Exhibit FF. Ruston Industrial Park Wetlands Delineation Report

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CITY OF RUSTON

CSRS
IMAGINE SHAPE DELIVER

Ruston Industrial Park
Wetlands Delineation
Report

Wetland Delineation and Determination

Ruston Industrial Park Site
± 150.00 ac.

Lincoln Parish, Louisiana

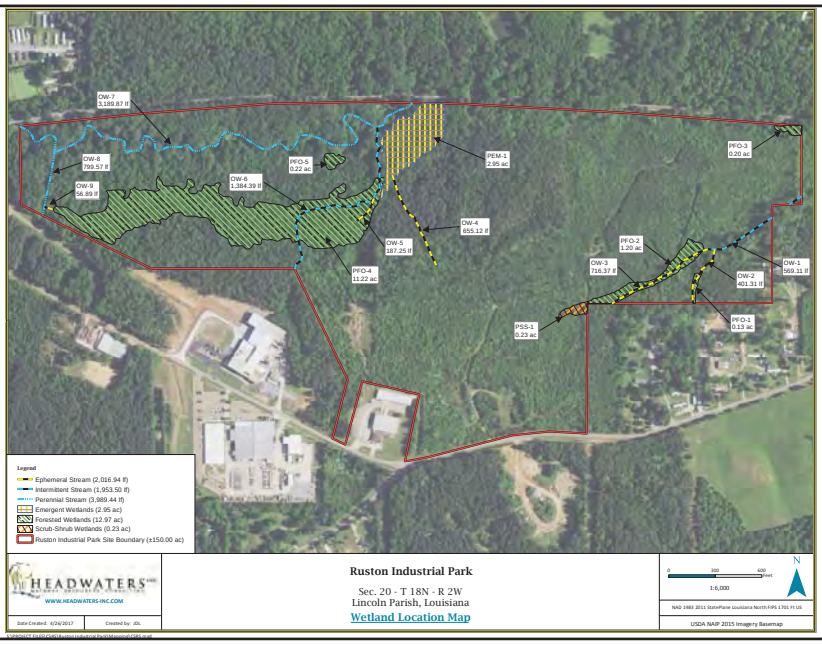
April 2017

HEADWATERS INC.
NATURAL RESOURCES CONSULTING

Wetlands Delineation Questionnaire

Site Name: Ruston Industrial Park Site

CSRS Project ID:



Date:	04/26/2017
Provider Name:	Headwaters, Inc.
Address:	P.O. Box 2836
City:	Ridgeland
State:	Mississippi

Zip Code:	39158
Name:	J. Clay Cromwell
Phone:	(601) 634-0097
Email:	Clay@headwaters-inc.com
Title:	Vice-President

Identify any bodies of water or wetlands on or abutting the site and identify the authority with jurisdiction over them.

Waterway/wetland 1	Forested Wetlands (PFO-1, PFO-2	Authority 1	USACE - Vicksburg District
Waterway/wetland 2	Emergent Wetland (PEM-1)	Authority 2	USACE - Vicksburg District
Waterway/wetland 3	Scrub - Shrub Wetland (PSS-1)	Authority 3	USACE - Vicksburg District
Waterway/wetland 4	Perennial Streams (OW-7 & OW-8)	Authority 4	USACE - Vicksburg District
Waterway/wetland 5	Intermittent Streams (OW-1 & OW-(	Authority 5	USACE - Vicksburg District
Waterway/wetland 6	Ephemeral Streams (OW-2, OW-3	Authority 6	USACE - Vicksburg District

Do wetlands and/or other waterways exist on or near the site? (•) Yes ( ) No

If wetlands are present, has a Section 404 Permit Application been submitted? ( ) Yes (•) No

Has a Section 404 Permit Application been approved? ( ) Yes (•) No

If wetlands are present, have all wetlands on site been mitigated? ( ) Yes (•) No

Submit Form

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INTRODUCTION

Headwaters, Inc. was retained by the City of Ruston to complete a wetlands delineation and determination on the proposed City of Ruston Industrial Park Site containing approximately ±150.00 acres located just east of the City of Ruston, Lincoln Parish, Louisiana. In general, the subject property is located south of U.S. Interstate 20 & U.S. Highway 80 and north of Beacon Light Road. More specifically, the subject parcel is located north of Beacon Light Road and McDonald Avenue, which are along south property boundary, and south of the Kansas City Southern Railway Company (KCS) mainline, which forms the northern property limits. The property is more particularly described as being located in a portion of Section 20, Township 18 North, Range 2 West, Lincoln Parish, Louisiana. The subject property can also be located by the Global Positioning System (GPS) Coordinates: N32.530003 – W92.594624.

Headwaters, Inc. completed the wetland delineation and determination site reconnaissance on April 10, 2017. The project was completed using standard accepted procedures for wetland delineation and determination as established by the U.S. Army Corps of Engineers (USACE).

The following report contains:

1) Methodology used for actual wetland determination;

2) A site description, including the observed ecological processes occurring on site; and

3) Conclusions drawn from this study.

Appendices included are an integral and inseparable part of this report and are listed as **I**) copies of a general location map, portions of the U.S.G.S. *Ruston, Louisiana* Quadrangle Map, 1996 NASA NAPP Color Infrared Photograph and a copy of the U.S. Department of Agriculture-Farm Service Agency (USDA-FSA) National Agricultural Imagery Program (NAIP) 2015 photograph of the subject property; **II**) copies of the property site map showing the location of the wetland areas and "other waters of the United States", Global Positioning System (GPS) waypoint locations and wetland data point locations; **III**) completed copies of the U.S. Army Corps of Engineers Atlantic and Gulf Coastal Plain Region Wetland Determination Data Forms from the Regional Supplement to the Corps of Engineers Wetland Delineation Manual (Version 2.0) November 2010, including field notes; **IV**) a copy of the Lincoln Parish, Louisiana Soils Survey Map and related information; and **V**) Photographs of selected property features.

METHODOLOGY

The overall goal of this project was to complete a comprehensive property review and assessment of all appropriate wetland features associated within the boundaries of the property. The primary project scope was the delineation and determination of "other waters of the U.S." and wetland areas associated with the property. Upon request by the landowner, concurrence of the wetland determination by the Regulatory Program of the Vicksburg District, U.S. Army Corps of Engineers can be completed.

The initial phase of the project included assimilation of all available information related to the property that would help establish a historical perspective of the property and surrounding area as well as to highlight the physical attributes of the property, the primary drainage patterns and the physical location of the suspected wetland areas and "other waters of the U.S." present on the property. An integral component of this phase was the review of the 1996 NASA NAPP Color Infrared photographic coverage of the subject property and the USDA-FSA NAIP 2015 color photograph (Appendix I). Review of the U.S.G.S. topographic maps (Appendix I) and the Lincoln Parish, Louisiana soil survey maps (Appendix IV) were also included as a part of this phase, as well as interviews with persons knowledgeable of the subject property.

Once the key physical aspects of the property were identified, a field review and assessment was conducted to identify the habitat or land use types present. A primary focus of this initial field assessment was to verify the presence of the drainage patterns and other potential wetland areas identified from the aerial photographs and topographic maps covering the subject property.

Based upon observations made during the field review, the land use of the subject property can best be currently described as a predominantly forested habitat that has historically been utilized for timber production purposes. The central portion of the subject property was comprised of a cut-over habitat due to recent timber harvesting activities. The western portion of the site can be described as a predominantly mixed pine / bottomland hardwood forested habitat. The eastern portion of the site contained much more pine forested habitat, with portions of it appearing to be comprised of short rotation pine plantation habitat. Significant pine regeneration was observed in portions of the site east of the cut-over habitat. The initial field assessment revealed that the majority of the subject property is currently occupied by a palustrine forested upland (non-wetland) habitat comprised of a mixed pine / bottomland hardwood and pine forested habitat, as previously described. However, portions of the subject property within the depressional habitats and areas of lower elevation with little topographic relief exhibited the necessary requirements (hydrology, vegetation, and soils) to be considered as potentially jurisdictional wetland habitats under the current regulatory framework. The potentially jurisdictional wetland complexes observed within the subject property were comprised of forested, scrub-shrub, and emergent subclasses. In addition to the wetland habitats observed, several streams and storm water conveyance features were observed within the subject property. The primary drainage feature within the subject property is a perennial stream channel observed meandering along the northern property boundary within the western half of the subject property. This perennial stream is an unnamed tributary of

Choudrant Creek, located to the east the subject property. In addition to the perennial stream channel, several secondary drainage features considered as intermittent and ephemeral stream channels were observed within the subject property. These stream channels provide a secondary source of storm water runoff from within the subject property. The natural topographic setting of the subject property conveys storm water generally to the north, northeast towards the unnamed tributary of Choudrant Creek via the secondary drainage features and overland sheet flow across the steep slopes of the landscape observed. The wetland habitats and the various stream channels observed within the limits of the subject property would be considered as "other waters of the U.S." and potentially jurisdictional under the currently regulatory framework of the Regulatory Division of the U.S. Army Corps of Engineers (USACE) – Vicksburg District. Coordination with the USACE – Vicksburg District would be required prior to the any adverse impacts from anticipated site development activities within the depicted potentially jurisdictional habitats.

Given the characteristics and general topographic setting of the western half of the subject property, systematic transect lines were employed in the field delineation methodology in the western portion of the site. Systematic transect lines throughout the western portions of the subject property were established as verification of the known and/or suspected wetland areas or "other waters of the United States" and to confirm the presence of the non-wetland habitat types transition lines. The eastern half of the subject property did not require systematic transects to be established due to the geographic positioning and layout of the habitats. Rather, the field delineation was established by surveying the areas within natural topographic features and areas of relatively little to no topographic relief, which are characteristically where jurisdictional habitats are observed in a landscape setting similar to the subject property at hand. A mapping system was employed whereby all the wetland habitats/boundaries and "other waters of the United States" were mapped on a property site map utilizing the GPS waypoints. The specific location of these wetland habitats/boundaries and "other waters of the United States" were verified on the site topographic maps and the NAIP color photography.

Wetland delineation points were established using a systematic approach based upon spacing between points, observations of vegetative and topographic features, and transitions that were encountered in the field. The delineation points were spaced to insure adequate coverage of each of the predominant habitat types and the various habitat types within each of the predominant types. In some cases, as needed, wetland delineation points were randomly established at wetland/upland transitions that were encountered, or to prove out observed characteristics. Additionally, wetland delineation data points were also established to help validate the data within the non-wetland areas, and to aid in the field mapping of the wetland areas and "other waters of the United States". In addition, supplemental points were established between the delineation points to provide data on soils, vegetation and hydrology. A total of forty-eight (48) data points were identified throughout the project site.

At each delineation point, specific observations and determinations were made using accepted U.S. Army Corps of Engineers' techniques for the delineation of wetland habitats and/or boundaries [Environmental Laboratory, 1987, Corps of Engineers' ***Wetlands Delineation Manual*** (and Supplemental Guidance), Technical Report Y-87-1,

U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi]. Soil samples were taken using either a soil probe or hand auger to a minimum depth of twelve (12) inches. Munsell Color Charts were used to reference soil matrix, mottle and hue. In addition, representative vegetative characteristics in the general locale of each point were identified and recorded. Hydrologic characteristics were noted at each plot location and a determination was made in the field as to whether or not the area was a non-wetland, wetland or "other waters" habitat. All observations were documented on the U.S. Army Corps of Engineers Atlantic and Gulf Coastal Plain Region Wetland Determination Data Forms from the referenced Regional Supplement to the Corps of Engineers Wetland Delineation Manual (Version 2.0) November 2010.

Site maps depicting the location of the suspected jurisdictional wetland areas, "other waters of the United States", upland habitats and/or land use types determined to be present on the property, as well as the location of the GPS/wetland delineation points is included as Appendix II. Copies of the corresponding data forms completed for each sample location are also included as Appendix III.

SITE DESCRIPTION AND ECOLOGICAL PROGRESSION

The proposed site, which has heretofore been described according to physical and geographic location, is hereinafter described according to wetland classification, disturbance patterns, wetland quality and soils. Descriptions will be in general terms, and without specific chronology.

WETLAND CLASSIFICATIONS: Wetlands are typically defined by plants, soils and frequency and duration of flooding. The term "system" is used to describe the broad complex of interrelated components that define the ecological limits of a particular ecosystem. The dominant type of suspected jurisdictional wetlands located on the subject property can best be described as a Palustrine System with a forested class/subclass. There were also subclass scrub / shrub and emergent wetland habitats observed within the subject property. Also, site reconnaissance activities revealed the presence two (2) perennial streams, two (2) intermittent streams, and five (5) segments of ephemeral streams. These habitats and streams are described in detail below.

Palustrine Forested Wetland Habitat (PFO) – The field reconnaissance revealed the presence of five (5) forested wetland habitats within the limits of the subject property. PFO-1, PFO-2, & PFO-3 were identified within the eastern half of the property, predominantly along the top-banks of the intermittent and ephemeral stream channels. Evidence supports that these habitats are recharged during heavy rain events and the flooding of the adjacent stream channels. Impediments within the natural drainage features also assist in increasing the hydrology within these forested wetland habitats. In addition to the forested wetland habitats observed within the eastern half of the site, PFO-4 & PFO-5 were identified within the western portion of the site. PFO-4 is a large wetland complex associated with the perennial stream floodplain and PFO-5 is a micro-habitat along the top-bank of the perennial stream. PFO-4 is located between the upland (non-wetland) top-bank forested habitat and the ridge observed along the southern limits of the site. Both PFO-4 & PFO-5 are influenced from regular flooding events from the adjacent perennial stream and storm water flows from the adjacent areas of higher elevation.

