land use that is not relieved through surface drainage features. To a lesser extent,

bottomland hardwood palustrine forested wetland ecosystems corresponding primarily to the lower margins (toes of the scarps of the upland terrace landform) also occur.

INTRODUCTION

This wetland data report has been prepared to present field data collected in accordance with the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (2010), and other relevant information pertaining to the Subject Property to provide a description of the Subject Property in terms of the multi-parameter approach to wetland delineation which requires positive identification of the following three criteria: 1.) Hydrophytic vegetation, 2.) Hydric soil, and 3.) Wetland hydrology.

The following document also represents a request for a preliminary JD on behalf of NELEA which is interested in determining the potential extent of wetlands on the Subject Property. This request for a preliminary JD is in accordance with Regulatory Guidance Letter (RGL) 16-01 enacted October 2016. It is understood by NELEA that preliminary JDs are defined as written indications that there "may be" waters of the United States on a parcel or indications of the approximate location(s) of waters of the United States on a parcel, and that preliminary JDs are advisory in nature and may not be appealed.

Furthermore, the requestor understands in accordance with RGL 16-01, that when the USACE provides a preliminary JD, or authorizes an activity through a general or individual permit relying on an issued preliminary JD, the USACE is making no legally binding determination of any type regarding whether jurisdiction exists over the particular aquatic resource in question under either the Clean Water Act or the River and Harbors Act. A preliminary JD is "preliminary" in the sense that a recipient of a preliminary JD can later request and obtain an approved JD if that becomes necessary or appropriate during the permit process or during the administrative appeal process.

For the purposes of this report, the term "wetlands," when used on its own, is to refer to areas of aquatic resources that may meet the USACE wetland definition without regard to whether or not the area is jurisdictional, which is a determination that is made by the USACE either in the form of a preliminary JD or an approved JD.

OBJECTIVE OF WETLAND DATA REPORT

The purpose of PSI's field investigation and resulting data report was to determine the location and extent of potentially jurisdictional aquatic resources that occur on the Subject Property. PSI examined on-site soil, vegetation, hydrology and reviewed relevant documentation including historical topographic maps, historical remote sensing (i.e., aerial and satellite photographs), National Wetland Inventory (NWI) maps, detailed topographic data available from the Louisiana Geographic Information Center, and the Web Soil Survey.

The wetland data report satisfies the objective of NELEA in obtaining a routine wetland delineation report to support the Louisiana Economic Development (LED) Site Certification process. As part of LED's mission to cultivate jobs and economic opportunity by strengthening

the state's business environment, the Bastrop IP Mill Site will be marketed as a future industrial or commercial site by NELEA.

Based on our observations and research, the site appears to contain areas that could potentially be considered jurisdictional wetlands or other waters of the U.S. by the USACE.

DATA COLLECTION METHODOLOGY

A field inspection of the Subject Property was completed on February 15, 2019 by Mr. Jens Aubin "J.A." Rummler, P.G., a Senior Geologist at PSI and a delineator with training based on the 1987 Wetland Delineation Manual.

Prior to and following the field inspection of the Subject Property the National Resource Conservation Service (NRCS) Web Soil Survey, United States Geological Survey (USGS) topographic maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Maps, and historical aerial and satellite imagery of the property from 1998, 2004, 2005, 2006, 2007, 2009, 2010, 2012, 2013, 2015, 2016, and 2018 were reviewed. The NWI maps did not show wetlands mapped by the USFWS on or adjacent to the Subject Property.

Detailed results of the delineation including specific species of plants, hydrologic indicators and soil characteristics can be found on the Wetland Determination Data Forms – Atlantic and Gulf Coastal Plain (AGCP) Regional Supplement attached as Appendix A to this report. Appropriate AGCP wetland data determination forms were completed for four sample locations situated across the Subject Property (see Figure 3) to characterize the occurrence of potential jurisdictional wetlands and other waters of the U.S. on the property.

A photographic log of the data sampling locations and other representative areas observed during the site inspection of the Subject Property are attached as Appendix A.

HYDRIC SOILS

Soils mapped in the current Morehouse Parish, Louisiana soil survey accessed from the NRCS Web Soil Survey, indicated the soils mapped within the limits of the Subject Property are predominately classified as non-hydric with a very limited area mapped as hydric at essentially one point along the eastern side. The NRCS soil map units occurring on the Subject Property were: *Bussy silt loam, 1 to 5 percent slopes (Bs)*; *Debute silt loam, 3 to 8 percent slopes (De)*; and *Guyton silt loam, 0 to 1 percent slopes (Gu)*. Each of these map soil units consisted of the minor components as described in the following percentages of Soil Series / Components:

- *Bussy silt loam, 1 to 5 percent slopes (Bs)* - 20% Unnamed hydric (Hydric)
- *Debute silt loam, 3 to 8 percent slopes (De)* - 15% Unnamed hydric (Hydric)
- *Guyton silt loam, 0 to 1 percent slopes (Gu)* - 8% Cahaba (Non-Hydric), 5% Frizzell (Non-Hydric), and 2% Guyton, ponded (Hydric)

A soil map created using the NRCS Web Soil Survey and description of the soil map units is included in Appendix B. According to soil profile test pits situated across the Subject Property and observations during the site inspection, hydric soils were limited to specific landform positions on the Subject Property and did not occur over the majority of the acreage. Specifically hydric soils appeared to occur in areas of ponding on landform positions corresponding to terrace treads.

PSI examined soils at four soil profile test pits revealing the soil horizons between the ground surface and a depth of approximately 19 inches below the ground surface. The depth of each sample was sufficient to determine changes in upper horizons and to observe field indicators of hydric soils. Based on field observations, the wetland criterion for hydric soils was met at three of the four sample locations established by PSI to characterize the Site (see forms in Appendix C).

HYDROPHYTIC VEGETATION

The 2016 National Wetland Plant List was consulted to determine that hydrophytic (wetland) vegetation species were present at sampled locations on the Subject Property. Indicator statuses for dominant vegetation at the four sampled locations on the Subject Property consist of facultative-wetland (FACW), obligate (OBL), and facultative-upland (FACU) species. Dominant species identified at the sampled locations on the Subject Property include: Bushy bluestem (*Andropogon glomeratus*, FACW), Swamp dock (*Rumex verticillatus*, FACW), Common Spike-Rush (*Eleocharis palustris*, OBL), Narrow-Leaf Carpet Grass (*Axonopus fissifolius*, FACW), Trumpetweed (*Eutrochium fistulosum*, FACW), Many Flower Marsh Pennywort (*Hydrocotyle umbellata*, OBL), White Clover (*Trifolium repens*, FACU), and Johnson Grass (*Sorghum halepense*, FACU).

PSI examined vegetation at four sample locations as well as other areas of the property. Based on field observations, the hydrophytic vegetation criterion was met at three of the four sample locations established by PSI to characterize the Site (see data forms in Appendix C).

HYDROLOGIC CONDITIONS

The Subject Property is in the Bayou Bartholomew Watershed identified by USGS 8-digit Hydrologic Unit Code 08040205, and it is situated on Pleistocene Prairie Terrace deposits between the small river / stream alluvial valley deposits of the Horse Bayou drainage on the north and the Staulkinghead Creek drainage on the south. Primary hydrologic processes that likely influence the property are: 1.) runoff via sheet flow, constructed drainage ditches, small erosional gullies, and low profile erosional valleys from the higher elevation Pleistocene Prairie Terrace landform; and 2.) groundwater seepage (primarily at the base of the escarpment / bluff along the boundary between the terrace and alluvial valley landform along the north side of the Subject Property). The climatic / hydrologic conditions were typical for February 15th, and wet conditions were noticeable due to recent precipitation in the preceding weeks.

Hydrologic characteristics are dynamic in wetlands and are often not readily apparent during periods of minimum seasonal precipitation or saturation. Indirect indicators are used to

determine if wetland hydrology such as extended saturation or ponding has been present for significant duration during the growing season. Examples of hydrology indicators observed on the Subject Property included surface water, high water table, and moss growth on the ground surface.

PSI examined hydrology at four sample locations as well as other areas of the property. Based on field observations, the hydrology criterion was met at three of the four sample locations established by PSI to characterize aquatic resources on the Subject Property (see data forms in Appendix C).

CONCLUSIONS

A wetland data report was prepared by PSI for the Subject Property more specifically described as the former International Paper "Louisiana Mill" property of approximately 112 acres in size in Bastrop, Morehouse Parish, Louisiana. Positive evidence of all three diagnostic characteristics for jurisdictional wetlands were found at three of the four sample locations established to characterize aquatic resources on the Subject Property.

Based on the results of our site inspection and research, it is the opinion of PSI that there are potential wetland areas totaling approximately 1.92 acres and potential other waters (streams) of the U.S. totaling approximately 7,898 linear feet present on the Subject Property. It is PSI's opinion that these aquatic resources are potentially under the jurisdiction of the USACE. Please see the attached Figure 4 for PSI's assessment of the location of aquatic resources on the Subject Property.

On behalf of Ms. Trichel of the NELEA, PSI respectfully requests that you, at your earliest convenience, review this wetland data report and render a preliminary JD for the Subject Property. If you have questions, or require additional information regarding this wetland data report, please contact me at 225.293.8378 or via email at Jens.Rummler@intertek.com.

Sincerely,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Jens Aubin "J.A." Rummler, PG
Senior Geologist

Bruce T. Pollard, CPG
Principal Consultant

Attachments:
Figures – Location Maps and Potential Jurisdictional Areas
Appendix A – Subject Property Photographs
Appendix B – Desktop Wetland Review Results
Appendix C – Wetland Determination Data Forms

FIGURES

LOCATION MAPS AND POTENTIAL JURISDICTIONAL AREAS

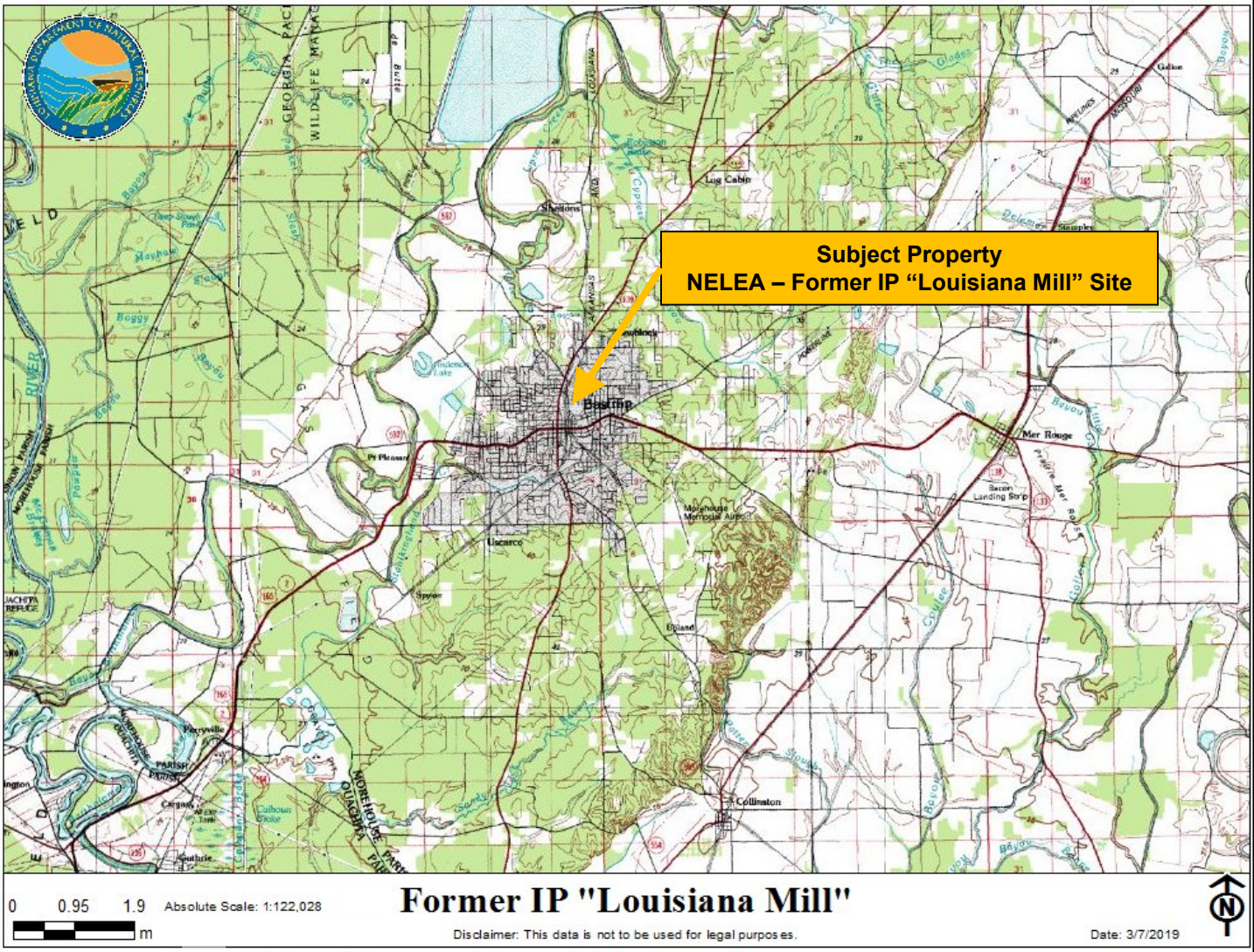


Figure 1
Northeast Louisiana Economic Alliance
Former IP "Louisiana Mill" Site
Bastrop, Louisiana