Hydrology indicators observed within the forested wetland habitats include inundation, saturation, high water table, water marks, water-stained leaves, sediment deposits, drift lines, crawfish burrows, drainage patterns, and oxidized rhizospheres along living roots. Vegetative components within the forested wetland habitats include: Green ash (*Fraxinus pennsylvanica*), willow oak (*Quercus phellos*), water oak (*Quercus nigra*), loblolly pine (*Pinus taeda*), cherrybark oak (*Quercus pagoda*), American elm *(Ulmus americana),* sweetgum (*Liquidambar styraciflua*), shagbark hickory (*Carya ovata*), cow oak (*Quercus michauxii*), red maple (*Acer rubrum*), buttonbush (*Cephalanthus occidentalis*), black willow (*Salix nigra*), privet (*Ligustrum sinense*), Chinese tallowtree (*Triadica sebifera*), *Cyperus spp*., dwarf palmetto (*Sabal* minor), lamp rush (*Juncus effusus*), *Polygonum spp*., and switch cane (*Arundinaria tecta*), among others.

The soils matrix colors within the forested wetland habitats ranges from a 4/1(dark gray), 5/1, 6/1 (gray) to a 5/2 (grayish brown), 6/2 (light brownish gray) on the 10YR Munsell Soil Color chart. There is a soil mottle present at (~15% - 35%) with a soil mottle color

ranging from a 4/4, 4/6 (dark yellowish brown) to a 5/6, 5/8 (yellowish brown) on the 10YR chart to 5/6 (strong brown) on the 7.5YR chart. Redox concentrations and depleted matrix were observed within the soil profile within the top 12 inches. These forested wetland habitats (PFO-1, PFO-2, PFO-3, PFO-4, & PFO-5) are depicted on the wetland location exhibits included within Appendix II.

Palustrine Scrub - Shrub Wetland (PSS) – The field reconnaissance determined that a portion of the site was comprised of a scrub – shrub wetland habitat. PSS-1 was observed within the eastern portion of the site along the west side of an existing logging road. The logging road has impeded that natural flows in this area causing this are to become inundated. Scrub – shrub vegetative components were observed within and along fringe of the impounded area. Hydrology indicators within PSS-1 included inundation, saturation, drainage patterns, water-stained leaves, crawfish burrows, sediment & drift deposits, and oxidized rhizospheres along living roots. Vegetative components observed within this wetland habitat included black willow (*Salix nigra*), water oak (*Quercus nigra*), loblolly pine (*Pinus taeda*), willow oak (*Quercus phellos*), Chinese tallowtree (*Triadica sebifera*), buttonbush (*Cephalanthus occidentialis*), lamp rush (*Juncus effusus*), marsh flat sedge (*Cyperus pseudovegetus*), bushy blue stem (*Andropogon virginicus*), wool grass (*Scirpus spp.)., Polygonum spp*., and red vine (*Brunnichia cirrhosa*) among others. The soils observed within PSS-1 were similar in nature to those described above that were observed in the forested wetland habitat. This scrub - shrub wetland habitat (PSS-1) is depicted on the wetland location exhibits included within Appendix II.

Palustrine Emergent Wetland (PEM) – As previously mentioned, the central portion of the subject property contained a cut-over type habitat from the recent timber harvest activities. A portion of this cut-over habitat within northern portion of the site was identified as an emergent wetland habitat (PEM-1). PEM-1 contained the necessary characteristics to be considered as a potentially jurisdictional emergent wetland habitat. As with the forested wetland habitats in the western portion of the site, PEM-1 is influenced from potential flooding events from the adjacent perennial stream. Hydrology indicators observed within this emergent wetland habitat included inundation, saturation, sediment deposits, drift lines, crawfish burrows, drainage patterns, and oxidized rhizospheres along living roots. Herbaceous hydric vegetative components have re-established since the timber harvest activities and include: lamp rush (*Juncus effusus*), *Carex spp*., marsh flat sedge (*Cyperus pseudovegetus*), Chinese tallow tree regeneration (*Triadica sebifera*), sweetgum regeneration (*Liquidambar styraciflua*), butter cup (*Ranunculus spp*.), red maple regeneration (*Acer rubrum*), wool grass (*Scirpus spp*.), *Polygonum spp*., *Aster spp*., goldenrod (*Solidago spp*.), lizard's tail (*Saururus cernuus*), and red vine (*Brunnichia cirrhosa*) among others.

The soils matrix colors within the emergent wetland habitat ranges from a 4/1 (dark gray) to a 5/2 (grayish brown) on the 10YR Munsell Soil Color chart. There is a soil mottle present at (~15% - 35%) with a soil mottle color ranging from a 4/4, 4/6 (dark yellowish brown) to a 5/6, 5/8 (yellowish brown) on the 10YR chart. Redox concentrations and depleted matrix were observed within the soil profile within the top 12 inches. This emergent wetland habitat (PEM-1) is depicted on the wetland location exhibits included within Appendix II.

Perennial Stream – The field reconnaissance revealed the presence of two (2) segments of perennial streams (OW-7 & OW-8) meandering along the northern and western limits within the northwest portion of the subject property. Both perennial streams would be considered as unnamed tributaries of Choudrant Creek, which is located east of the subject property. OW-7 enters the property in the northwest corner and meanders within the northern limits of the site before flowing north under the KCS mainline. OW-7 is a natural, meandering perennial stream channel that does not appear to have undergone any major disturbances through the years. OW-8 enters the subject property in the southwest corner from the south and merges with OW-7 in the northwest portion of the site. OW-7 is a straight-lined perennial channel that appears to have undergone significant maintenance and drainage improvements over the past several years. A spoil bank from excavated material was observed along the top-bank of this channel. These channels provide the primary source of storm water relief for storm water within the subject property. The perennial streams may be characterized by well-defined stream channels with the overall lack of significant vegetative components within the channel. The perennial streams maintained an upland (non-wetland) forested top-bank habitat, which is typical for streams of this type. More specifically, this stream channel exhibits year-round flows or perennial flows throughout the year. The presence of the perennial stream within and adjacent to the site would be considered as "other waters of the United States". The locations and alignments of these perennial streams are depicted on the wetland location maps (Appendix II).

Intermittent Stream – Two (2) segments of unnamed tributaries considered as intermittent streams (OW-1 & OW-6) were identified meandering through the subject property. These tributaries provide the primary source of storm water runoff from within the portions of the site in which they were identified. The intermittent streams within the subject property convey storm water generally to the north and northeast. These streams may be characterized as well defined channels with the overall lack of any significant vegetative components within the stream channel. In some instances, hydrophytic vegetative components have established within the banks of the stream channel. This is due primarily from disturbances that have taken place on the site and insignificant interruptions with the channels disrupting the natural flows of the channels. The presence of the intermittent streams identified within the limits of the project site would be considered as "other waters of the United States." The locations and alignments of these intermittent streams are depicted on the wetland location maps (Appendix II).

Ephemeral Stream - Segments of five (5) ephemeral streams (OW-2, OW-3, OW-4, OW-5, & OW-9) were identified transecting portions of the property. These tributaries provide the secondary source of storm water runoff from within the subject property. These drainage features may be characterized by shallow stream banks with the overall lack of significant vegetative components within the channel. Some of these drainages were observed within a forested wetland top-bank habitat, while others were observed as maintaining an upland (non-wetland) forested habitat. The presence of the ephemeral streams identified within the limits of the project site would be considered as "other waters of the United States." The locations and alignments of these ephemeral streams are depicted on the wetland location maps (Appendix II).

Upland (Non-Wetland) Habitat - The remaining portions of the subject property are comprised of an upland (non-wetland) forested and cutover habitat that has historically been utilized for timber production and recreational hunting purposes. The upland forested habitats are comprised of mixed hardwood and pine species. Common vegetative components identified within the upland (non-wetland) portions of the subject property include loblolly pine (*Pinus taeda),* sweetgum (*Liquidambar styraciflua),* water oak (*Quercus nigra),* hickory (*Carya spp.),* white oak *(Quercus alba),* Eastern red cedar *(Juniperus virginiana),* cherrybark oak (*Quercus pagoda*), American beech (*Fagus grandifolia*), Eastern hophornbeam *(Ostyra virginiana),* southern red oak (*Quercus falcata*), winged elm (*Ulmus alata)*, black cherry (*Prunus serotina*), *Solidago spp*., common privet (*Ligustrum sinense*), winged elm (*Ulmus alata*), *Vaccinium spp*., American beautyberry (*Callicarpa americana*), southern dewberry (*Rubus trivialis*), buckeye (*Aesculus spp*.), sassafras (*Sassafras albidum*), *Smilax spp*., poison ivy (*Toxicodendron radicans*), mayapple (*Podophyllum peltatum*), muscadine vine (*Vitis rotundifolia*), among others. These species, among others identified within the site, are commonly found within upland (non-wetland) conditions on similar landscapes.

The soil conditions observed within the project site ranged from a 4/4 (dark yellowish brown) to a 5/3 (brown), 5/4, 5/6 (yellowish-brown) on the 10YR page of the Munsell Soil Color Chart. Limited to no soil mottling was observed within the upland forested habitats. Given this, the soil conditions observed within these portions of the subject property would be considered upland (non-wetland) in nature.

Disturbance Patterns – The site currently exhibits a forested and cut-over habitat throughout the preponderance of the property that has been historically utilized for timber production purposes. Silvicultural activities within the site have created minor disturbances or alterations within the site's hydrology. However, no major site disturbances were observed, specifically within the potentially jurisdictional areas other than evidence of timber harvest activities. The overall aquatic functions, flow regime, and sediment / nutrient transport activities within the wetland habitats and stream channels have remained relatively undisturbed through the years.

Wetland Quality – While some quality wetland functions occur within the subject property, associated natural processes could seemingly contraindicate any description as a "flow through" wetland system. For the most part, the wetland functions on the property are related to the storm water flowing as sheet flow across the parcel from adjacent properties and frequent flooding events from the adjacent stream channels. Certainly, significant ground water recharge occurs within this site, and it is suspected that a certain amount of water quality enhancement, via filtration, also occurs. The subject property is not in a geographic location for primary aquifer recharge.

Soils – As evidenced by the topographic map and the USDA-NRCS Custom Soil Resource Report for Lincoln Parish, Louisiana, the subject property predominantly consists of a forested habitat. The soil types present within the subject property are Angie very fine sandy loam, Darley gravelly fine sandy loam, Darley-Sacul association, Guyton-Ouachita silt loams, and Sacul very fine sandy loam. These soil types are described in detail within that attached soil report.

Copies of the Lincoln Parish, Louisiana Soil Survey Maps and Custom Soil Resource Report covering the subject property are included in Appendix IV.

FINDINGS AND CONCLUSIONS

From the historic review and wetland assessment completed on the subject property, it is concluded that the property is generally representative of the geographic area in which it is located. The topography of the site is very similar in nature to the adjoining properties and the overall geographic area in which it is located. Based upon observations made during the field review, the land use of the subject property can best be currently described as a predominantly forested and cut-over habitat that was historically comprised of mixed hardwood and pine forest type utilized for timber production purposes.

The property is predominately occupied by a forested and cut-over upland (non-wetland) habitat type with smaller portions being contained within potentially jurisdictional wetland habitats with subclasses of forested, scrub – shrub, and emergent. In addition to the wetland habitats identified within the site, several stream channels and drainage features were observed within site. The significance of the forested wetlands on the subject property exists in a mixed pine / bottomland hardwood forested wetland habitat type. These wetland habitats, along with the identified stream channels would likely be considered jurisdictional under the current USACE regulatory framework.

The following is a breakdown of the different habitat types and approximate acreage and length of each that were found to be present on the subject property:

Forested Wetlands (PFO)..... 12.97 ac.

Scrub – Shrub Wetlands (PSS) ..... 0.23 ac.

Emergent Wetlands (PEM) ..... 2.95 ac.

Perennial Streams..... 1.83 ac. (3,989.44 lf)
"Other Waters of the U.S."

Intermittent Streams..... 0.36 ac. (1,953.50 lf)
"Other Waters of the U.S."

Ephemeral Streams ..... 0.19 ac. (2,016.94 lf)
"Other Waters of the U.S."

Upland (Non-Wetland) Habitat..... 131.47 ac.

TOTAL: .....±150.00 Ac.

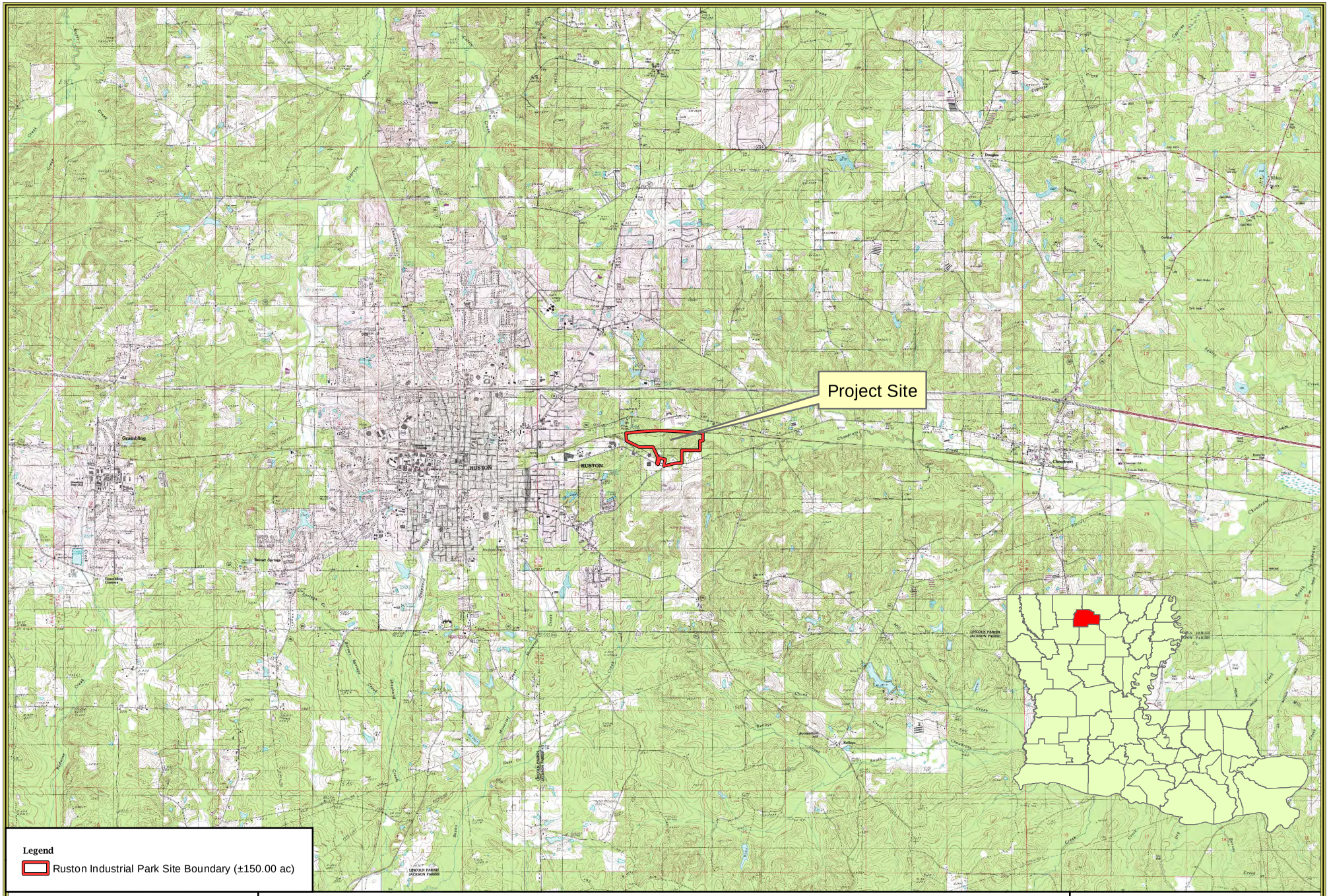
This listing does not depict the impacts anticipated by the development of the project. This listing only depicts the habitat types identified within the subject property and the acres they account for. Further coordination with the U.S. Army Corps of Engineers – Vicksburg District will be required prior to any site development activities within the potentially jurisdictional wetlands and "other waters of the U.S." to obtain the appropriate Section 404 wetland permit authorizations.