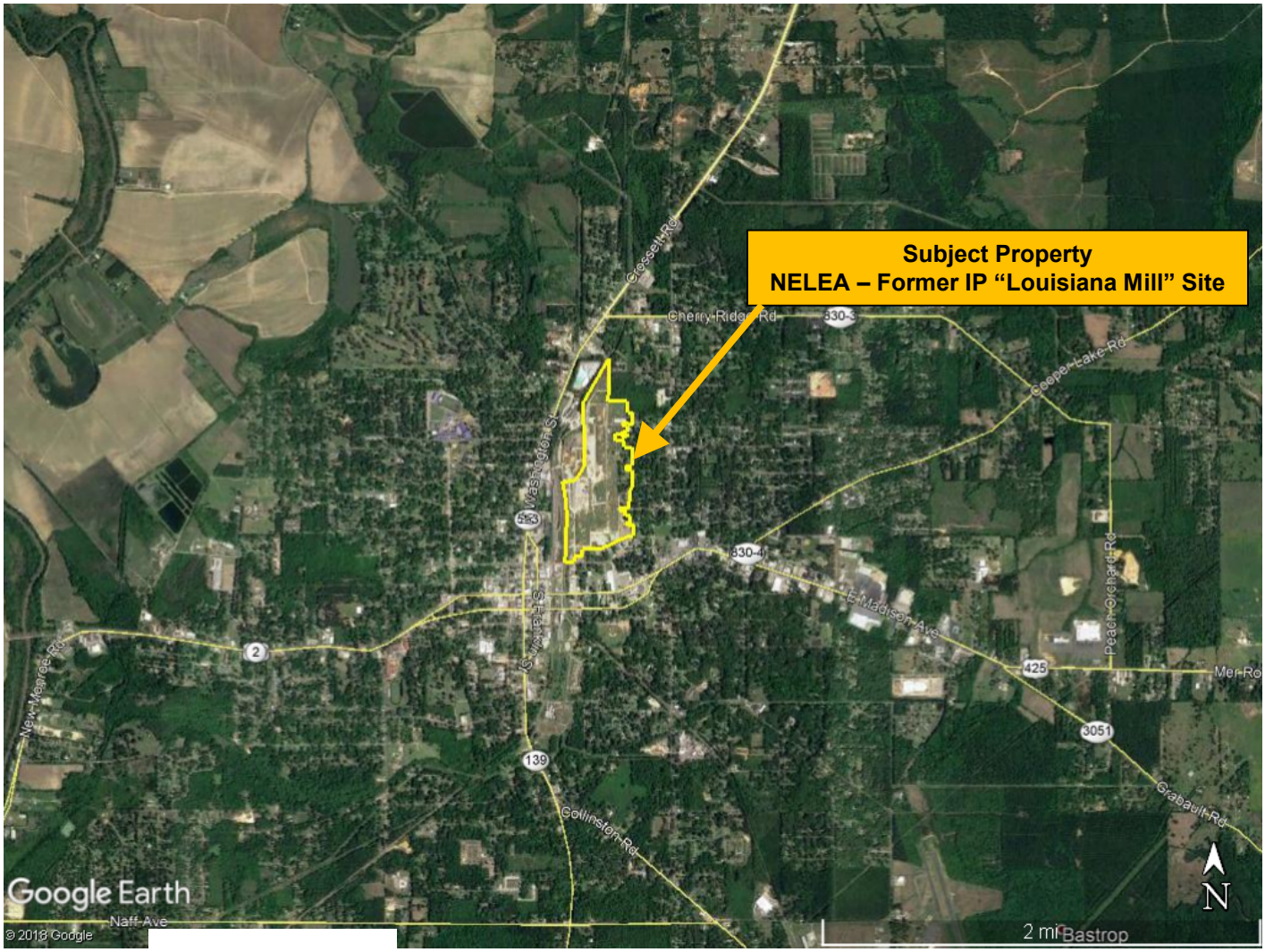
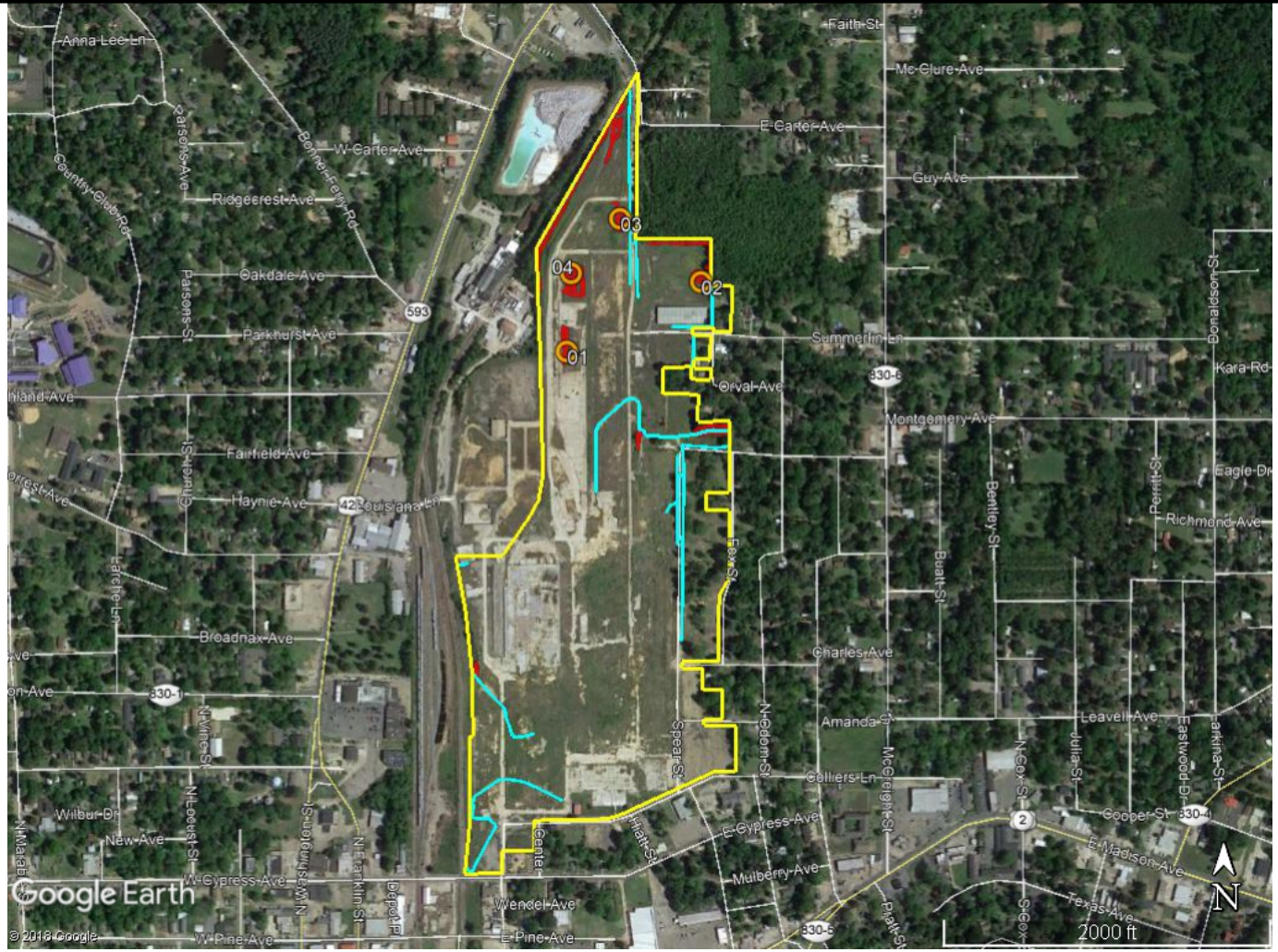


Figure 2
Northeast Louisiana Economic Alliance
Former IP "Louisiana Mill" Site
Bastrop, Louisiana



EXPLANATION

- Sample Location
- Approximate Property Boundary
- Wetland Area
- Other Waters of the U.S.

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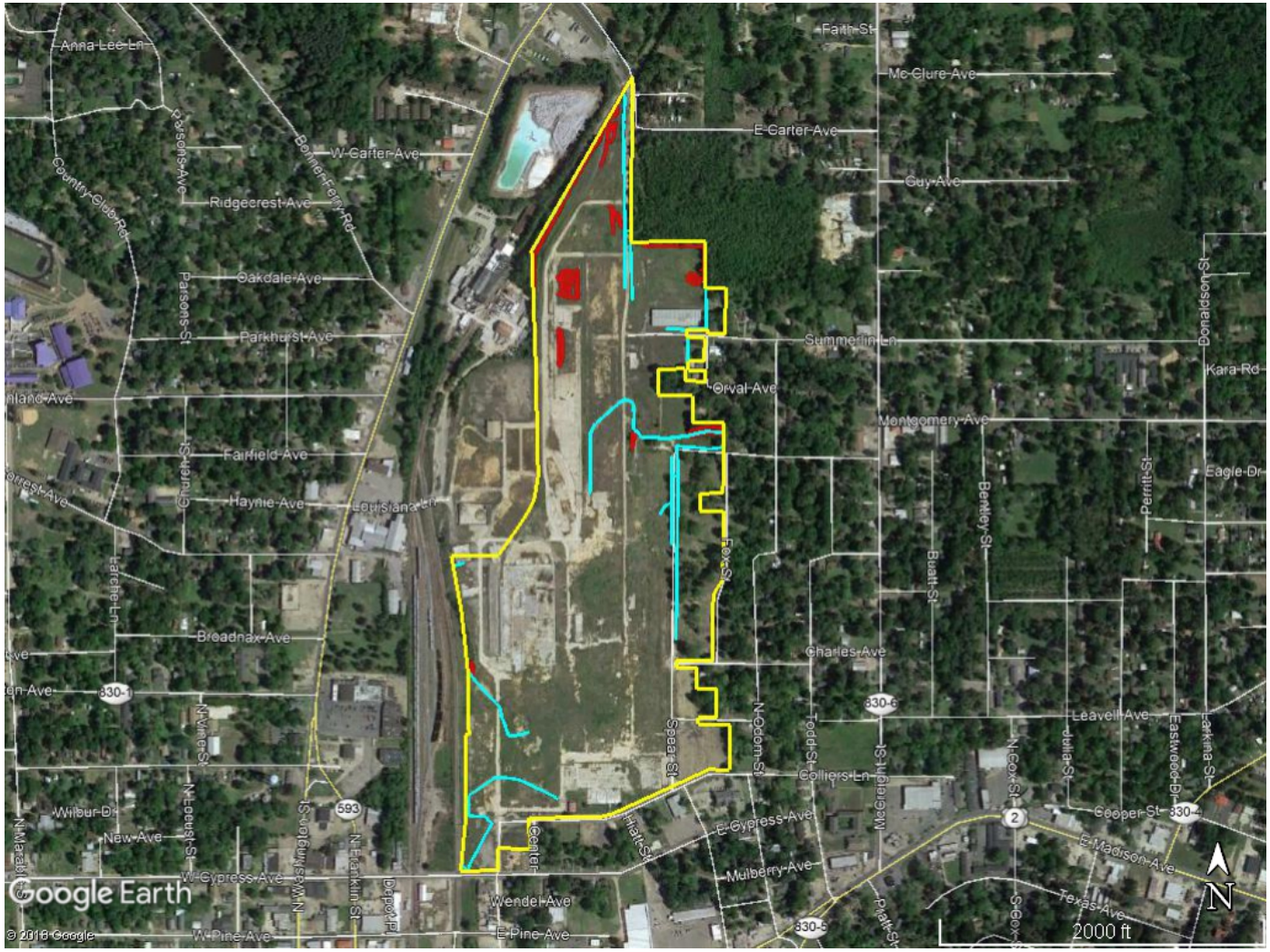
Figure 3
Wetland Determination Sample Locations
Northeast Louisiana Economic Alliance
Former IP "Louisiana Mill"
Bastrop, Louisiana