APPENDIX I

- General Location Map

- U.S.G.S. *Ruston, Louisiana* Quadrangle Map

- USDA NAIP 2015 Color Photography



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Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

General Location Map

0 5,000 10,000 Feet

1:100,000

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NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Ruston (LA) Quad Basemap

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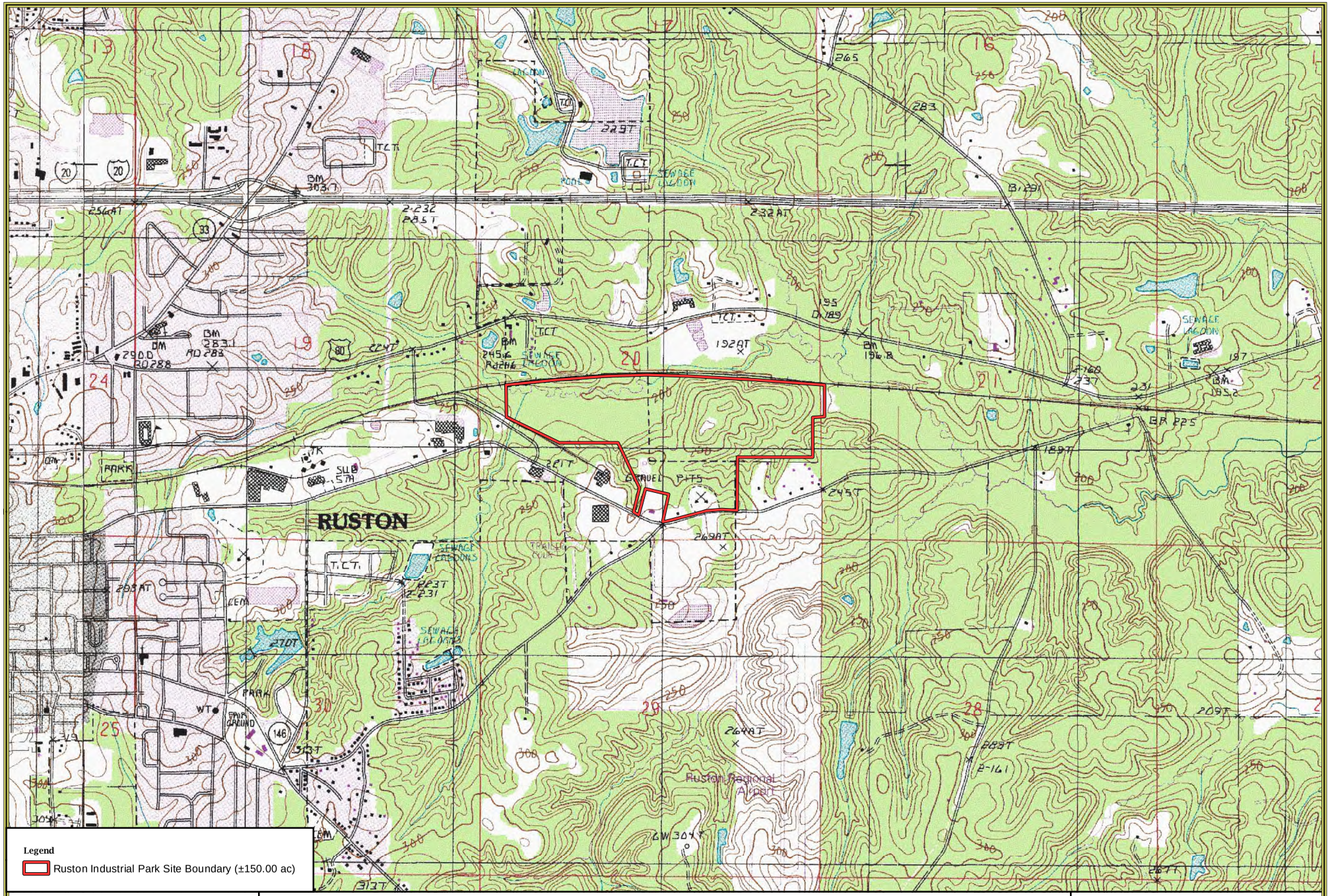

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Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

Site Location Map

0 1,200 2,400 Feet

1:24,000

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NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Ruston (LA) Quad Basemap

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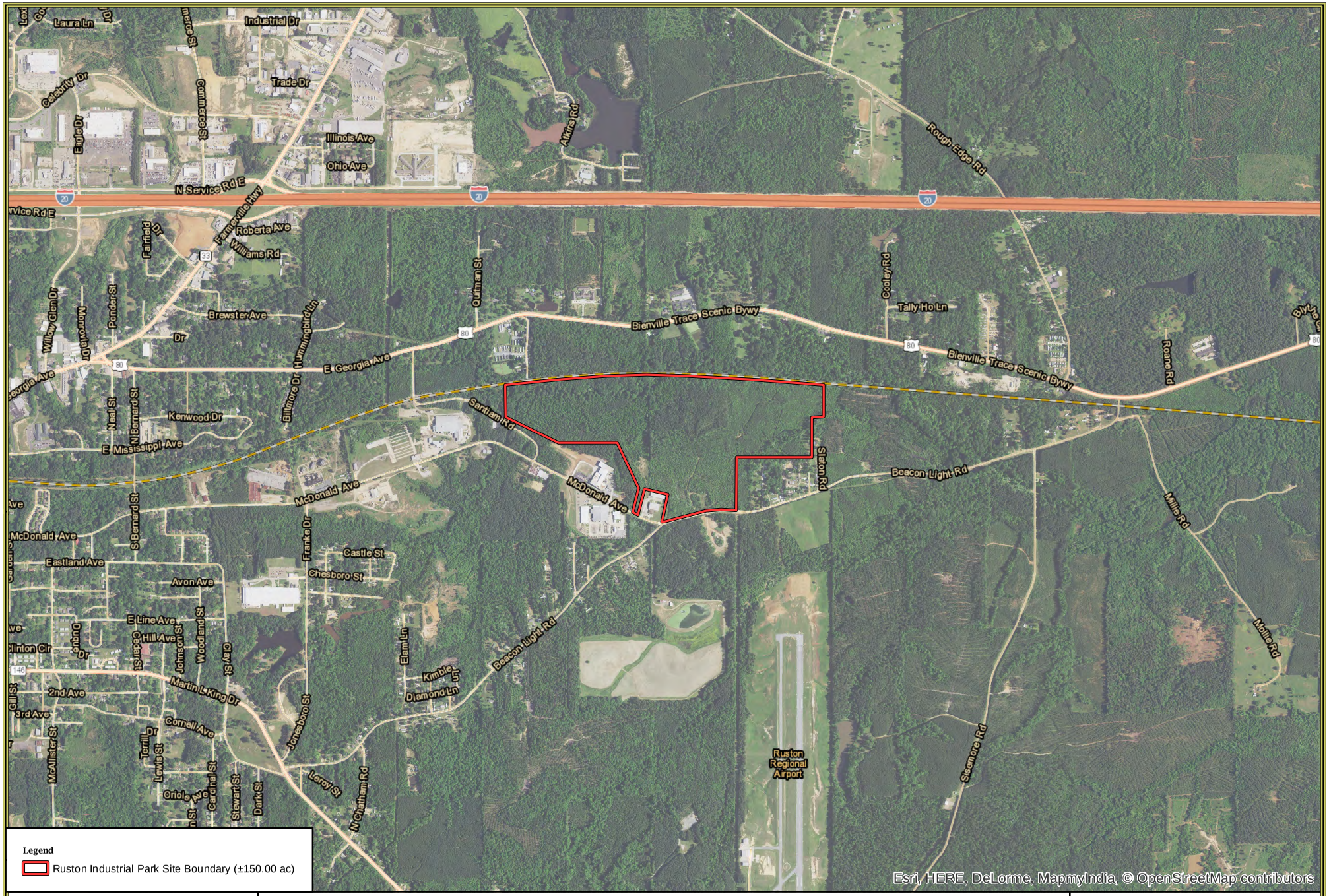

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Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

Site Location Map

0 1,200 2,400 Feet

1:24,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2015 Imagery Basemap

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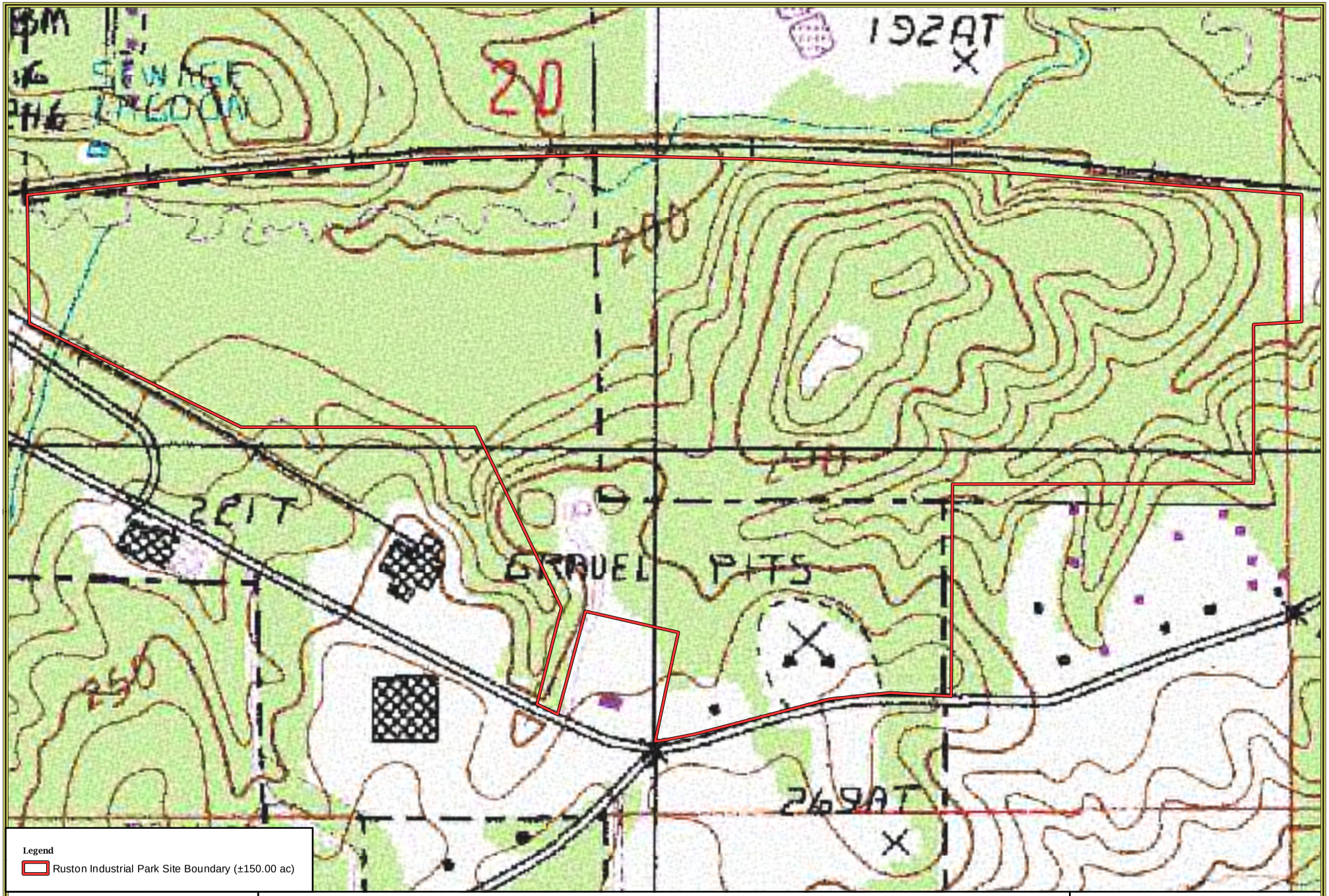

Legend

Ruston Industrial Park Site Boundary (±150.00 ac)

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Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

Site Location Map

0 300 600 Feet

1:6,000

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NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Ruston (LA) Quad Basemap

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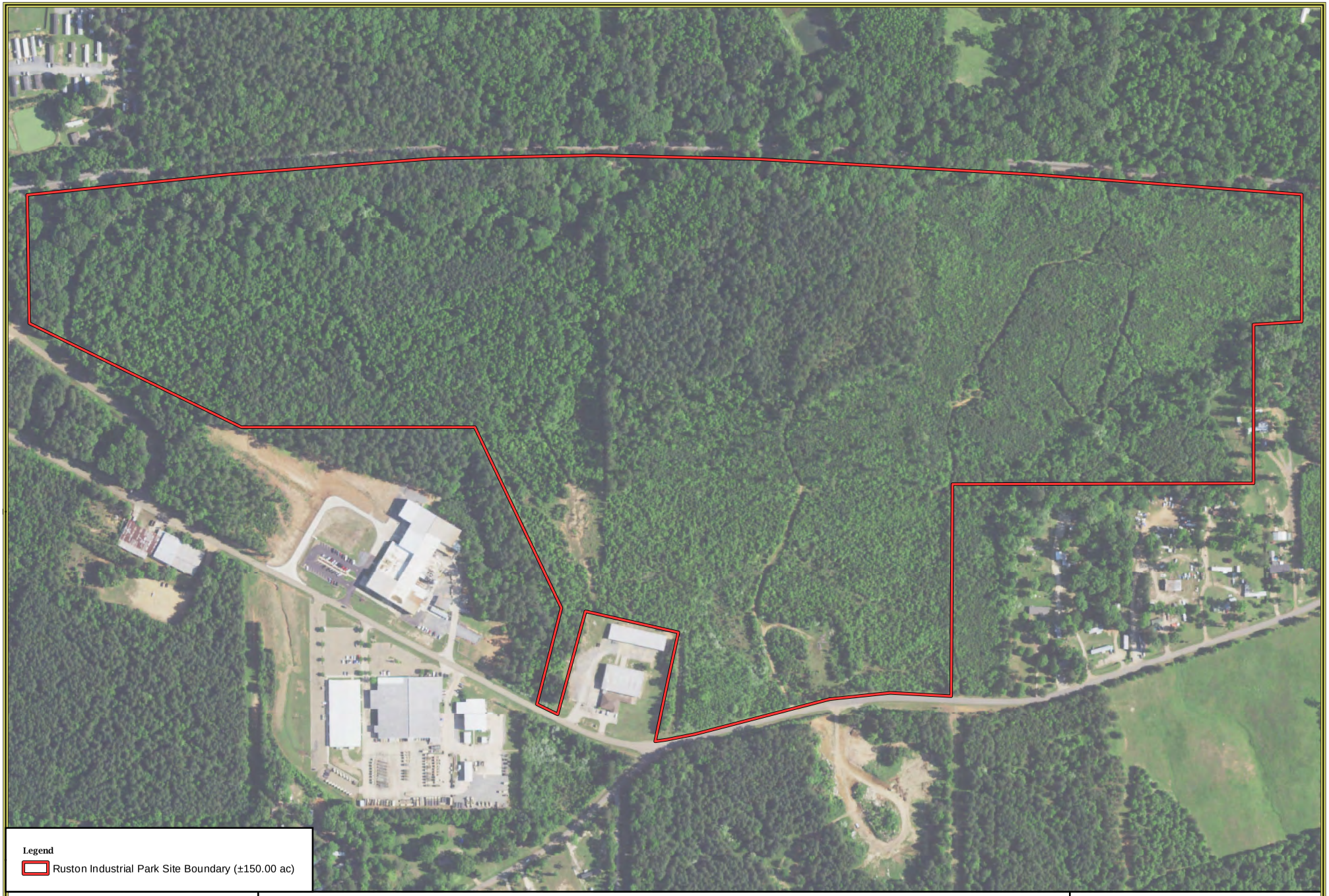

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Site Location Map

0 300 600 Feet

1:6,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2015 Imagery Basemap

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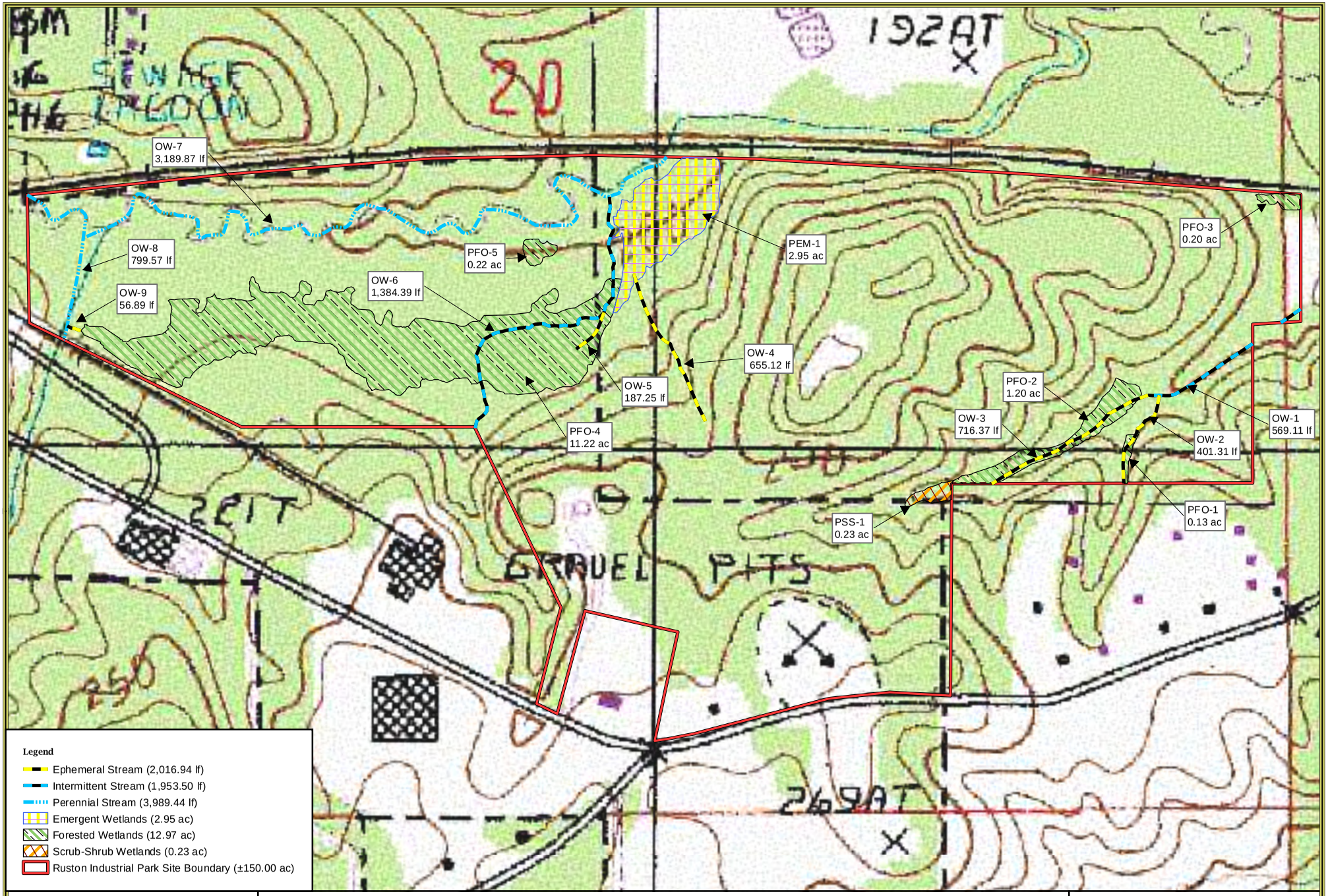
APPENDIX II

- Site Map Depicting Wetland Areas, GPS Waypoints, and Wetland Delineation Data Point Locations



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Date Created: 4/26/2017 | Created by: JDL

Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

Wetland Location Map

0 300 600 Feet
1:6,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Ruston (LA) Quad Basemap

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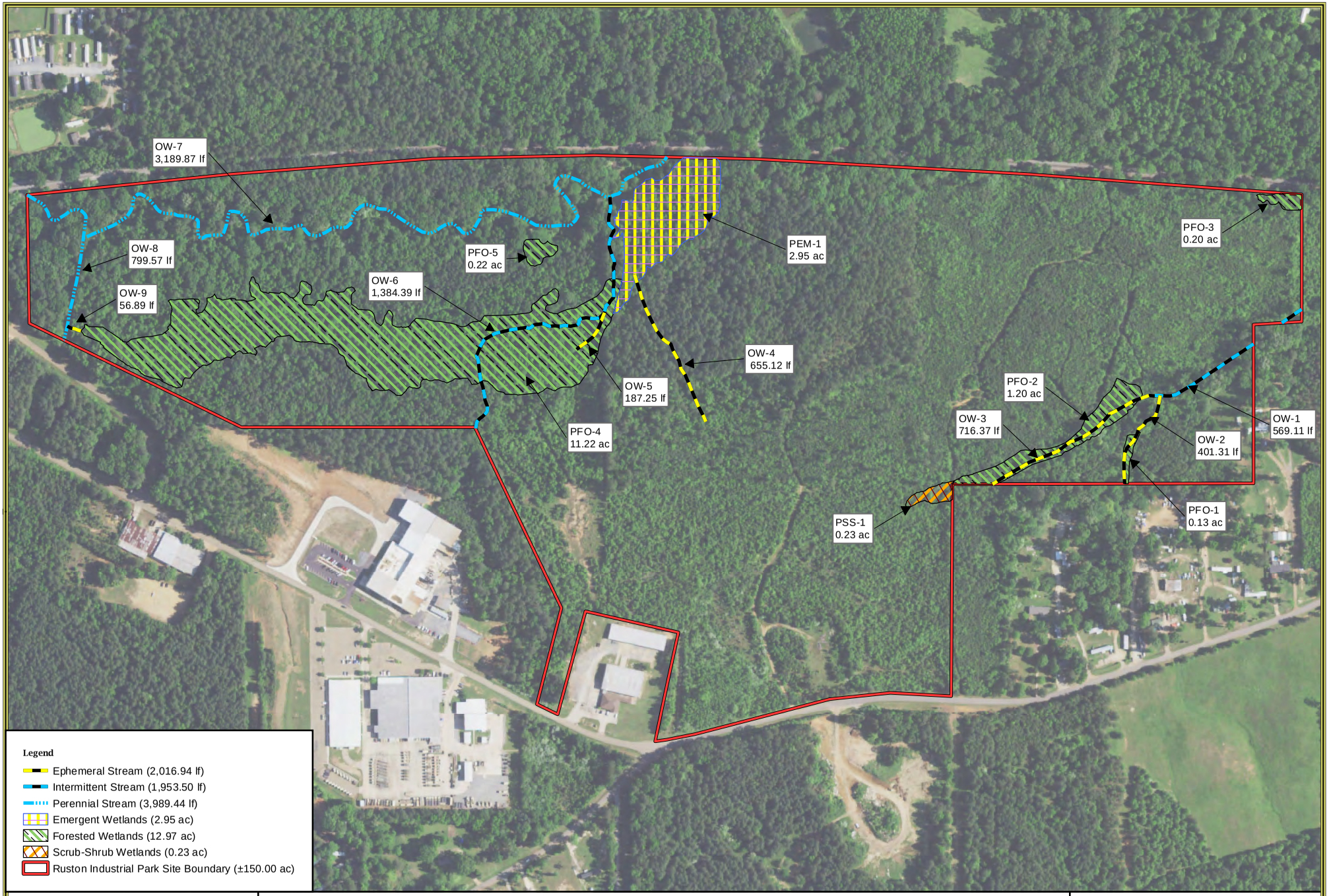

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Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

Wetland Location Map

0 300 600 Feet
1:6,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2015 Imagery Basemap

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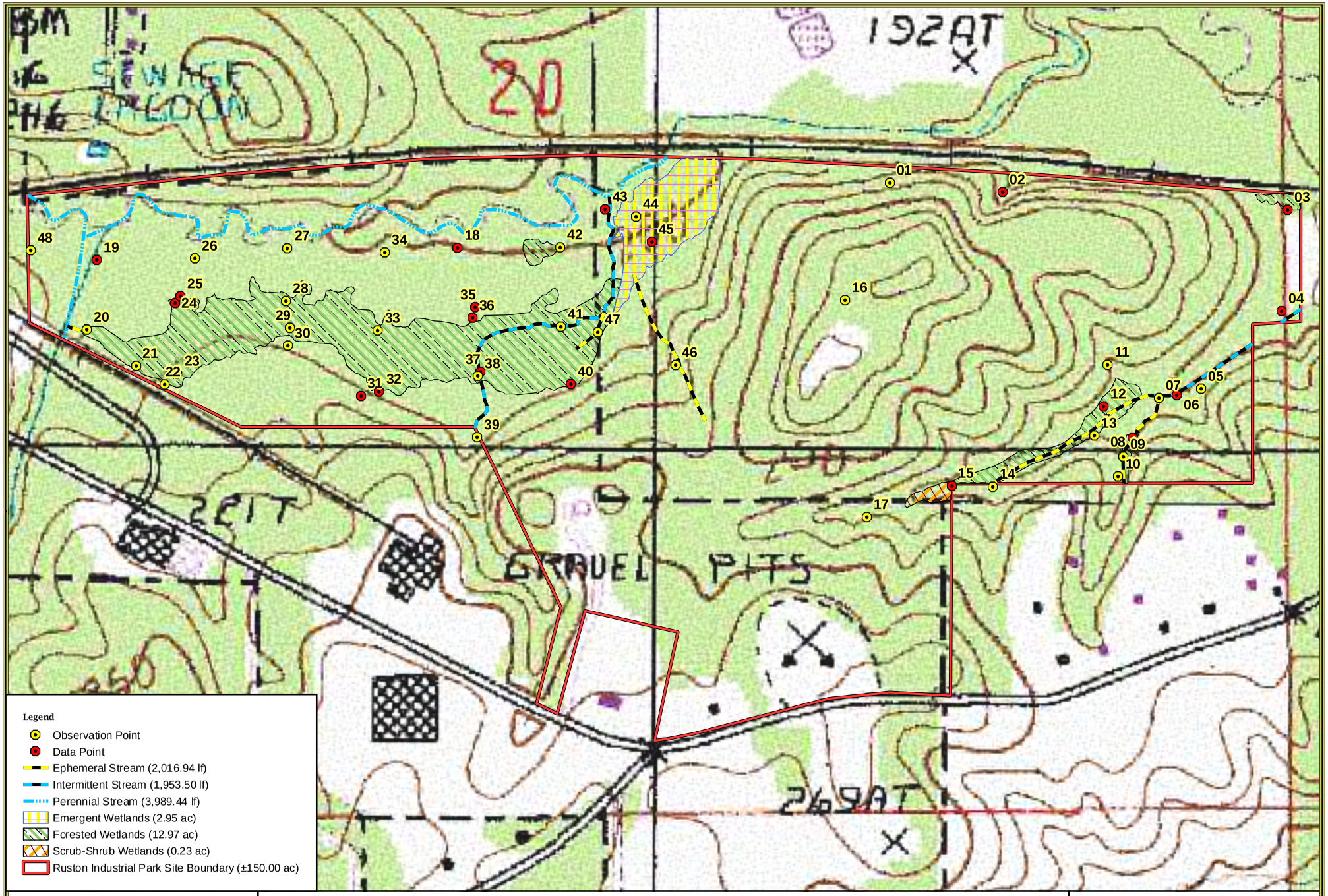