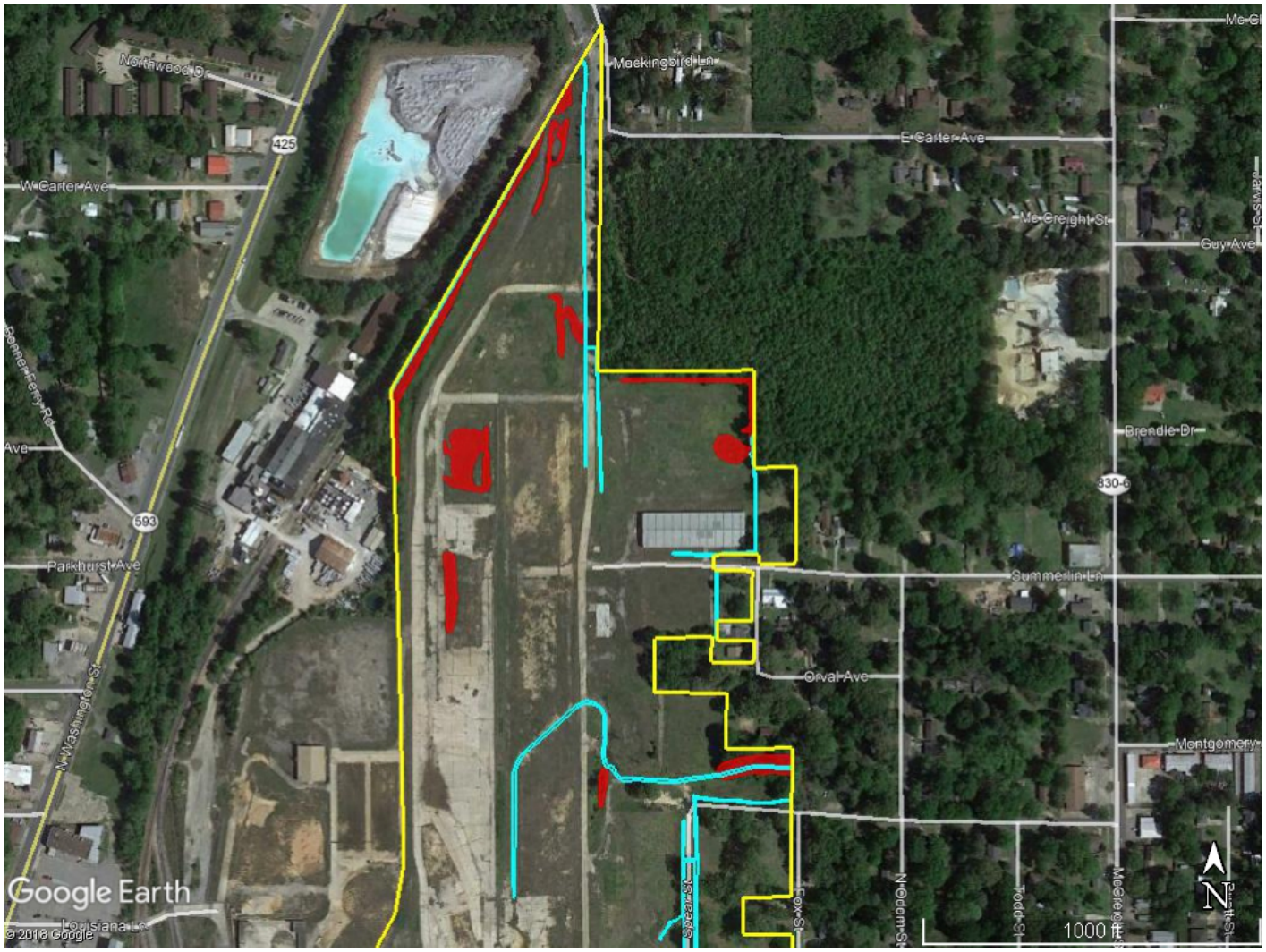


EXPLANATION

- Approximate Property Boundary
- Wetland Areas
- Other Waters of the U.S.
- Upland Areas

intertek psi

Figure 4-A
Wetlands and Other Waters of the U.S.
Northeast Louisiana Economic Alliance
Former IP "Louisiana Mill"
Bastrop, Louisiana

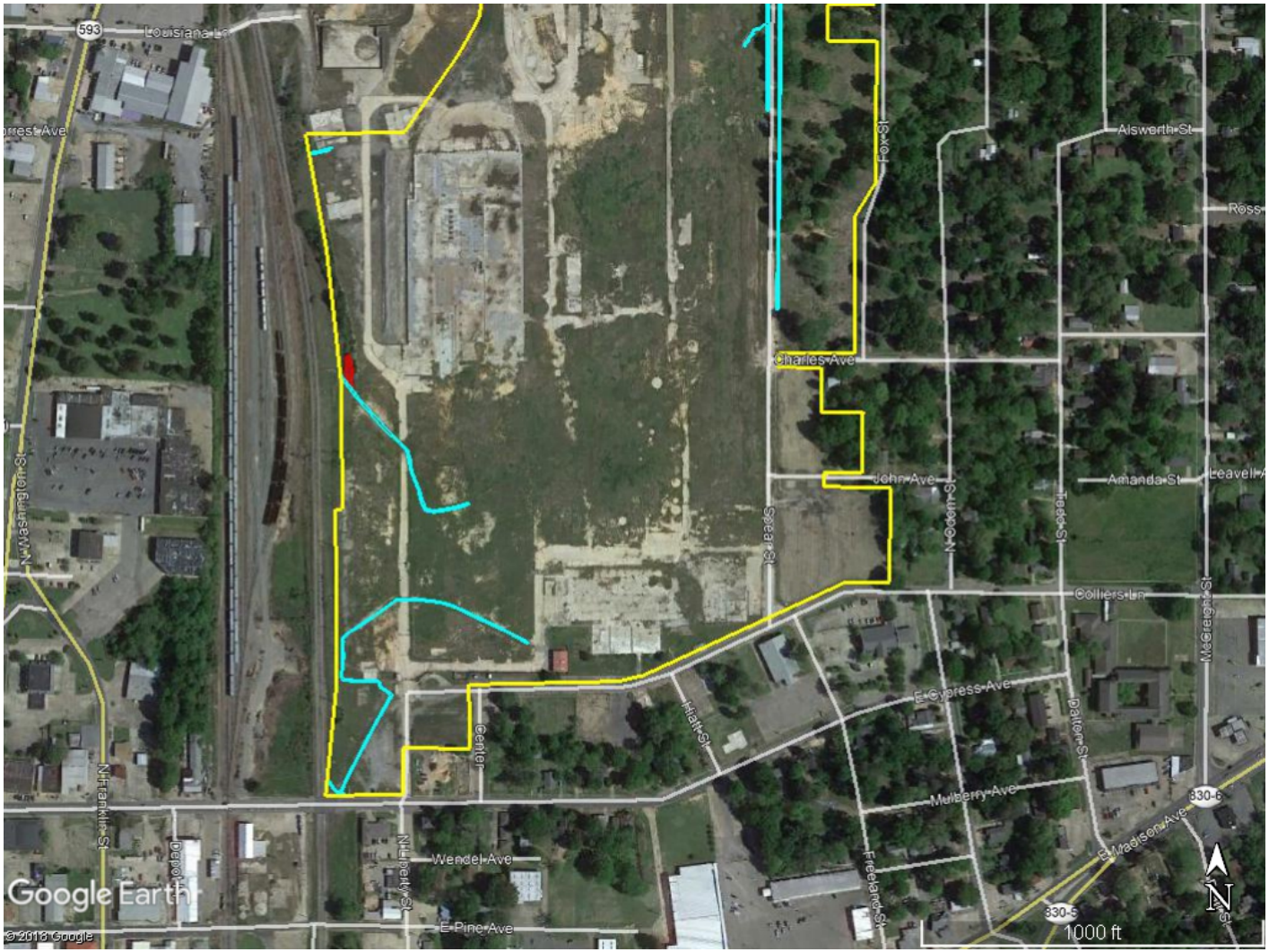


EXPLANATION

- Approximate Property Boundary
- Wetland Areas
- Other Waters of the U.S.
- Upland Areas

intertek psi

Figure 4-B
Wetlands and Other Waters of the U.S.
Northeast Louisiana Economic Alliance
Former IP "Louisiana Mill"
Bastrop, Louisiana
(Northern Portion)