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Date Created: 5/1/2017 | Created by: JDL

Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

GPS/Wetland Location Map

0 300 600 Feet
1:6,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Ruston (LA) Quad Basemap

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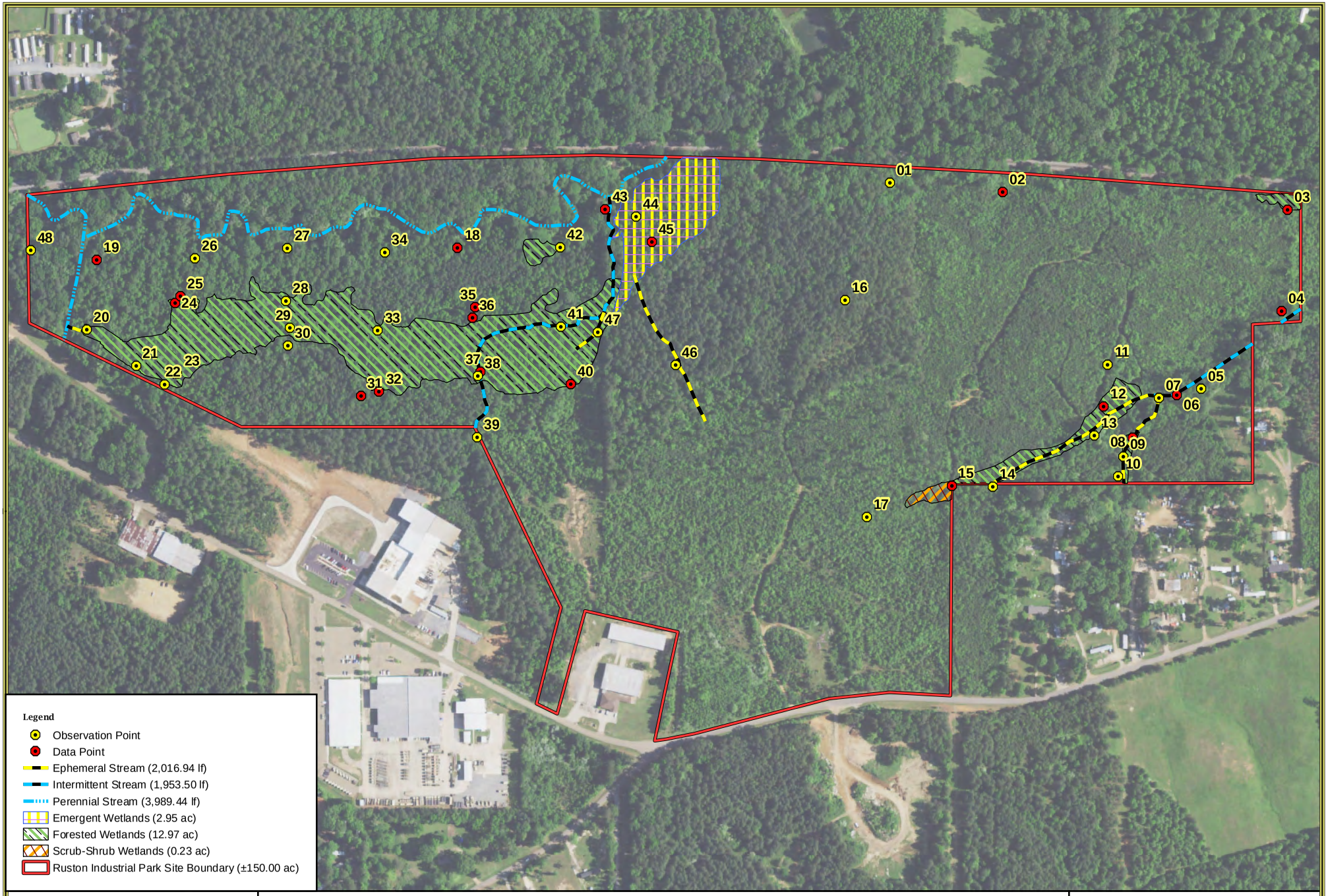

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Date Created: 5/1/2017 | Created by: JDL

Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

GPS/Wetland Location Map

0 300 600 Feet

1:6,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2015 Imagery Basemap

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APPENDIX III

- U.S. Army Corps of Engineers Atlantic and Gulf Coastal Plain Region Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 2-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR P Lat: 32.532302 Long: -92.591043 Datum: WGS 84

Soil Map Unit Name: Darley-Sacul association NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within an upland topographic draw along the northern boundary of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

no signs of hydrology

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

Sampling Point: 2-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	25	Yes	FAC
2. Liquidambar styraciflua	20	Yes	FAC
3. Ostrya virginiana	10	No	FACU
4. Ulmus americana	5	No	FAC
5. Prunus serotina	5	No	FACU
6.			
7.			
8.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	15	Yes	FAC
2. Prunus serotina	10	Yes	FACU
3. Ulmus alata	5	No	FACU
4. Carya spp.	5	No	FACU
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Herb Stratum (Plot size: 1/10 acre)			
1. Podophyllum peltatum	15	Yes	FACU
2. Parthenocissus quinquefolia	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	120 (A)		415 (B)

Prevalence Index = B/A = 3.46

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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: 2-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	4/4 10YR	100					Silty loam	
5-12	5/6 10YR	100					Silty loam	

[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)**
- ☐ 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:

No hydric soil characteristics observed within the top 12" of the soil profile

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 3-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.532111 Long: -92.587392 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a forested wetland habitat in the northeast corner of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): none
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes x	No ____	Depth (inches): 6-8"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 3-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	35	Yes	FAC
2. Liquidambar styraciflua	15	Yes	FAC
3. Ulmus americana	10	No	FAC
4. Carpinus caroliniana	10	No	FAC
5.			
6.			
7.			
8.			
	70	= Total Cover	
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Quercus phellos	15	Yes	FACW
2. Acer rubrum	10	Yes	FAC
3. Quercus nigra	10	Yes	FAC
4. Ligustrum sinense	5	No	FAC
5.			
6.			
7.			
8.			
	40	= Total Cover	
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 1/10 acre)			
1. Arundinaria tecta	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size:)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: 3-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	5/3 10YR	100					Silt loam	
5-12	5/2 10YR	80	5/6 7.5YR	20	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 4-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): stream topbank Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR P Lat: 32.531013 Long: -92.587465 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Sampling point was taken on the upland top bank of an intermittent stream channel in the northeast portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

No signs of hydrology

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

Sampling Point: 4-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	25	Yes	FAC
2. Quercus alba	20	Yes	FACU
3. Carpinus caroliniana	10	No	FAC
4. Quercus nigra	10	No	FAC
5. Quercus pagoda	5	No	FACW
6. Prunus serotina	5	No	FACU
7.			
8.			
	75 = Total Cover		

50% of total cover: 27.5 20% of total cover: 15

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	15	Yes	FAC
2. Ulmus alata	15	Yes	FACU
3. Ilex opaca	5	No	FAC
4. Acer rubrum	5	No	FAC
5.			
6.			
7.			
8.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: 1/10 acre)			
1. Arundinaria tecta	15	Yes	FACW
2. Podophyllum peltatum	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25 = Total Cover		

50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot size:)			
1. Smilax rotundifolia	10	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 63% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

SOIL

Sampling Point: 4-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	4/6 10YR	100					Silty loam	

[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)**
- ☐ 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:

No hydric soil characteristics observed within the top 12"

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 6-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): topographic draw Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR P Lat: 32.530099 Long: -92.588810 Datum: WGS 84

Soil Map Unit Name: Darley-Sacul association NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

Sampling point was taken within a natural topographic draw within the eastern portion of the site.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): none
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): >12"

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Sampling Point: 6-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	25	Yes	FAC
2. Quercus nigra	20	Yes	FAC
3. Acer rubrum	10	No	FAC
4. Carpinus caroliniana	10	No	FAC
5. Carya spp.	5	No	FACU
6.			
7.			
8.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	15	Yes	FAC
2. Prunus serotina	15	Yes	FACU
3. Ulmus alata	10	Yes	FACU
4. Carya spp.	5	No	FACU
5.			
6.			
7.			
8.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	15	Yes	FACU
2. Arundinaria tecta	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25 = Total Cover		
50% of total cover: 12.5	20% of total cover: 5		
Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia	5	Yes	FAC
2. Smilax rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes x No

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

SOIL

Sampling Point: 6-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	4/6 10YR	100					Silty loam	

[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)**
- ☐ 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:

No hydric soil characteristics observed within the top 12" of the soil profile.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 8-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): fringe wetland Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.529638 Long: -92.589376 Datum: WGS 84

Soil Map Unit Name: Darley-Sacul association NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a forested wetland fringe to an ephemeral stream channel in the eastern portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 1-2" in pools
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No _____

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

Remarks:

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

Sampling Point: 8-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	25	Yes	FAC
2. Ulmus americana	15	Yes	FAC
3. Quercus phellos	10	No	FACW
4. Liquidambar styraciflua	10	No	FAC
5. Salix nigra	5	No	OBL
6.			
7.			
8.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FACW
2. Quercus phellos	10	Yes	FACW
3. Salix nigra	5	No	OBL
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 1/10 acre)			
1. Arundinaria tecta	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

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

SOIL

Sampling Point: 8-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/1 10YR	85	4/6 7.5YR	15	C	PL	Sandy loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 12-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.529977 Long: -92.589748 Datum: WGS 84

Soil Map Unit Name: Darley-Sacul association NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a forested wetland habitat in the eastern portion of the site along the top-bank of an ephemeral stream channel.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1-3" in pools
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 12-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	25	Yes	FAC
2. Triadica sebifera	15	Yes	FAC
3. Acer rubrum	10	No	FAC
4. Ulmus americana	10	No	FAC
5. Salix nigra	5	No	OBL
6. Pinus taeda	5	No	FAC
7.			
8.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Triadica sebifera	15	Yes	FAC
2. Ligustrum sinense	10	Yes	FAC
3. Salix nigra	10	Yes	OBL
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 1/10 acre)			
1. Carex spp.	25	Yes	FACW
2. Cyperus pseudovegetus	10	Yes	FACW
3. Persicaria hydropiperoides	10	Yes	OBL
4. Juncus effusus	5	No	OBL
5. Triadica sebifera	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size:)			
1. Smilax rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: 12-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/1 10YR	85	5/6 7.5YR	15	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 15-PSS

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.529115 Long: -92.591695 Datum: WGS 84

Soil Map Unit Name: Darley-Sacul association NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a scrub-shrub wetland depression that has been impeded by a previously utilized logging road.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): >6"
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 15-PSS

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Salix nigra	20	Yes	OBL
2. Liquidambar styraciflua	10	Yes	FAC
3. Acer rubrum	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum (Plot size: 1/10 acre)			
1. Persicaria hydropiperoides	25	Yes	OBL
2. Juncus effusus	15	Yes	OBL
3. Carex spp.	10	No	FACW
4. Saccharum giganteum	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

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

SOIL

Sampling Point: 15-PSS

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
0-12	5/1 10YR	90	4/6 7.5YR	10	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 18-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): top-bank Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR P Lat: 32.531693 Long: -92.598027 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Sampling point was taken on the upland top bank of a perennial stream channel in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

No signs of hydrology.

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

Sampling Point: 18-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	30	Yes	FAC
2. Pinus taeda	15	Yes	FAC
3. Ulmus americana	10	No	FAC
4. Carpinus caroliniana	10	No	FAC
5. Liquidambar styraciflua	10	No	FAC
6. Prunus serotina	5	No	FACU
7.			
8.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Carpinus caroliniana	10	Yes	FAC
3. Ilex opaca	5	No	FAC
4. Prunus serotina	5	No	FACU
5.			
6.			
7.			
8.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 1/10 acre)			
1. Arundinaria tecta	15	Yes	FACW
2. Callicarpa americana	15	Yes	FACU
3. Parthenocissus quinquefolia	5	No	FACU
4. Toxicodendron radicans	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: 18-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	6/4 10YR	100					Sandy loam	

[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)**
- ☐ 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:

No hydric soil characteristics observed within top 12" of the soil profile.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 19-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): top-bank Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR P Lat: 32.531555 Long: -92.602651 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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 _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

Sampling point was taken on the upland top bank of a perennial stream channel in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

no signs of hydrology.