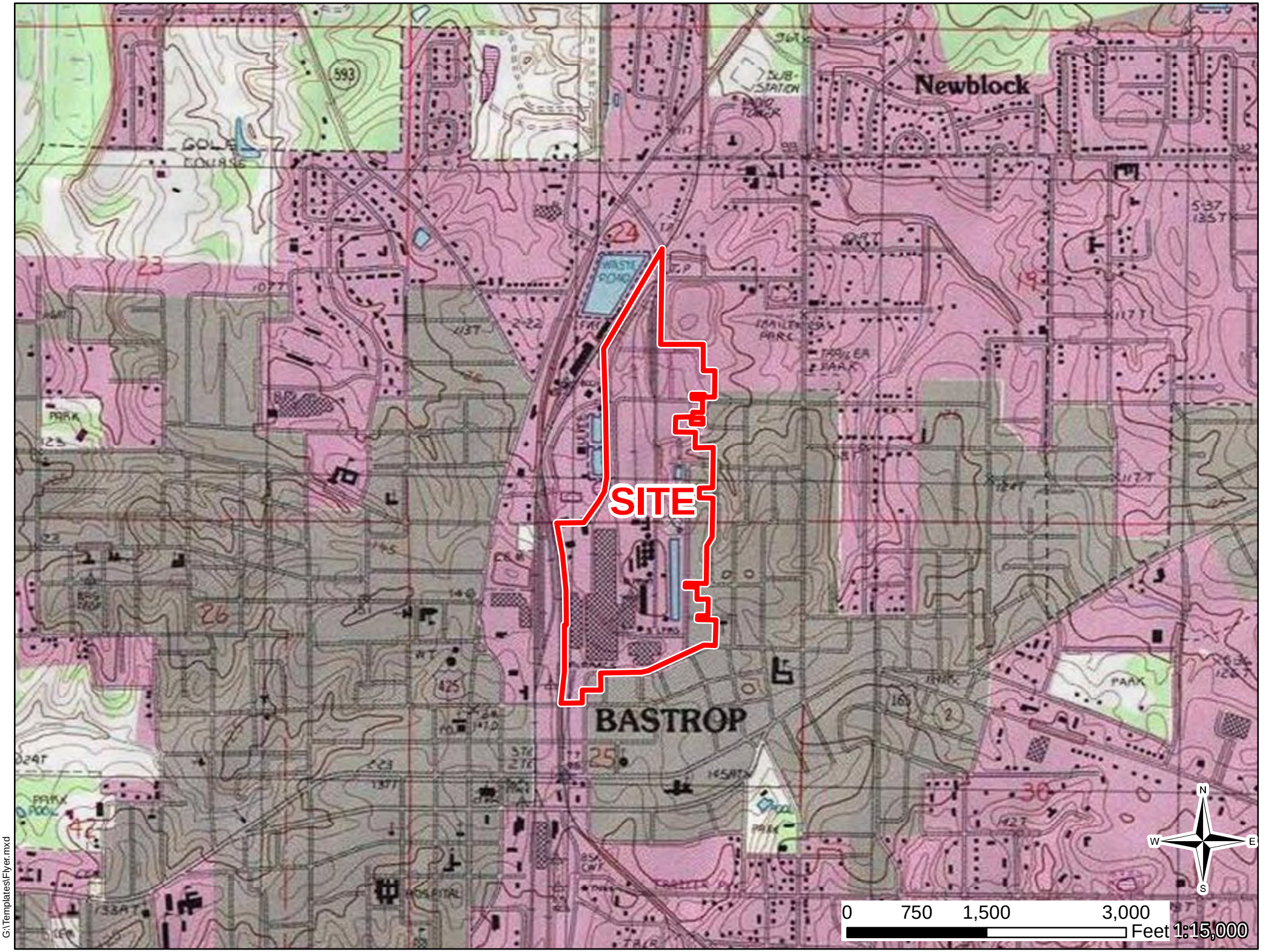


EXPLANATION

- Approximate Property Boundary
- Wetland Areas
- Other Waters of the U.S.
- Upland Areas

intertek psi

Figure 4-C Wetlands and Other Waters of the U.S. Northeast Louisiana Economic Alliance Former IP "Louisiana Mill" Bastrop, Louisiana (Southern Portion)



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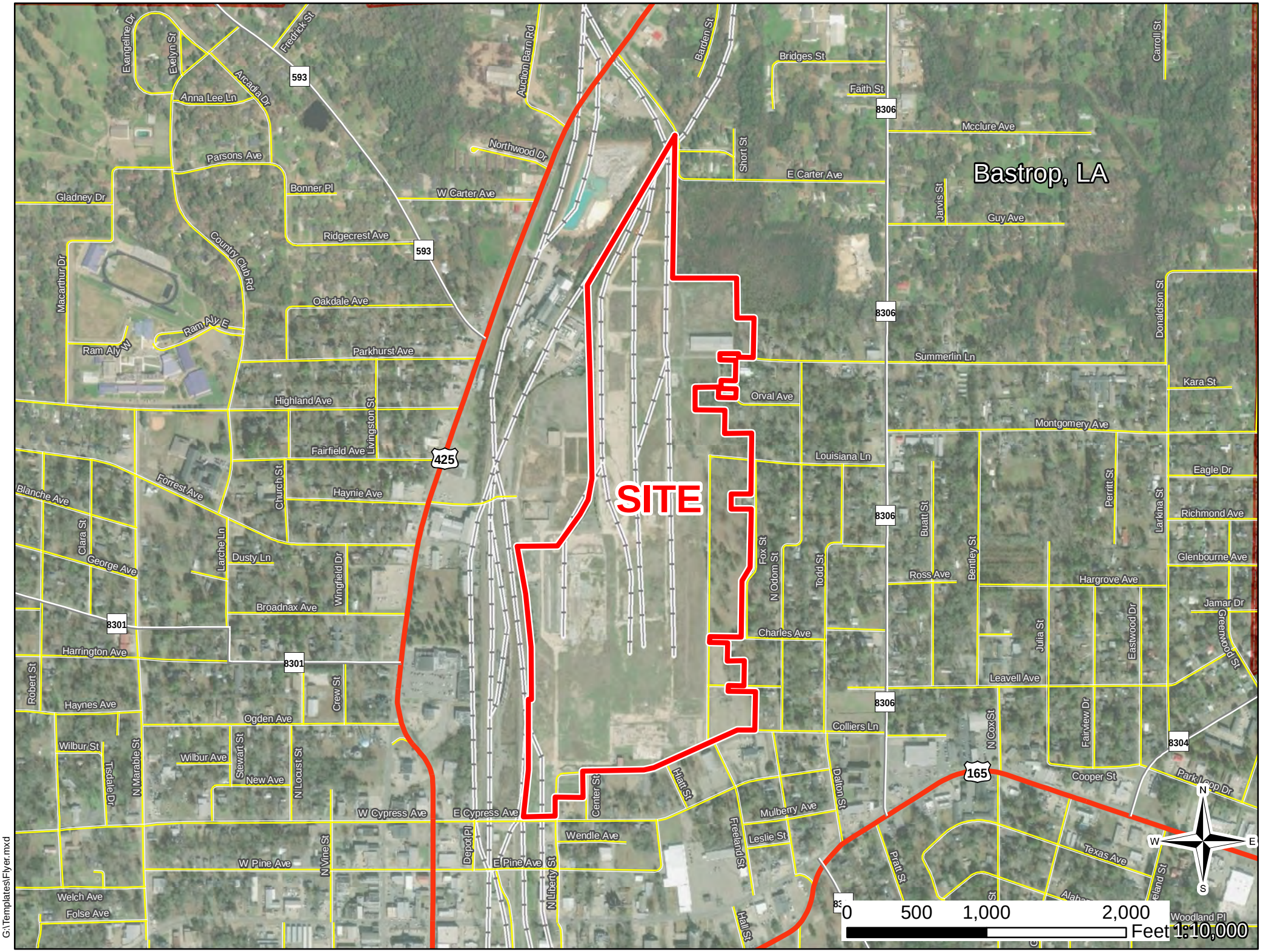

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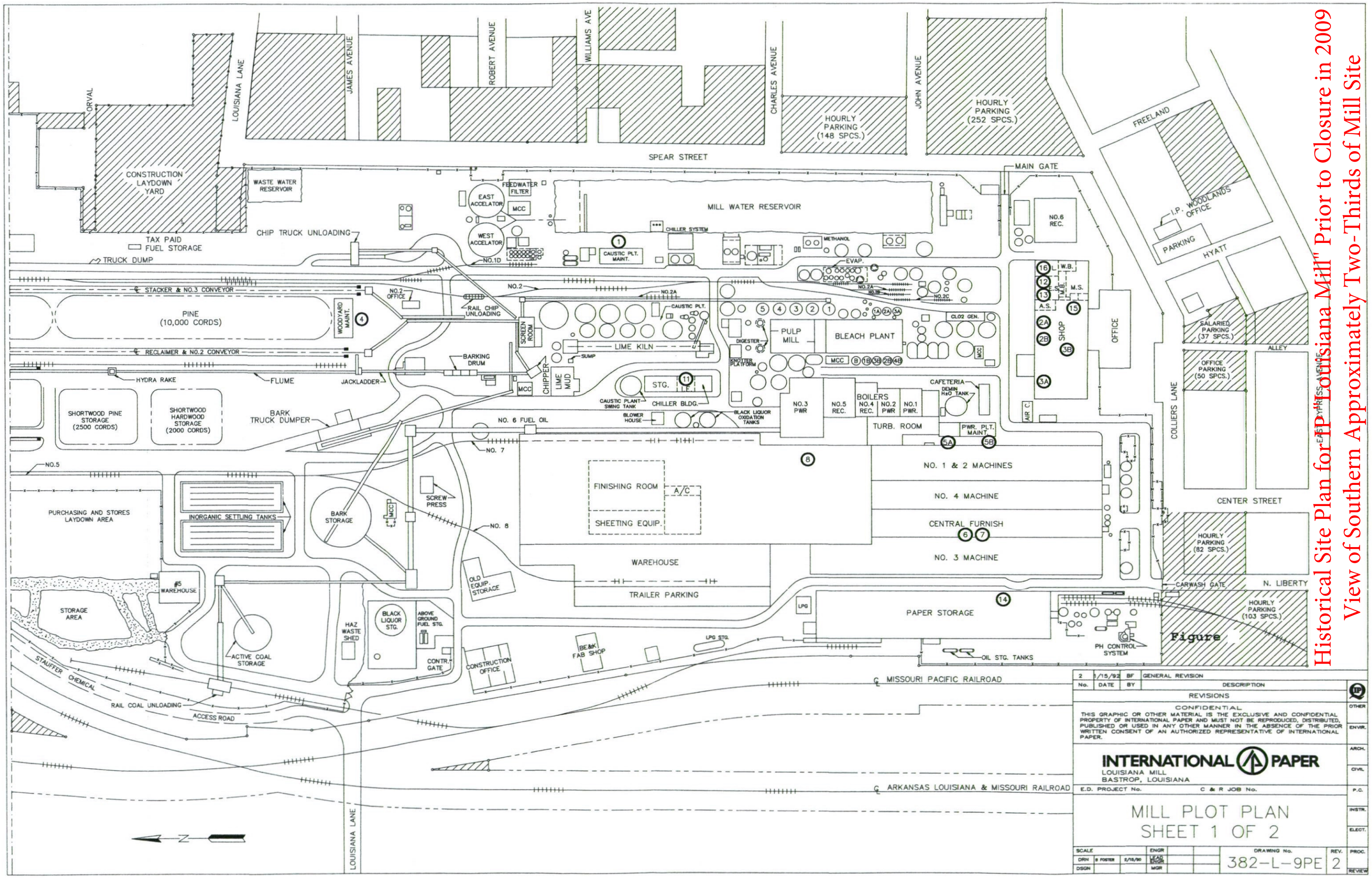
ORVAL
LOUISIANA LANE
JAMES AVENUE
ROBERT AVENUE
WILLIAMS AVE
CHARLES AVENUE
JOHN AVENUE
SPEAR STREET
HOURLY PARKING (148 SPCS.)
HOURLY PARKING (252 SPCS.)
FREELAND
I.P. WOODLANDS OFFICE
PARKING
HYATT
CONSTRUCTION LAYDOWN YARD
WASTE WATER RESERVOIR
MAIN GATE
NO.6 REC.
TAX PAID FUEL STORAGE
TRUCK DUMP
CHIP TRUCK UNLOADING
EAST ACCELATOR
WEST ACCELATOR
FEEDWATER FILTER
MCC
NO.1D
MILL WATER RESERVOIR
CHILLER SYSTEM
CAUSTIC PLT. MAINT.
METHANOL
EVAP.
STACKER & NO.3 CONVEYOR
NO.2 OFFICE
NO.2
NO.2A
NO.2B
NO.2C
RAIL CHIP UNLOADING
CAUSTIC PLT.
PINE (10,000 CORDS)
WOODYARD MAINT.
SCREEN ROOM
LIME KILN
SUMP
DIGESTER
KNOTTER PLATFORM
PULP MILL
BLEACH PLANT
CL02 GEN.
MCC
RECLAIMER & NO.2 CONVEYOR
BARKING DRUM
CHIPPER
LIME MUD
HYDRA RAKE
FLUME
JACKLADDER
STG.
CAUSTIC PLANT SWING TANK
CHILLER BLDG.
BLOWER HOUSE
BLACK LIQUOR OXIDATION TANKS
NO.3 PWR
NO.5 REC.
BOILERS NO.4 REC. NO.2 PWR NO.1 PWR.
CAFETERIA
DEMIN H2O TANK
TURB. ROOM
PWR. PLT. MAINT.
AIR C.
SHOP
OFFICE
SALARIED PARKING (37 SPCS.)
ALLEY
OFFICE PARKING (50 SPCS.)
COLLIERS LANE
SHORTWOOD PINE STORAGE (2500 CORDS)
SHORTWOOD HARDWOOD STORAGE (2000 CORDS)
BARK TRUCK DUMPER
NO. 6 FUEL OIL
NO. 7
NO.5
NO. 8
NO. 1 & 2 MACHINES
NO. 4 MACHINE
CENTRAL FURNISH
NO. 3 MACHINE
FINISHING ROOM
A/C
SHEETING EQUIP.
WAREHOUSE
TRAILER PARKING
CENTER STREET
HOURLY PARKING (82 SPCS.)
CARWASH GATE
N. LIBERTY
HOURLY PARKING (103 SPCS.)
PURCHASING AND STORES LAYDOWN AREA
INORGANIC SETTLING TANKS
BARK STORAGE
SCREW PRESS
#5 WAREHOUSE
STORAGE AREA
OLD EQUIP. STORAGE
HAZ WASTE SHED
BLACK LIQUOR STG.
ABOVE GROUND FUEL STG.
CONTR. GATE
ACTIVE COAL STORAGE
CONSTRUCTION OFFICE
BEAK FAB SHOP
LPG STG.
LPG
PAPER STORAGE
OIL STG. TANKS
PH CONTROL SYSTEM
STAUFFER CHEMICAL
RAIL COAL UNLOADING
ACCESS ROAD
LOUISIANA LANE
℄ MISSOURI PACIFIC RAILROAD
℄ ARKANSAS LOUISIANA & MISSOURI RAILROAD
N
Figure
Historical Site Plan for IP Louisiana Mill" Prior to Closure in 2009
View of Southern Approximately Two-Thirds of Mill Site
2 7/15/92 BF GENERAL REVISION
No. DATE BY DESCRIPTION
REVISIONS
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BASTROP, LOUISIANA
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C & R JOB No.
MILL PLOT PLAN
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SCALE
DRN B FOSTER 2/18/92
DSGN
ENGR
LEAD ENGR
MGR
DRAWING No. 382-L-9PE
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OTHER
ENVIR.
ARCH.
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P.C.
INSTR.
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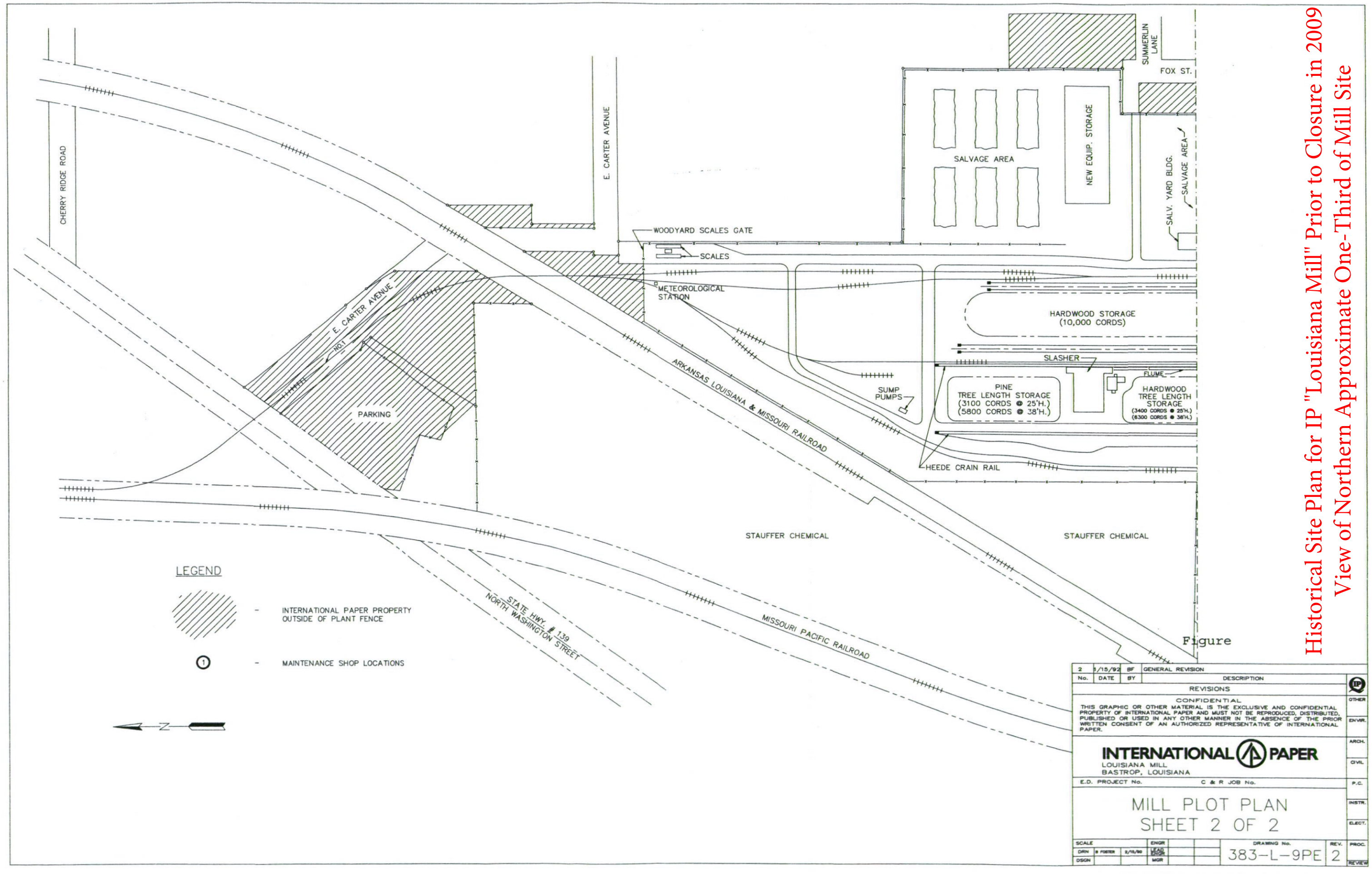