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

Sampling Point: 19-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	25	Yes	FAC
2. Quercus pagoda	15	Yes	FACW
3. Liquidambar styraciflua	15	Yes	FAC
4. Prunus serotina	10	No	FACU
5. Carpinus caroliniana	5	No	FAC
6. Carya spp.	5	No	FACU
7. Cercis canadensis	5	No	UPL
8.			
	80	= Total Cover	

50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Prunus serotina	15	Yes	FACU
2. Ulmus alata	10	Yes	FACU
3. Acer rubrum	5	No	FAC
4. Carya spp.	5	No	FACU
5.			
6.			
7.			
8.			
	35	= Total Cover	

50% of total cover: 17.5 20% of total cover: 7

Herb Stratum (Plot size: 1/10 acre)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: _____)			
1. Smilax rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** x **No** _____

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

SOIL

Sampling Point: 19-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	5/4 10YR	100					Sandy loam	

[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)**
- ☐ 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:

no hydric soil characteristics observed within the top 12" of the soil profile

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 24-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.531090 Long: -92.601653 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a forested wetland habitat in the western portion of the subject property. this data sheet reflects the forested wetland habitat to the south of this sampling point

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): none
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 6-8"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 24-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	25	Yes	FAC
2. Acer rubrum	15	Yes	FAC
3. Quercus nigra	15	Yes	FAC
4. Pinus taeda	5	No	FAC
5. Quercus pagoda	5	No	FACW
6. Carpinus caroliniana	5	No	FAC
7.			
8.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Quercus phellos	10	Yes	FACW
3. Ulmus americana	5	No	FAC
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

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

SOIL

Sampling Point: 24-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	4/4 10YR	100					Silt loam	
4-12	6/2 10YR	80	4/6 10YR	20	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 25-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.531162 Long: -92.601578 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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 _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

Sampling point was taken within a forested upland habitat along the upland - wetland transition line in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

no signs of hydrology

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

Sampling Point: 25-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	25	Yes	FAC
2. Quercus pagoda	10	Yes	FACW
3. Prunus serotina	10	Yes	FACU
4. Quercus alba	10	Yes	FACU
5. Acer rubrum	5	No	FAC
6. Liquidambar styraciflua	5	No	FAC
7. Carpinus caroliniana	5	No	FAC
8. Carya spp.	5	No	FACU
	75	= Total Cover	

50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Quercus nigra	20	Yes	FAC
2. Ulmus alata	5	No	FACU
3. Carpinus caroliniana	5	No	FAC
4.			
5.			
6.			
7.			
8.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	15	Yes	FACU
2. Podophyllum peltatum	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot size:)			
1. Smilax rotundifolia	5	Yes	FAC
2. Vitis rotundifolia	5	Yes	FAC
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 56% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

SOIL

Sampling Point: 25-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	4/4 10YR	100					Silt loam	

[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)**
- ☐ 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:

no hydric soil characteristics observed within top 12" of the soil profile

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 31-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 2-5

Subregion (LRR or MLRA): LRR P Lat: 32.530085 Long: -92.599257 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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 _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

Sampling point was taken within a forested upland habitat along the transition line in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

no signs of hydrology.

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

Sampling Point: 31-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	25	Yes	FAC
2. Quercus pagoda	15	Yes	FACW
3. Quercus alba	15	Yes	FACU
4. Pinus taeda	10	No	FAC
5. Liquidambar styraciflua	10	No	FAC
6. Carpinus caroliniana	5	No	FAC
7. Carya spp.	5	No	FACU
8.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3. Juniperus virginiana	10	Yes	FACU
4. Prunus serotina	5	No	FACU
5.			
6.			
7.			
8.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** x **No**

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

SOIL

Sampling Point: 31-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	4/6 10YR	100					Silt loam	

[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)**
- ☐ 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:

no hydric soil characteristics observed within top 12" of the soil profile

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 32-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.530128 Long: -92.599030 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a forested wetland habitat along the wetland - upland habitat transition line in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1-3"
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 32-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	20	Yes	FAC
2. Acer rubrum	15	Yes	FAC
3. Ulmus americana	15	Yes	FAC
4. Carpinus caroliniana	10	No	FAC
5. Salix nigra	5	No	OBL
6. Quercus pagoda	5	No	FACW
7.			
8.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Herb Stratum (Plot size: 1/10 acre)			
1. Saururus cernuus	25	Yes	OBL
2. Juncus effusus	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: 32-PFO

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
0-12	5/1 10YR	85	4/6 10YR	15	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 35-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 2-5

Subregion (LRR or MLRA): LRR P Lat: 32.531045 Long: -92.597803 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Sampling point was taken within a forested upland habitat along the wetland - upland transition line in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): none
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): >12"

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

no signs of hydrology.

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

Sampling Point: 35-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	35	Yes	FAC
2. Liquidambar styraciflua	15	Yes	FAC
3. Quercus pagoda	10	No	FACW
4. Ulmus americana	10	No	FAC
5. Carpinus caroliniana	5	No	FAC
6. Prunus serotina	5	No	FACU
7.			
8.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ulmus alata	15	Yes	FACU
2. Ligustrum sinense	15	Yes	FAC
3. Juniperus virginiana	10	Yes	FACU
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	20	Yes	FACU
2. Parthenocissus quinquefolia	5	No	FACU
3. Toxicodendron radicans	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** x **No** ____

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

SOIL

Sampling Point: 35-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/4 10YR	100					Silt loam	

[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)**
- ☐ 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:

no hydric soil characteristics observed within top 12" of the soil profile

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: CSRS State: LA Sampling Point: 36-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.530932 Long: -92.597835 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

This sampling point was taken along the wetland - upland transition line. This data sheet reflects the forested wetland habitat conditions to the south.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): none
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10-12"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 36-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus pagoda	25	Yes	FACW
2. Liquidambar styraciflua	20	Yes	FAC
3. Carpinus caroliniana	10	No	FAC
4. Ulmus americana	10	No	FAC
5. Quercus phellos	5	No	FACW
6. Pinus taeda	5	No	FAC
7.			
8.			
	75	= Total Cover	

50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Quercus phellos	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 1/10 acre)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: _____)			
1. Vitis rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

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

SOIL

Sampling Point: 36-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/1 10YR	80	4/6 10YR	20	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 36-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 2-5

Subregion (LRR or MLRA): LRR P Lat: 32.530932 Long: -92.597835 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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 ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

This sampling point was taken along the wetland - upland transition line. This data sheet reflects the upland (non-wetland) forested habitat conditions to the north.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): none
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): >12"

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

no signs of hydrology.

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

Sampling Point: 36-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	20	Yes	FAC
2. Quercus pagoda	20	Yes	FACW
3. Liquidambar styraciflua	15	Yes	FAC
4. Ulmus americana	10	No	FAC
5. Carpinus caroliniana	5	No	FAC
6.			
7.			
8.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Ulmus alata	10	Yes	FACU
3. Juniperus virginiana	5	No	FACU
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	15	Yes	FACU
2. Parthenocissus quinquefolia	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 63% (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** x **No**

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

SOIL

Sampling Point: 36-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/4 10YR	100					Silt loam	

[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)**
- ☐ 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:

No hydric soil characteristics observed within the top 12" of the soil profiling.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 37-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.530345 Long: -92.597733 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within a forested wetland habitat in the western portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 1-2" in pools
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 6-8"

Wetland Hydrology Present? Yes X No _____

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

Remarks:

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

Sampling Point: 37-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus pagoda	25	Yes	FACW
2. Liquidambar styraciflua	15	Yes	FAC
3. Ulmus americana	15	Yes	FAC
4. Salix nigra	10	No	OBL
5. Acer rubrum	5	No	FAC
6. Pinus taeda	5	No	FAC
7.			
8.			
	75	= Total Cover	

50% of total cover: 37.5 20% of total cover: 15

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	30	= Total Cover	

50% of total cover: 15 20% of total cover: 6

Herb Stratum (Plot size: 1/10 acre)			
1. Juncus effusus	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	

50% of total cover: 7.5 20% of total cover: 3

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

50% of total cover: 20% of total cover:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

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

SOIL

Sampling Point: 37-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	4/1 10YR	85	5/8 10YR	15	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 40-PFO

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.530212 Long: -92.596578 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken along the wetland - upland habitat transition line in the western half of the site. This data sheet reflects the forested wetland conditions observed to the north of this waypoint.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1-2" in pools
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 40-PFO

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	35	Yes	FAC
2. Acer rubrum	20	Yes	FAC
3. Quercus phellos	10	No	FACW
4. Quercus pagoda	10	No	FACW
5. Triadica sebifera	5	No	FAC
6.			
7.			
8.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Quercus phellos	20	Yes	FACW
2. Triadica sebifera	10	Yes	FAC
3. Cephalanthus occidentalis	5	No	OBL
4.			
5.			
6.			
7.			
8.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 1/10 acre)			
1. Juncus effusus	20	Yes	OBL
2. Saururus cernuus	10	Yes	OBL
3. Arundinaria tecta	5	No	FACW
4. Persicaria hydropiperoides	5	No	OBL
5. Woodwardia areolata	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size:)			
1. Smilax rotundifolia	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: 40-PFO

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/1 10YR	85	5/8 10YR	15	C	PL	Silt loam	

[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)**
- ☐ 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: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 43-UP

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): top-bank Local relief (concave, convex, none): convex Slope (%): 2-8

Subregion (LRR or MLRA): LRR P Lat: 32.532109 Long: -92.596137 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken along the upland top bank of an intermittent stream channel where it ties into a perennial stream channel in the northern portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): none
Water Table Present?	Yes _____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >12"

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

no signs of hydrology.

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

Sampling Point: 43-UP

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus nigra	30	Yes	FAC
2. Carya spp.	20	Yes	FACU
3. Liquidambar styraciflua	10	No	FAC
4. Quercus pagoda	10	No	FACW
5. Prunus serotina	5	No	FACU
6. Carpinus caroliniana	5	No	FAC
7.			
8.			
	80	= Total Cover	

50% of total cover: 40 20% of total cover: 16

Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1. Ligustrum sinense	20	Yes	FAC
2. Ulmus alata	10	Yes	FACU
3. Aesculus pavia	5	No	FACU
4.			
5.			
6.			
7.			
8.			
	35	= Total Cover	

50% of total cover: 17.5 20% of total cover: 7

Herb Stratum (Plot size: 1/10 acre)			
1. Callicarpa americana	15	Yes	FACU
2. Aesculus pavia	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

50% of total cover: 12.5 20% of total cover: 5

Woody Vine Stratum (Plot size:)			
1. Smilax rotundifolia	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	75	x 3 =	225
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	150 (A)		505 (B)

Prevalence Index = B/A = 3.37

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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

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

SOIL

Sampling Point: 43-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	4/6 10YR	100					Silt loam	

[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)**
- ☐ 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:

No hydric soil characteristics observed within the top 12" of the soil profile.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Ruston Industrial Park City/County: Lincoln Parish Sampling Date: 4/10/17

Applicant/Owner: City of Ruston State: LA Sampling Point: 45-PEM

Investigator(s): Headwaters, Inc. Section, Township, Range: Section 20, T 18 N, R 2 W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): LRR P Lat: 32.531760 Long: -92.595537 Datum: WGS 84

Soil Map Unit Name: Guyton-Ouachita silt loams NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N, Soil N, or Hydrology N 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:

Sampling point was taken within an emergent wetland/cutover habitat in the northern portion of the subject property.

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)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3-5" in pools
Water Table Present?	Yes ____	No X	Depth (inches): >12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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

Sampling Point: 45-PEM

Tree Stratum (Plot size: 1/10 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 1/10 acre)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 1/10 acre)			
1. Carex spp.	20	Yes	FACW
2. Juncus effusus	15	Yes	OBL
3. Cyperus pseudovegetus	10	Yes	FACW
4. Solidago spp.	10	Yes	FAC
5. Persicaria hydropiperoides	5	No	OBL
6. Triadica sebifera	5	No	FAC
7. Liquidambar styraciflua	5	No	FAC
8. Saururus cernuus	5	No	OBL
9. Scirpus cyperinus	5	No	OBL
10.			
11.			
12.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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
- ☑ 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 Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No**

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

SOIL

Sampling Point: 45-PEM

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5/1 10YR	80	4/6 10YR	20	C	PL	Silt loam	

[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)**
- ☐ 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:

APPENDIX IV

- Custom Soil Resource Report for Lincoln Parish, Louisiana

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 Lincoln Parish, Louisiana

CSRS, Inc. - Ruston Industrial Park

April 26, 2017

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.

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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.

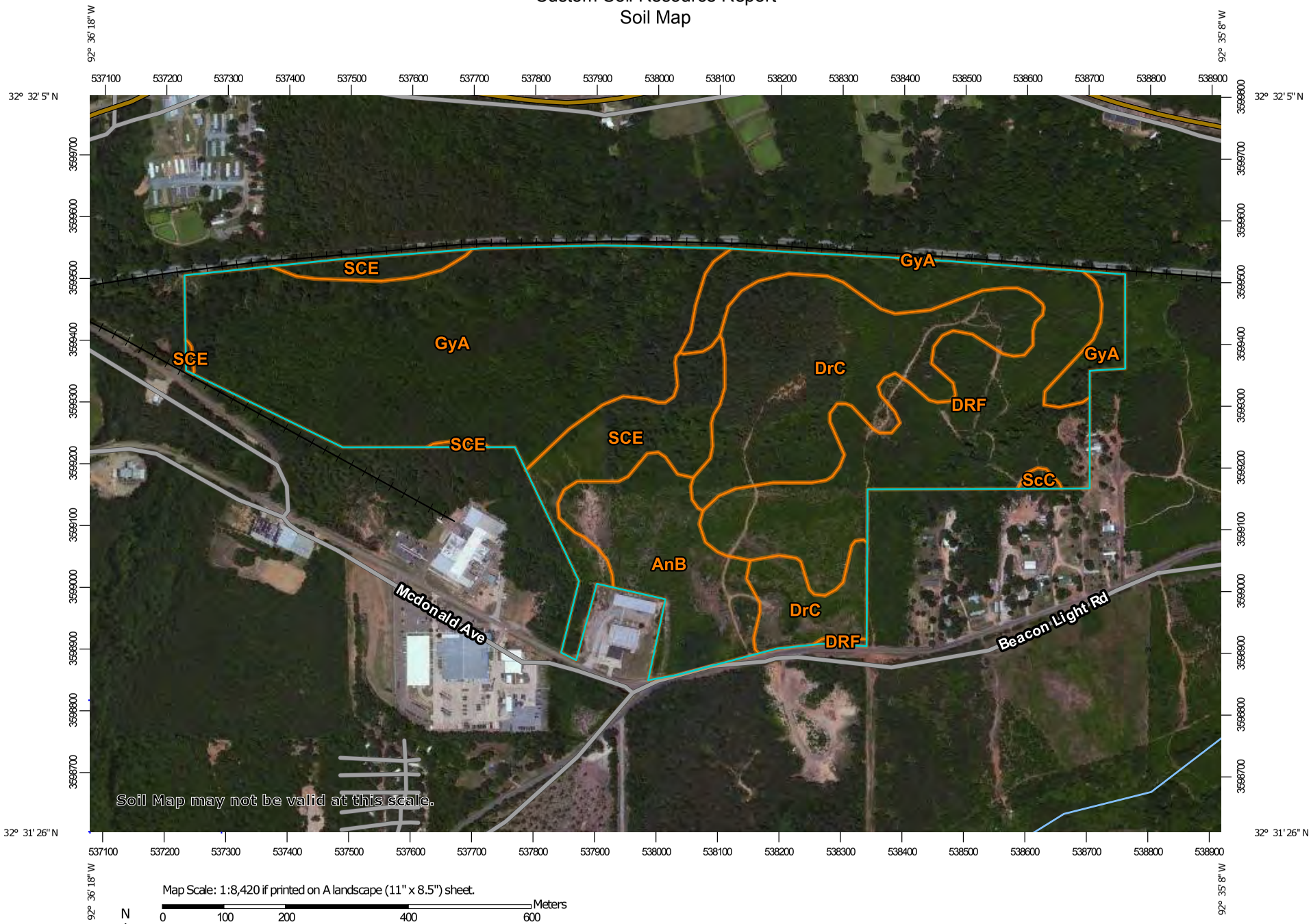
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 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: Lincoln Parish, Louisiana
Survey Area Data: Version 8, Sep 28, 2016