Figure

Historical Site Plan for IP "Louisiana Mill" Prior to Closure in 2009
View of Northern Approximate One-Third of Mill Site

APPENDIX A

SUBJECT PROPERTY PHOTOGRAPHS

1. Sample Location 1 – representative view of vegetation with water at ground surface

2. Sample Location 1 – representative view of vegetation

3. Sample Location 1

4. Sample Location 1

intertek psi	**Subject Property Photographs** **Former IP "Louisiana Mill" Site** **Bastrop, Morehouse Parish, Louisiana**	PSI Project No.: 02591767	
		Credit: JR	Date: 3/11/2019

5. Sample Location 1

6. Sample Location 1 – view of water infiltration in soil test pit

7. Sample Location 2 – representative view of vegetation looking west-northwest

8. Sample Location 2 – representative view of vegetation looking east-southeast

intertek psi	**Subject Property Photographs** **Former IP "Louisiana Mill" Site** **Bastrop, Morehouse Parish, Louisiana**	PSI Project No.: 02591767 Credit: JR | Date: 3/11/2019

9. Sample Location 2

10. Sample Location 2 – view of water infiltration in soil test pit

11. Sample Location 2

12. Sample Location 2

intertek psi	**Subject Property Photographs** **Former IP "Louisiana Mill" Site** **Bastrop, Morehouse Parish, Louisiana**	PSI Project No.: 02591767 Credit: JR | Date: 3/11/2019

13. Sample Location 3 – representative view of vegetation looking south-southwest

14. Sample Location 3 – representative view of vegetation looking north-northeast

15. Sample Location 3

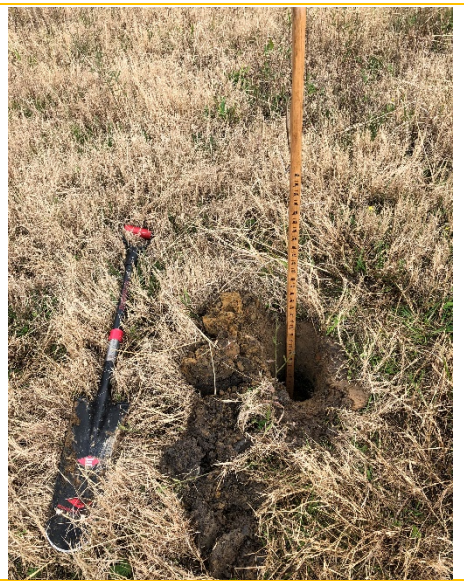
16. Sample Location 3

intertek psi	**Subject Property Photographs** **Former IP "Louisiana Mill" Site** **Bastrop, Morehouse Parish, Louisiana**	PSI Project No.: 02591767 Credit: JR | Date: 3/11/2019

17. Sample Location 3

18. Sample Location 3

19. Sample Location 4 – representative view of vegetation looking to west



20. Sample Location 4

intertek psi	**Subject Property Photographs** **Former IP "Louisiana Mill" Site** **Bastrop, Morehouse Parish, Louisiana**	PSI Project No.: 02591767 Credit: JR | Date: 3/11/2019

21. Sample Location 4

22. Sample Location 4

23. Sample Location 4

24. Sample Location 4 – view of water infiltration in soil test pit

intertek psi	**Subject Property Photographs** **Former IP "Louisiana Mill" Site** **Bastrop, Morehouse Parish, Louisiana**	PSI Project No.: 02591767 Credit: JR | Date: 3/11/2019

APPENDIX B

DESKTOP WETLAND REVIEW RESULTS:
NRCS SOIL SURVEY, USFWS NATIONAL WETLAND INVENTORY, FEMA FIRM PANEL

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Morehouse Parish, Louisiana

02591767-1 — Former IP Mill Site

March 11, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:8,610 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

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 1:24,000.

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:
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: Morehouse Parish, Louisiana
Survey Area Data: Version 12, Sep 12, 2018

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

Date(s) aerial images were photographed: May 14, 2014—Nov 19, 2017

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bs	Bussy silt loam, 1 to 5 percent slopes	115.6	94.5%
De	Debute silt loam, 3 to 8 percent slopes	6.6	5.4%
Gu	Guyton silt loam, 0 to 1 percent slopes	0.1	0.1%
Totals for Area of Interest		**122.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Morehouse Parish, Louisiana

Bs—Bussy silt loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: m3x3
Elevation: 50 to 200 feet
Mean annual precipitation: 41 to 59 inches
Mean annual air temperature: 54 to 77 degrees F
Frost-free period: 213 to 271 days
Farmland classification: Not prime farmland

Map Unit Composition

Bussy and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bussy

Setting

Landform: Terraces
Down-slope shape: Convex

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 35 inches: silt loam
H3 - 35 to 56 inches: silt loam
H4 - 56 to 65 inches: silt loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: About 35 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Unnamed, hydric

Percent of map unit: 20 percent
Landform: Drainageways
Hydric soil rating: Yes

De—Debute silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: m3x5
Elevation: 100 to 400 feet
Mean annual precipitation: 41 to 59 inches
Mean annual air temperature: 54 to 77 degrees F
Frost-free period: 213 to 271 days
Farmland classification: Not prime farmland

Map Unit Composition

Debute and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Debute

Setting

Landform: Terraces
Down-slope shape: Convex
Parent material: Thin mantle of loess over loamy southern coastal plains sediments