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

Date(s) aerial images were photographed: Jun 3, 2011—Jun 11, 2011

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

Map Unit Legend

Lincoln Parish, Louisiana (LA061)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AnB	Angie very fine sandy loam, 1 to 3 percent slopes	15.1	9.6%
DrC	Darley gravelly fine sandy loam, 1 to 5 percent slopes	31.7	20.2%
DRF	Darley-Sacul association, 12 to 30 percent slopes	38.5	24.6%
GyA	Guyton-Ouachita silt loams, frequently flooded	56.8	36.3%
ScC	Sacul very fine sandy loam, 1 to 5 percent slopes	0.4	0.3%
SCE	Sacul very fine sandy loam, 5 to 12 percent slopes	14.1	9.0%
Totals for Area of Interest		**156.7**	**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.

Lincoln Parish, Louisiana

AnB—Angie very fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: m58w
Elevation: 150 to 600 feet
Mean annual precipitation: 47 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 210 to 265 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Angie and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Angie

Setting

Landform: Interfluves, interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy marine deposits and/or clayey marine deposits

Typical profile

H1 - 0 to 12 inches: very fine sandy loam
H2 - 12 to 70 inches: silty clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
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 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: Clayey Upland (F133BY003TX)
Hydric soil rating: No

DrC—Darley gravelly fine sandy loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: m596
Elevation: 200 to 450 feet

Mean annual precipitation: 47 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 210 to 265 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Darley and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Darley

Setting
Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Parent material: Iron-rich clayey fluviomarine deposits

Typical profile
H1 - 0 to 11 inches: gravelly fine sandy loam
H2 - 11 to 29 inches: sandy clay
H3 - 29 to 53 inches: gravelly sandy clay
H4 - 53 to 85 inches: fine sandy loam

Properties and qualities
Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: Clayey Upland (F133BY003TX)
Hydric soil rating: No

DRF—Darley-Sacul association, 12 to 30 percent slopes

Map Unit Setting
National map unit symbol: m594
Elevation: 150 to 450 feet
Mean annual precipitation: 47 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 210 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Darley and similar soils: 50 percent
Sacul and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Darley

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Parent material: Iron-rich clayey fluviomarine deposits

Typical profile

H1 - 0 to 12 inches: gravelly fine sandy loam
H2 - 12 to 24 inches: sandy clay
H3 - 24 to 50 inches: gravelly sandy clay
H4 - 50 to 60 inches: fine sandy loam

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Upland (F133BY003TX)
Hydric soil rating: No

Description of Sacul

Setting

Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey fluviomarine deposits

Typical profile

H1 - 0 to 3 inches: very fine sandy loam
H2 - 3 to 6 inches: fine sandy loam
H3 - 6 to 48 inches: clay
H4 - 48 to 60 inches: clay loam

Properties and qualities

Slope: 12 to 30 percent
Depth to restrictive feature: More than 80 inches
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Upland (F133BY003TX)
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Hydric soil rating: No

GyA—Guyton-Ouachita silt loams, frequently flooded

Map Unit Setting

National map unit symbol: m598
Elevation: 20 to 250 feet
Mean annual precipitation: 47 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 210 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Guyton and similar soils: 45 percent
Ouachita and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guyton

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy alluvium of holocene age

Typical profile

H1 - 0 to 28 inches: silt loam
H2 - 28 to 45 inches: silty clay loam
H3 - 45 to 85 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
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 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Gypsum, maximum in profile: 5 percent
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: Loamy Bottomland (F133BY017TX)
Hydric soil rating: Yes

Description of Ouachita

Setting

Landform: Natural levees
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 11 inches: silt loam
H3 - 11 to 62 inches: silt loam
H4 - 62 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Hydric soil rating: Yes

Minor Components

Unnamed

Percent of map unit: 20 percent
Hydric soil rating: No

ScC—Sacul very fine sandy loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tnjd
Elevation: 180 to 560 feet
Mean annual precipitation: 43 to 57 inches
Mean annual air temperature: 63 to 65 degrees F
Frost-free period: 205 to 238 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sacul and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sacul

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey marine deposits

Typical profile

A - 0 to 3 inches: very fine sandy loam
E - 3 to 6 inches: very fine sandy loam
Bt1 - 6 to 30 inches: clay
Bt2 - 30 to 43 inches: clay
BC - 43 to 55 inches: clay loam
C - 55 to 80 inches: clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well 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 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.1 to 1.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D
Ecological site: Clayey Upland (F133BY003TX)
Hydric soil rating: No

Minor Components

Bowie
Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: Loamy Upland (F133BY005TX)
Hydric soil rating: No

SCE—Sacul very fine sandy loam, 5 to 12 percent slopes

Map Unit Setting
National map unit symbol: m59g
Elevation: 150 to 450 feet
Mean annual precipitation: 47 to 63 inches
Mean annual air temperature: 52 to 75 degrees F
Frost-free period: 210 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition
Sacul and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sacul

Setting
Landform: Interfluves
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey fluviomarine deposits

Typical profile
H1 - 0 to 2 inches: very fine sandy loam
H2 - 2 to 12 inches: very fine sandy loam
H3 - 12 to 60 inches: clay
H4 - 60 to 75 inches: clay loam

Properties and qualities
Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Clayey Upland (F133BY003TX)
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

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). Under natural conditions, these soils 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).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

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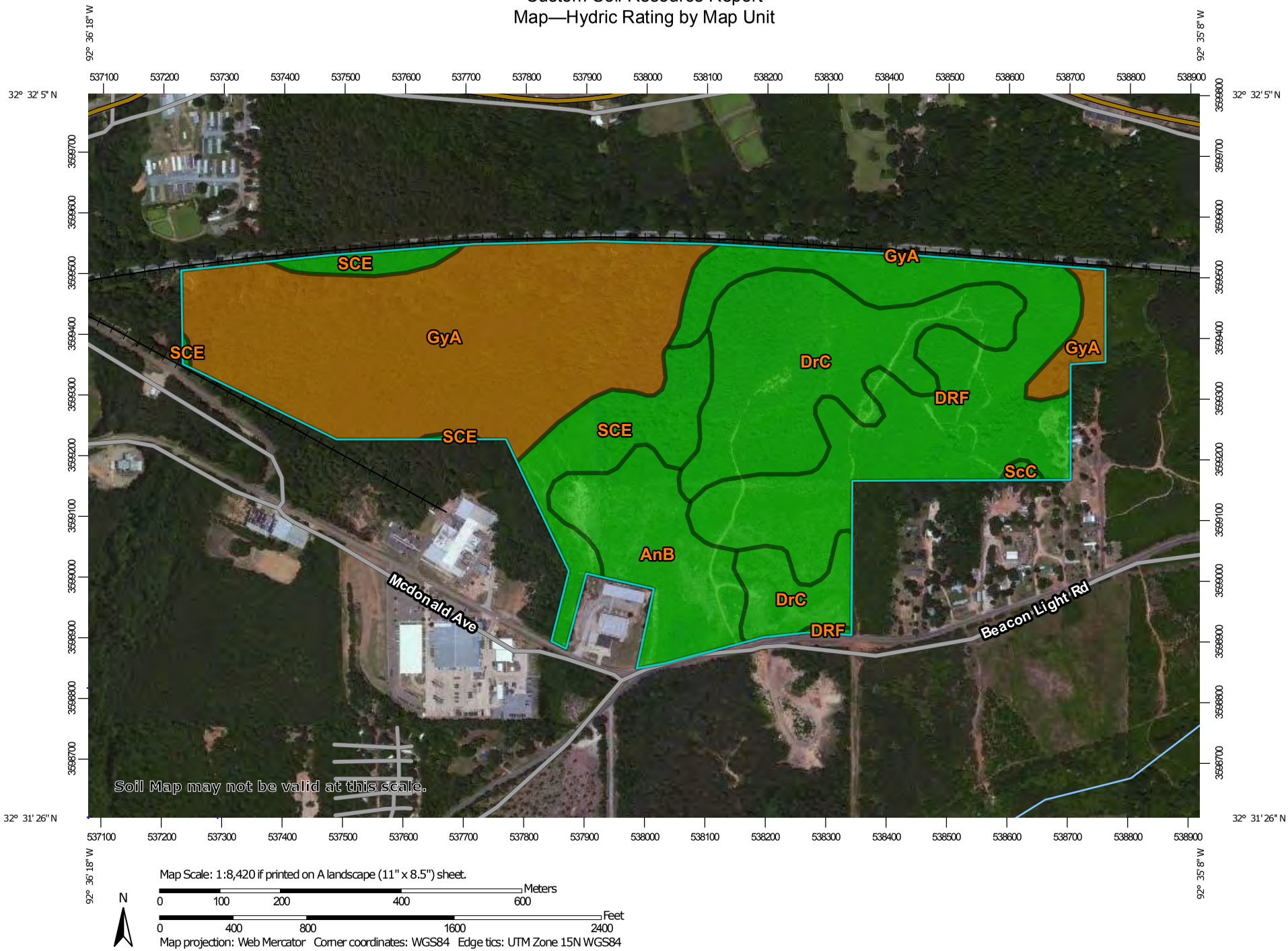
Custom Soil Resource Report
Map—Hydric Rating by Map Unit



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

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: Lincoln Parish, Louisiana
Survey Area Data: Version 8, Sep 28, 2016

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

Date(s) aerial images were photographed: Jun 3, 2011—Jun 11, 2011

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

Table—Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Lincoln Parish, Louisiana (LA061)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AnB	Angie very fine sandy loam, 1 to 3 percent slopes	0	15.1	9.6%
DrC	Darley gravelly fine sandy loam, 1 to 5 percent slopes	0	31.7	20.2%
DRF	Darley-Sacul association, 12 to 30 percent slopes	0	38.5	24.6%
GyA	Guyton-Ouachita silt loams, frequently flooded	80	56.8	36.3%
ScC	Sacul very fine sandy loam, 1 to 5 percent slopes	0	0.4	0.3%
SCE	Sacul very fine sandy loam, 5 to 12 percent slopes	0	14.1	9.0%
Totals for Area of Interest			**156.7**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

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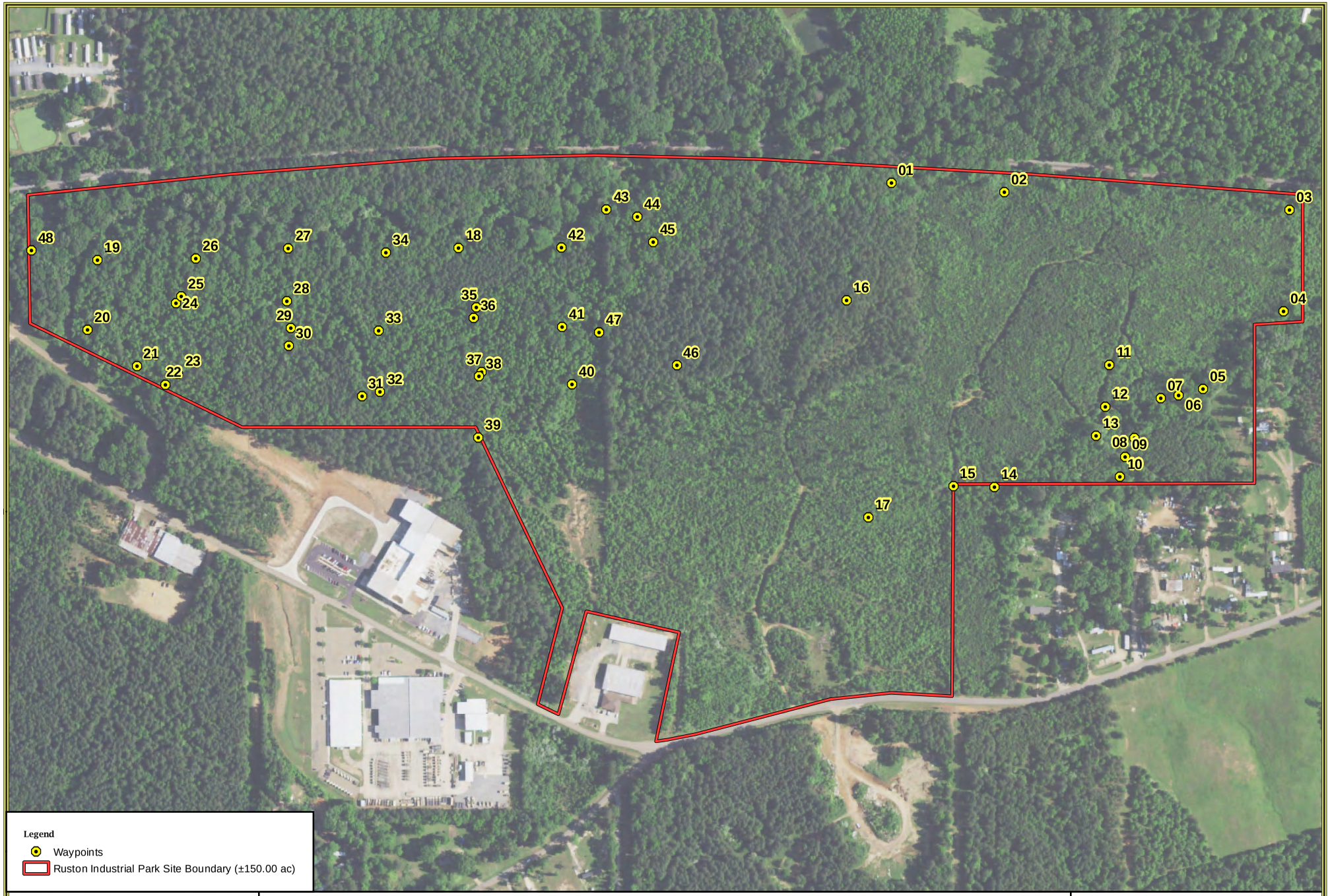
APPENDIX V

- GPS / Photo Location Exhibit

- Photographs of Selected Property Features



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Date Created: 4/26/2017 | Created by: JDL

Ruston Industrial Park

Sec. 20 - T 18N - R 2W
Lincoln Parish, Louisiana

GPS/Photo Location Map

0 300 600 Feet
1:6,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2015 Imagery Basemap

S:\PROJECT FILES\CSRS\Ruston Industrial Park\Mapping\CSRS.mxd

WAYPOINT NO. 1	
Upland (Non-wetland) forested habitat	
	
Description	View depicting the typical upland (non-wetland) forested habitat conditions observed within the northern portion of the subject property.

WAYPOINT NO. 1	
Upland (non-hydric) soil profile	
	
Description	View depicting the soil characteristics observed within the upland (non-wetland) forested habitat in the northern portion of the site. The soils at this waypoint were a 5/6 on the 10YR page of the Munsell Soil Color Chart.

WAYPOINT NO. 2	
Upland (non-wetland) habitat	
	
Description	View looking generally south, southwest depicting the upland (non-wetland) forested habitat conditions observed within a natural topographic draw feature along the northern property boundary.

WAYPOINT NO. 4	
Intermittent Stream (OW-1)	
	
Description	View looking down gradient to the northeast of the intermittent stream (OW-1) observed within the eastern portion of the site. The photograph also depicts the typical forested upland (non-wetland) habitat conditions observed at this waypoint along the stream's top-banks.

WAYPOINT NO. 4	
Upland (non-hydric) soil profile	
	
Description	View of the non-hydric soil profile observed at this waypoint. The soils at this waypoint were a 4/6 on the 10 YR page of the Munsell Soil Color chart.

WAYPOINT NO. 5	
Intermittent Stream (OW-1)	
	
Description	View depicting the intermittent stream (OW-1) observed meandering within the eastern limits of the subject property.

WAYPOINT NO. 6	
Upland (non-wetland) soil profile	
	
Description	View depicting the upland (non-wetland) soil profile observed within a natural topographic feature that conveys storm water down gradient to the north towards the intermittent stream channel.

WAYPOINT NO. 6	
Forested upland (non-wetland) habitat	
	
Description	View depicting the forested upland (non-wetland) habitat conditions observed with the natural draw. Photo taken is looking generally south.

WAYPOINT NO. 7	
Ephemeral Stream (OW-2)	
	
Description	View looking up gradient of an ephemeral stream channel (OW-2) from the location in which it merges with the larger intermittent stream channel (OW-1). The streams contained an upland (non-wetland) forested habitat along the top-banks at this waypoint.

WAYPOINT NO. 8	
Ephemeral stream (OW-2) & associated forested wetland fringe (PFO-1)	
	
Description	View looking up gradient of the ephemeral stream (OW-2) depicting the stream conditions and the associated forested wetland fringe (PFO-1) habitat observed along each side of the stream at this waypoint.

WAYPOINT NO. 8	
Hydric soil profile with forested wetland habitat (PFO-1)	
	
Description	View depicting the hydric soil profile observed within the forested wetland fringe habitat (PFO-1) within the southeast portion of the site. The soils at this waypoint were a 4/1 – 5/1 on the 10YR page of the Munsell Soil Color chart with a mottle color of 4/6 on the 7.5 page of approximately 20-25%. Redox concentrations were observed within the top 12" of the soil profile.

WAYPOINT NO. 10	
Ephemeral Stream (OW-2) and associated forested wetland fringe (PFO-1)	
	
Description	View looking down gradient of the ephemeral stream (OW-2) as it enters the subject property depicting the stream conditions and the associated forested wetland fringe (PFO-1) habitat observed along the east side of the stream at this waypoint.

WAYPOINT NO. 11	
Forested upland (non-wetland) habitat	
	
Description	View depicting the forested upland (non-wetland) habitat observed within the natural topographic draw observed at this waypoint. No wetland characteristics were observed with minor signs of erosion of the sandy loam soils due to overland sheet flow of storm water during rain events.

WAYPOINT NO. 12	
Forested Wetland Habitat (PFO-2)	
	
Description	View depicting the northern end of the forested wetland complex (PFO-2) observed within the eastern portion of the subject property.

WAYPOINT NO. 13	
Ephemeral stream (OW-3)	
	
Description	View depicting the ephemeral stream (OW-3) observed meandering through the southeast portion of the site conveying storm water generally to the northeast.

WAYPOINT NO. 14	
Forested Wetland Habitat (PFO-2)	
	
Description	View looking to the west depicting the conditions observed within the forested wetland habitat (PFO-2) along the property boundary line.

WAYPOINT NO. 14	
Hydric soil profile (PFO-2)	
	
Description	View depicting the hydric soil profile observed within the forested wetland habitat (PFO-2) within the southeast portion of the site. The soils at this waypoint were a 5/1 on the 10YR page of the Munsell Soil Color chart with a mottle color of 5/6 on the 7.5 page of approximately 20-25%. Redox concentrations were observed within the top 12" of the soil profile

WAYPOINT NO. 15	
Scrub – Shrub Wetland Habitat (PSS-1)	
	
Description	View depicting the habitat conditions observed within the scrub – shrub wetland habitat (PSS-1). This habitat was significantly impounded due to the adjacent logging road impeding the natural storm water flow patterns.

WAYPOINT NO. 16	
Upland (non-wetland) cut-over habitat	
	
Description	View looking generally west depicting the typical conditions observed within the cut-over habitat in the central portion of the site.

WAYPOINT NO. 17	
Forested upland (non-wetland) habitat	
	
Description	View depicting the forested upland (non-wetland) habitat observed within a natural topographic draw feature. Storm water flows as sheet flow across this area during rain events to the northeast.

WAYPOINT NO. 18	
Perennial Stream (OW-7)	
	
Description	View looking down gradient of the perennial stream (OW-7) observed meandering along the northern property boundary within the western half of the site. The perennial stream maintained an upland (non-wetland) forested habitat throughout the site.

WAYPOINT NO. 19	
Upland (non-wetland) soil profile	
	
Description	View depicting the upland (non-wetland) soil profile observed along the top banks of the perennial streams within the forested habitats. The soils consisted of a very sandy loam material with little to no mottle.

WAYPOINT NO. 19	
Perennial Stream (OW-8)	
	
Description	View looking up gradient of the perennial stream (OW-8) observed within the western limits of the site. The perennial stream maintained an upland (non-wetland) forested habitat throughout the site.

WAYPOINT NO. 19	
Upland (non-wetland) forested habitat	
	
Description	View looking east depicting the typical forested upland (non-wetland) habitat conditions observed along the top banks of the perennial streams.

WAYPOINT NO. 21	
Hydric soil profile (PFO-4)	
	
Description	View depicting the hydric soil profile observed within the western end of the large forested wetland complex (PFO-4) in the western half of the subject property.

WAYPOINT NO. 22	
Forested Wetland Habitat (PFO-4)	
	
Description	View depicting the forested wetland (PFO-4) habitat conditions along the base of the abandoned industrial spur track bed within the depressional area between the ridge to the south and the upland (non-wetland) top-bank habitat to the north.

WAYPOINT NO. 23	
Forested Wetland Habitat (PFO-4)	
	
Description	View depicting the habitat conditions observed within the forested wetland complex (PFO-4) in the western half of the subject property. Photo taken is looking northeast.

WAYPOINT NO. 23	
Hydric soil profile (PFO-4)	
	
Description	View depicting the hydric soil profile observed within the western end of the large forested wetland complex (PFO-4) in the western half of the subject property. The soils at this waypoint were a 5/1 on the 10YR page of the Munsell Soil Color chart with a 5/8 mottle on the 7.5YR page.

WAYPOINT NO. 24	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View looking north depicting the forested upland (non-wetland) habitat observed to the north of this transition line. The forested wetland habitat (PFO-4) is located to the south of this transition line.

WAYPOINT NO. 24	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View depicting the transition soils profile observed along the habitat transition line. The soils at this waypoint were a 5/3 on the 10YR page of the Munsell Soil Color chart with a predominant mottle color of 5/6 on the 10YR page.

WAYPOINT NO. 28	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View looking north depicting the forested upland (non-wetland) habitat observed to the north of this transition line. The forested wetland habitat (PFO-4) is located to the south of this transition line.

WAYPOINT NO. 28	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View looking south depicting the forested wetland habitat (PFO-4) observed to the south of this transition line. It was observed to be upland (non-wetland) in nature to the north of this waypoint.

WAYPOINT NO. 29	
Forested Wetland Habitat (PFO-4)	
	
Description	View looking generally north depicting the habitat conditions observed within the forested wetland complex (PFO-4) in the western half of the site.

WAYPOINT NO. 30	
Forested upland (non-wetland) habitat	
	
Description	View looking south depicting the forested upland (non-wetland) habitat observed along the ridge south of the large forested wetland complex (PFO-4) to the north of the waypoint.

WAYPOINT NO. 30	
Upland (non-hydric) soil profile	
	
Description	View depicting the upland (non-hydric) soil profile observed along the ridge within the forested upland habitat. The soils at this waypoint were a 4/6 on the 10YR page of the Munsell Soil Color chart.

WAYPOINT NO. 31	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View looking generally east along the forested wetland (PFO-4) – upland (non-wetland) habitat transition line. PFO-4 is in photo left and the upland forested habitat is in photo right.

WAYPOINT NO. 32	
Forested Wetland Habitat (PFO-4)	
	
Description	View to the northwest within the forested wetland complex (PFO-4) depicting the typical habitat conditions observed.

WAYPOINT NO. 35	
Forested upland (non-wetland) habitat	
	
Description	View depicting the forested upland (non-wetland) habitat conditions observed at this waypoint.

WAYPOINT NO. 35	
Upland (non-wetland) soil profile	
	
Description	View depicting the upland (non-wetland) soil profile observed at this waypoint within the forested upland habitat.

WAYPOINT NO. 37	
Intermittent Stream (OW-6) and forested wetland habitat (PFO-4)	
	
Description	View looking down gradient of the intermittent stream (OW-6) as it meanders through the forested wetland complex (PFO-4).

WAYPOINT NO. 38	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View looking south depicting the forested upland (non-wetland) habitat observed to the south of this transition waypoint. The forested wetland (PFO-4) is located north of this waypoint.

WAYPOINT NO. 39	
Intermittent Stream (OW-6)	
	
Description	View looking down gradient of the intermittent stream (OW-6) as it enters the subject property from the south. The stream contained a forested upland (non-wetland) top-bank habitat at this waypoint.

WAYPOINT NO. 40	
Wetland (PFO-4) – Upland (non-wetland) habitat transition line	
	
Description	View looking north depicting the forested wetland habitat (PFO-4) from the wetland – upland transition line. It is upland (non-wetland) forested habitat to the south of this waypoint.

WAYPOINT NO. 41	
Intermittent Stream (OW-6)	
	
Description	View looking down gradient to the east depicting the intermittent stream (OW-6) observed meandering through the large forested wetland complex (PFO-4) observed within the western portion of the site.

WAYPOINT NO. 42	
Upland (non-hydric) soil profile	
	
Description	View depicting the upland (non-hydric) soil profile along the wetland – upland transition line form the micro-habitat forested wetland habitat (PFO-5) observed to the west of this waypoint. The soils at this waypoint ranged from a 4/4 – 4/6 on the 10YR page of the Munsell Soil Color chart.

WAYPOINT NO. 42	
Upland (non-wetland) forested habitat	
	
Description	View depicting the typical forested upland (non-wetland) habitat conditions observed along the top-bank of the perennial stream (OW-7).

WAYPOINT NO. 43	
Intermittent Stream (OW-6)	
	
Description	View looking up gradient of the intermittent stream (OW-6) just south of where the stream merges with the larger perennial stream (OW-7). The streams contained a forested upland (non-wetland) habitat at this waypoint.

WAYPOINT NO. 43	
Upland (non-wetland) forested habitat	
	
Description	View depicting the typical forested upland (non-wetland) habitat conditions observed along the top-bank of the perennial stream (OW-7) and intermittent stream (OW-6) at this waypoint. Photo taken is looking southwest.

WAYPOINT NO. 44	
Emergent Wetland Habitat (PEM-1)	
	
Description	View depicting the conditions observed within the cutover habitat that was identified as an emergent wetland habitat (PEM-1) in the northern portion of the site.

WAYPOINT NO. 46	
Ephemeral Stream (OW-4)	
	
Description	View looking down gradient to the south depicting the ephemeral stream channel (OW-4) observed within the cut-over habitat. Significant tree debris from the recent timber harvest activities was observed within and adjacent to the stream. The top-banks were upland (non-wetland) in nature.

WAYPOINT NO. 47	
Ephemeral Stream (OW-5)	
	
Description	View depicting the segment of ephemeral stream (OW-5) observed within the eastern portion of the large forested wetland complex (PFO-4) observed within the western half of the site. This ephemeral stream merges with the intermittent stream (OW-6) just to the north of this waypoint.