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 27 inches: silt loam
H3 - 27 to 70 inches: silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: About 27 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Unnamed, hydric

Percent of map unit: 15 percent
Landform: Drainageways

Hydric soil rating: Yes

Gu—Guyton silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2v9rf
Elevation: 20 to 200 feet
Mean annual precipitation: 47 to 64 inches
Mean annual air temperature: 59 to 72 degrees F
Frost-free period: 205 to 301 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guyton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guyton

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 4 inches: silt loam
Eg - 4 to 20 inches: silt loam
Btg/E - 20 to 51 inches: silty clay loam
Btg - 51 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.1 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D

Ecological site: Loamy Bottomland (F133BY017TX)
Hydric soil rating: Yes

Minor Components

Cahaba

Percent of map unit: 8 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Frizzell

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Wet Terrace (F133BY012TX)
Hydric soil rating: No

Guyton, ponded

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Loamy Bottomland (F133BY017TX)
Hydric soil rating: Yes

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Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

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Report—Hydric Soil List - All Components

Hydric Soil List - All Components–LA067-Morehouse Parish, Louisiana					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
Bs: Bussy silt loam, 1 to 5 percent slopes	Bussy	80	Terraces	No	—
	Unnamed-Hydric	20	Drainageways	Yes	2
De: Debute silt loam, 3 to 8 percent slopes	Debute	85	Terraces	No	—
	Unnamed-Hydric	15	Drainageways	Yes	2
Gu: Guyton silt loam, 0 to 1 percent slopes	Guyton	85	Terraces	Yes	2
	Cahaba	8	Stream terraces	No	—
	Frizzell	5	Terraces	No	—
	Guyton-Ponded	2	Terraces	Yes	2,3

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana
Survey Area Data: Version 12, Sep 12, 2018

U.S. Fish and Wildlife Service

National Wetlands Inventory

02591767-1 -- Former IP "Louisiana Mill" S

March 11, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

National Flood Hazard Layer FIRMette

FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/12/2019 at 5:12:36 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX C

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Former IP "Louisiana Mill" Site in Bastrop, LA City/County: Bastrop / Morehouse Sampling Date: 02-15-2019

Applicant/Owner: Northeast Louisiana Economic Alliance State: LA Sampling Point: 01

Investigator(s): Jens Aubin "J.A." Rummler, P.G. Section, Township, Range: Sec. 24, T21N, R5E, North of the Red River Land District of LA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-Concave (LC) Slope (%): 0-1

Subregion (LRR or MLRA): LRR O Lat: 32.789083 Long: -91.909167 Datum: WGS84

Soil Map Unit Name: Bussy Silt Loam, 1-5% slopes NWI classification: Palustrine Emergent (No previous classification for this site found in NWI)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____	
Water Table Present?	Yes X	No _____	Depth (inches): 18	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 19	**Wetland Hydrology Present?** Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location appeared to be in an area of ponding corresponding to the former "Hardwood Tree Length Storage" area of former IP "Louisiana Mill."

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 01

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft.)			
1. Andropogon glomeratus	65	Y	FACW
2. Rumex verticillatus	20	Y	FACW
3. Eleocharis palustris	75	Y	OBL
4. Axonopus fissifolius	40	Y	FACW
5. Hydrocotyle umbellata	20	N	OBL
6. Sorghum halepense	15	N	FACU
7.			
8.			
9.			
10.			
11.			
	235 = Total Cover		
50% of total cover: 117.5	20% of total cover: 47		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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.

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: 01

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5 YR 3/3	100					SaL	Topsoil with roots and some rocks
1-10	2.5 Y 4/4	75					SaCl	
10-19	2.5 Y 4/2	65	5 YR 2.5/1	35	C	M	SaCl	
19								Bottom of soil profile test pit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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 Mucky 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)**
- X 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Former IP "Louisiana Mill" Site in Bastrop, LA City/County: Bastrop / Morehouse Sampling Date: 02-15-2019

Applicant/Owner: Northeast Louisiana Economic Alliance State: LA Sampling Point: 02

Investigator(s): Jens Aubin "J.A." Rummler, P.G. Section, Township, Range: Sec. 24, T21N, R5E, North of the Red River Land District of LA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-Concave (LC) Slope (%): 0-1

Subregion (LRR or MLRA): LRR O Lat: 32.79025 Long: -91.9065 Datum: WGS84

Soil Map Unit Name: Bussy Silt Loam, 1-5% slopes NWI classification: Palustrine Emergent (No previous classification for this site found in NWI)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 13
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 18

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location appeared to be in a depression that was located in the "Salvage Area" of the former IP "Louisiana Mill."

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 02

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft.)			
1. Rumex verticillatus	75	Y	FACW
2. Axonopus fissifolius	20	N	FACW
3. Eutrochium fistulosum	45	Y	FACW
4. Hydrocotyle umbellata	55	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	195 = Total Cover		
50% of total cover: 97.5	20% of total cover: 39		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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.

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: 02

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5 YR 3/3	100					SaL	Topsoil with roots
2-14	2.5 Y 4/2	100					SaL	Metal washers present
14-18	2.5 Y 4/2	50	7.5 Y 4/6	50	C	M	SaL	Carbonized black woody debris
18								Bottom of soil profile test pit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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 Mucky 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)
- X 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Former IP "Louisiana Mill" Site in Bastrop, LA City/County: Bastrop / Morehouse Sampling Date: 02-15-2019

Applicant/Owner: Northeast Louisiana Economic Alliance State: LA Sampling Point: 03

Investigator(s): Jens Aubin "J.A." Rummler, P.G. Section, Township, Range: Sec. 24, T21N, R5E, North of the Red River Land District of LA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-Concave (LC) Slope (%): 0-1

Subregion (LRR or MLRA): LRR O Lat: 32.791306 Long: -91.908111 Datum: WGS84

Soil Map Unit Name: Bussy Silt Loam, 1-5% slopes NWI classification: Palustrine Emergent (No previous classification for this site found in NWI)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- X Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location appeared to be on rise adjacent to depression with wetland characteristics at base of hillslope.

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 03

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft.)			
1. Axonopus fissifolius	15	N	FACW
2. Trifolium repens	60	Y	FACU
3. Andropogon glomeratus	10	N	FACW
4. Sorghum halepense	45	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130 = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	125 (A)		470 (B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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.

Hydrophytic Vegetation Present? Yes ____ No X

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

SOIL

Sampling Point: 03

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5 YR 3/3	100					SaL	Topsoil with roots and furnace slag
1-20	10 YR 4/4	30	7.5 YR 7/6	15	C	M	SaL	
			7.5 YR 2.5/1	45	RM	PL	SaL	
			10 YR 7/2	10	D	M	SaL	
20								Bottom of soil profile test pit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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 Mucky 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)**
- X 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 Soils[3]:

- ___ 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)

[3]Indicators 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** X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Former IP "Louisiana Mill" Site in Bastrop, LA City/County: Bastrop / Morehouse Sampling Date: 02-15-2019

Applicant/Owner: Northeast Louisiana Economic Alliance State: LA Sampling Point: 04

Investigator(s): Jens Aubin "J.A." Rummler, P.G. Section, Township, Range: Sec. 24, T21N, R5E, North of the Red River Land District of LA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear-Concave (LC) Slope (%): 0-1

Subregion (LRR or MLRA): LRR O Lat: 32.790389 Long: -91.909083 Datum: WGS84

Soil Map Unit Name: Bussy Silt Loam, 1-5% slopes NWI classification: Palustrine Emergent (No previous classification for this site found in NWI)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____	
Water Table Present?	Yes X	No _____	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): _____	**Wetland Hydrology Present?** Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Location appeared to be in an area of ponding corresponding to former "Pine Tree Length Storage" area of former IP "Louisiana Mill."

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 04

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft.)			
1. Eutrochium fistulosum	60	Y	FACW
2. Axonopus fissifolius	35	Y	FACW
3. Hydrocotyle umbellata	25	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	135 = Total Cover		
50% of total cover: 67.5	20% of total cover: 27		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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.

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: 04

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5 YR 3/3	100					SaL	Topsoil with roots
2-10	10 YR 3/2	80	5 YR 5/6	20	RM	M	SaL	
10-19	10 YR 4/3	60	10YR 5/6	20	C	M	SaL	Black woody fragments
			10YR 5/2	20	D	M	SaL	
19								Bottom of soil profile test pit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ 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 Mucky 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)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- X 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks: