

# Exhibit DD. Belle Grove Site Wetlands Delineation Report



Belle Grove Site Wetlands Delineation Report

# **Wetland Data Report**

Belle Grove Plantation Site

Iberville Parish, Louisiana

**Baton Rouge Area Chamber**

564 Laurel Street

Baton Rouge, Louisiana 70801

October 2016

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CK Project Number: 14253

**TABLE OF CONTENTS**

**1.0 INTRODUCTION.....1**  
**2.0 PHYSIOGRAPHY, CLIMATE, AND SITE DESCRIPTION .....2**  
**3.0 METHODS .....2**  
**4.0 RESULTS.....3**  
    4.1 Hydrology..... 3  
    4.2 Vegetation..... 3  
    4.3 Soils ..... 4  
    4.4 Questions Pertaining to Regulatory Authority ..... 4  
**5.0 CONCLUSIONS.....5**  
**6.0 LITERATURE CITED.....6**

**LIST OF FIGURES**

- Figure 1 Site Location Map
- Figure 2 Wetlands Map (Aerial Imagery Background)
- Figure 3 Wetlands Map (Black and White)
- Figure 4 Soils Map

**ATTACHMENTS**

- Attachment A Wetland Determination Data Forms and Photographs

## 1.0 INTRODUCTION

The following report summarizes a wetland delineation conducted by CK Associates (CK) on a 557.3-acre survey area (site) near White Castle, Louisiana. The purpose of this report is to identify areas that contain potential wetlands and other potential “Waters of the United States” (US) as defined in 33 C.F.R. § 328.3. The site is located on Highway 405 in Iberville Parish at latitude 30°11'23.06"N and longitude 91°6'43.48"W within Sections 10, 11, 12, 91 and 92 of Township 10 South and Range 13 East.

Waters of the US are aquatic areas that are either navigable or have a significant nexus to a navigable water. These areas are regulated by the US Army Corps of Engineers (USACE). Navigable waters are defined as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 C.F.R. § 329.4 [1986]). Any area below the ordinary high water mark, as defined in 33 C.F.R. § 328.3 (1993), may fall under Federal jurisdiction as a navigable water (33 C.F.R. § 329.11 [1986]).

Waters of the US, regardless of navigability, can generally be categorized as either: 1) deepwater aquatic habitats, 2) special aquatic sites, or 3) other waters of the US. Deepwater aquatic habitats are “areas that are permanently inundated at mean annual water depths greater than 6.6 feet or permanently inundated areas, less than or equal to 6.6 feet in depth that do not support rooted-emergent or woody plant species”. Special aquatic sites include 1) sanctuaries and refuges, 2) wetlands, 3) mudflats, 4) vegetated shallows, 5) coral reefs, and 6) riffle and pool complexes. Other waters of the US include, but are not limited to 1) isolated wetlands and lakes, 2) intermittent streams, 3) prairie potholes, and 4) other waters that are not part of a tributary system to interstate waters or navigable waters of the US (USACE 1987).

Wetlands are classified as a special aquatic site and are defined as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE 1987). These areas are referred to as “wetlands” throughout this report whereas deepwater aquatic habitats, special aquatic sites, streams, and other waters of the US are referred to as “other waters” in this report.

Three mandatory technical criteria for determining the presence of a wetland are, with exceptions, 1) prevalence of hydrophytic vegetation, 2) wetland hydrology, and 3) hydric soils (USACE 1987). Hydrophytic vegetation is defined as “the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content” (USACE 1987). The term wetland hydrology encompasses “the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation” (USACE 1987). A hydric soil is defined as “a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (USDA 2010).

## 2.0 PHYSIOGRAPHY, CLIMATE, AND SITE DESCRIPTION

The survey area is located within Land Resource Region (LRR) O – Mississippi Delta Cotton and Feed Grains Region, in Major Land Resource Area (MLRA) 131A – Southern Mississippi River Alluvium. The topography of MLRA 131A is characterized by level or depressionally to very undulating alluvial plains, backswamps, oxbows, natural levees, and terraces. Average elevations start at sea level in the southern part of the area and gradually rise to about 330 feet in the northwestern part. The lower Mississippi River and its tributaries drain nearly all of MLRA 131A, but the Atchafalaya River drains the extreme southwest part (USDA 2006).

The dominant soils in the survey area are typically found in humid subtropical climates. Annual rainfall in these areas averages 147 cm, and mean annual temperature is 20 degrees Celsius. Soils at the site are somewhat poorly drained; runoff is medium to slow and permeability is moderately slow. Most areas are protected from flooding by levees. Unprotected areas are subject to occasional or frequent flooding for brief to long durations. Much of the acreage is used for cropland; sugarcane, soybeans, corn, and wheat are the main crops. A significant acreage has been developed for urban, industrial or residential use (USDA 2016).

Active agriculture and associated agricultural drains comprise a majority of the site. There are existing homesteads on the northern part of the site and an area of non-wetland bottomland hardwood forest in the northwest corner of the site.

## 3.0 METHODS

CK visited the survey area September 26, 2016 to determine the extent of potential wetlands and other waters of the US. The wetland delineation followed routine onsite field procedures as outlined by the USACE (1987 and 2010). Soil references include the NRCS (2015, 2016a, and 2016c) and USDA (2010). Plant nomenclature and wetland indicator status is taken from The National Wetland Plant List (Lichvar et al. 2016). Plant nomenclature not listed in The National Wetland Plant List is taken from the NRCS PLANTS Database (2016b).

Prior to conducting the field investigation, CK reviewed available aerial photography, soil survey data, elevation data (Light Detection and Ranging [LiDAR] contours and Digital Elevation Models [DEM]), topographic maps, and National Wetland Inventory (NWI) data. Data points were established within the dominant plant communities of the survey area. Observations of soils, vegetation, and hydrology were documented at each data point location (Attachment A). Potential wetlands, potential waters of the US, and data point locations were mapped utilizing Trimble® GeoXT® Differential Global Positioning System (DGPS) with real-time corrections. Acreage was obtained by exporting the data from the DGPS unit into ESRI® ArcMap Version 10.4. Digital photographs were taken of the soil profile and surrounding vegetation at each data point (Attachment A).

Wetland hydrology was based on the observation of wetland hydrology indicators, as described by USACE (2010). Wetland hydrology criteria were met if one primary indicator was observed or a minimum of two secondary indicators were observed.

All vegetative species present within each data point plot were documented for all vegetation strata, including the tree stratum, sapling/shrub stratum, herbaceous stratum, and woody vines stratum. Percent absolute cover for each species was determined by ocular estimation. Plant communities met hydrophytic vegetation criteria if all dominant species across all strata are classified as obligatory and/or facultative-wet, or if greater than 50% of all dominant species from all strata were classified as obligatory, facultative-wet, and/or facultative species, or if the prevalence index is 3.0 or less (USACE 2010). Dominant species were selected using the "50/20 rule" described by the USACE (2010).

Soil profiles were obtained by excavating an approximate 12- to 16-inch soil pit. Soil color was recorded by matching soil samples throughout the profile to color chips contained in a Munsell soil color chart. The presence or absence of hydric soils was determined utilizing the methods and procedures outlined by the USACE (2010), including, but not limited to, the observation of the hydric soil indicators described by the USACE (2010).

## 4.0 RESULTS

Three data points (DP) were collected during the field investigation. DP1, DP2, and DP3 were all located within non-wetlands.

### 4.1 Hydrology

No primary hydrology indicators and only one secondary hydrology indicator (crawfish burrows, FAC-neutral test) were observed at DP1, DP2, and DP3.

### 4.2 Vegetation

The non-wet, active agriculture habitat is dominated by sugar-cane (*Saccharum officinarum*), large barnyard grass (*Echinochloa crus-galli*) and straw-color flat sedge (*Cyperus strigosus*) in the herbaceous stratum.

The non-wet, roadside habitat is dominated by large barnyard grass and Johnson grass (*Sorghum halepense*) in the herbaceous stratum.

The non-wet, bottomland hardwood forest habitat is dominated sugar-berry (*Celtis laevigata*) in the tree stratum. Red mulberry (*Morus rubra*) and black elder (*Sambucus nigra*) dominate the sapling-shrub stratum. The herbaceous stratum is dominated by long-leaf basket grass (*Oplismenus hirtellus*) and sugar-berry. Japanese honeysuckle (*Lonicera japonica*) dominates the woody vine stratum.

### 4.3 Soils

The survey area is underlain by the following soils (Figure 4):

- a. Ca: Cancienne silt loam, 0 to 1 percent slopes
- b. Cb: Cancienne silty clay loam, 0 to 1 percent slopes
- c. Gr: Gramercy silty clay loam, 0 to 1 percent slopes
- d. Sb: Schriever clay, 0 to 1 percent slopes
- e. TbA: Thibaut clay

All of the above soils are listed in the National Hydric Soils List (NRCS 2015). No hydric soil indicators were observed at DP1, DP2, or DP3.

### 4.4 Questions Pertaining to Regulatory Authority

CK has also addressed the items below as directed in the request for proposal:

1. Identify any bodies of water on or abutting the site and identify the authority with jurisdiction over them.
  - The Mississippi River is located adjacent to the northern property boundary. This feature is under the jurisdiction of the USACE by authority of Section 10 of the Rivers and Harbors Act.
2. Do wetlands and/or other waterways exist on or near the site?
  - By our investigation, there are no Section 404 Wetlands present on the site. Wetland features are under the jurisdiction of the USACE under the authority of Section 404 of the Clean Water Act.
  - There are 4.6 acres of Section 404 Other Waters of the US present on the site. These features are under the jurisdiction of the USACE by authority of Section 404 of the Clean Water Act.
3. If wetlands are present has a Section 404 permit application been submitted to USACE? If yes, provide a copy.
  - To the best of CK's knowledge, no permit application has been submitted to the USACE.
4. If wetlands are present, has the Section 404 permit been received from the USACE?
  - See above.
5. If wetlands are present, have all wetlands on site been mitigated?
  - See above.

## 5.0 CONCLUSIONS

Based on the aforementioned data and field observations, the 557.3-acre survey area contains (Figure 2 and Figure 3):

- 4.6 acres of Section 404 Other Waters of the US
- 0 acres of Section 404 Wetlands

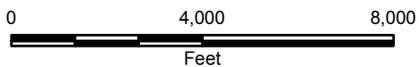
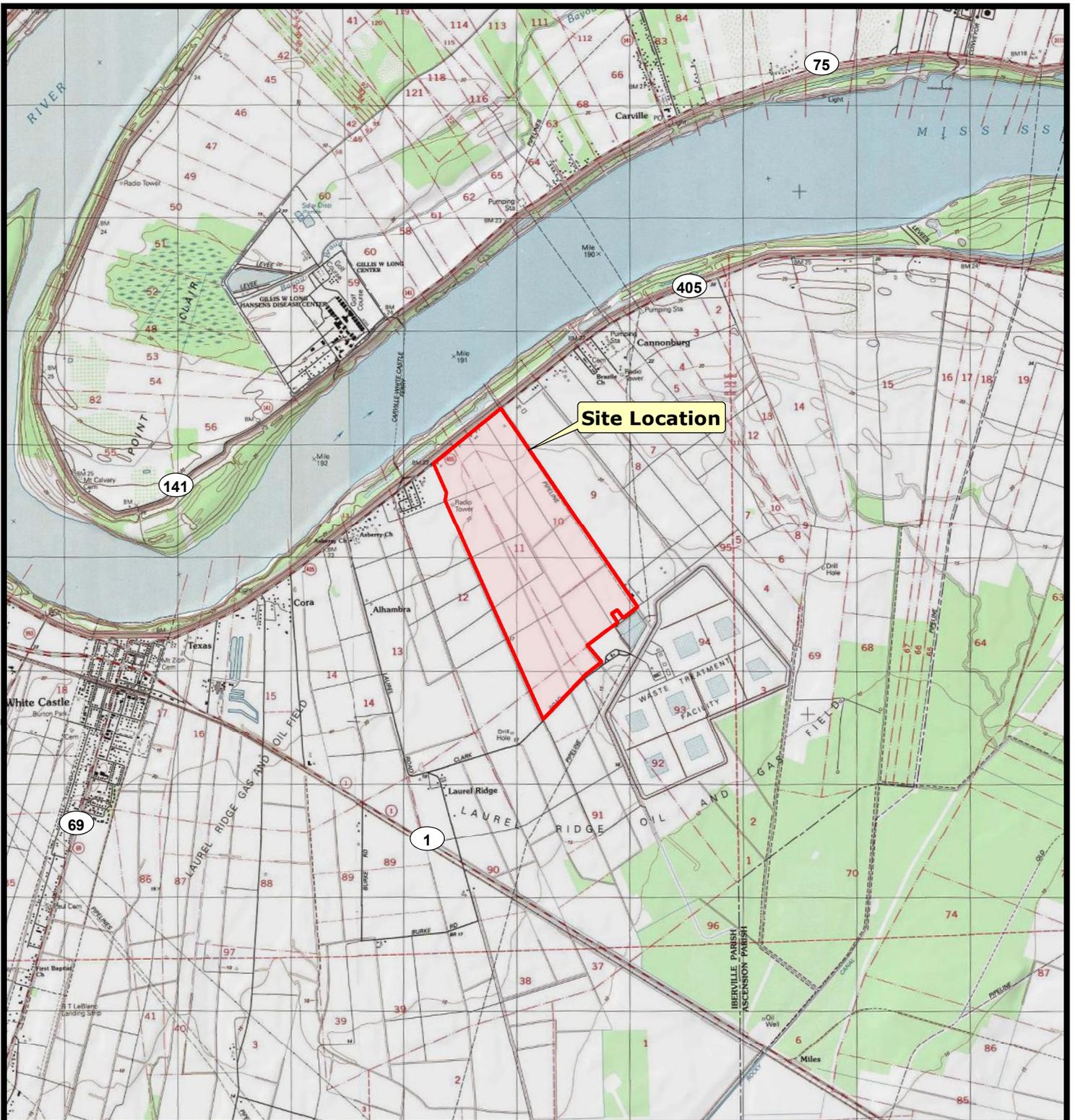
This acreage is influenced by the accuracy of the DGPS unit utilizing real-time corrections and ESRI® ArcMap Version 10.4 drafting software.

**The USACE, under the authority of the Clean Water Act - Section 404 and the Rivers and Harbor Act - Section 10, has the responsibility to make the final determination of the location and extent of jurisdictional wetlands, other waters of the US, and navigable waters on this property. This report represents the opinion of the investigators and should be considered preliminary until final concurrence is obtained from the New Orleans District Army Corps of Engineers office.**

## 6.0 LITERATURE CITED

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## FIGURES



**Baton Rouge Area Chamber**  
Baton Rouge, Louisiana

Belle Grove Plantation Site

## Site Location Map

Iberville Parish

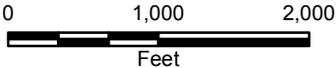
Drawn:	CPL/AM10.4
Checked:	KFW
Approved:	TEW
Date:	09/28/2016
Dwg. No.:	A14253-01

**Figure 1**



**Legend**

- Data Point
- Survey Area (± 557.3 Acres)
- Other Waters of the US (± 4.6 Acres)



Imagery: ESRI World Imagery, 2015 NAIP, Iberville Parish, LA.

**Baton Rouge Area Chamber**  
Baton Rouge, Louisiana

Belle Grove Plantation Site

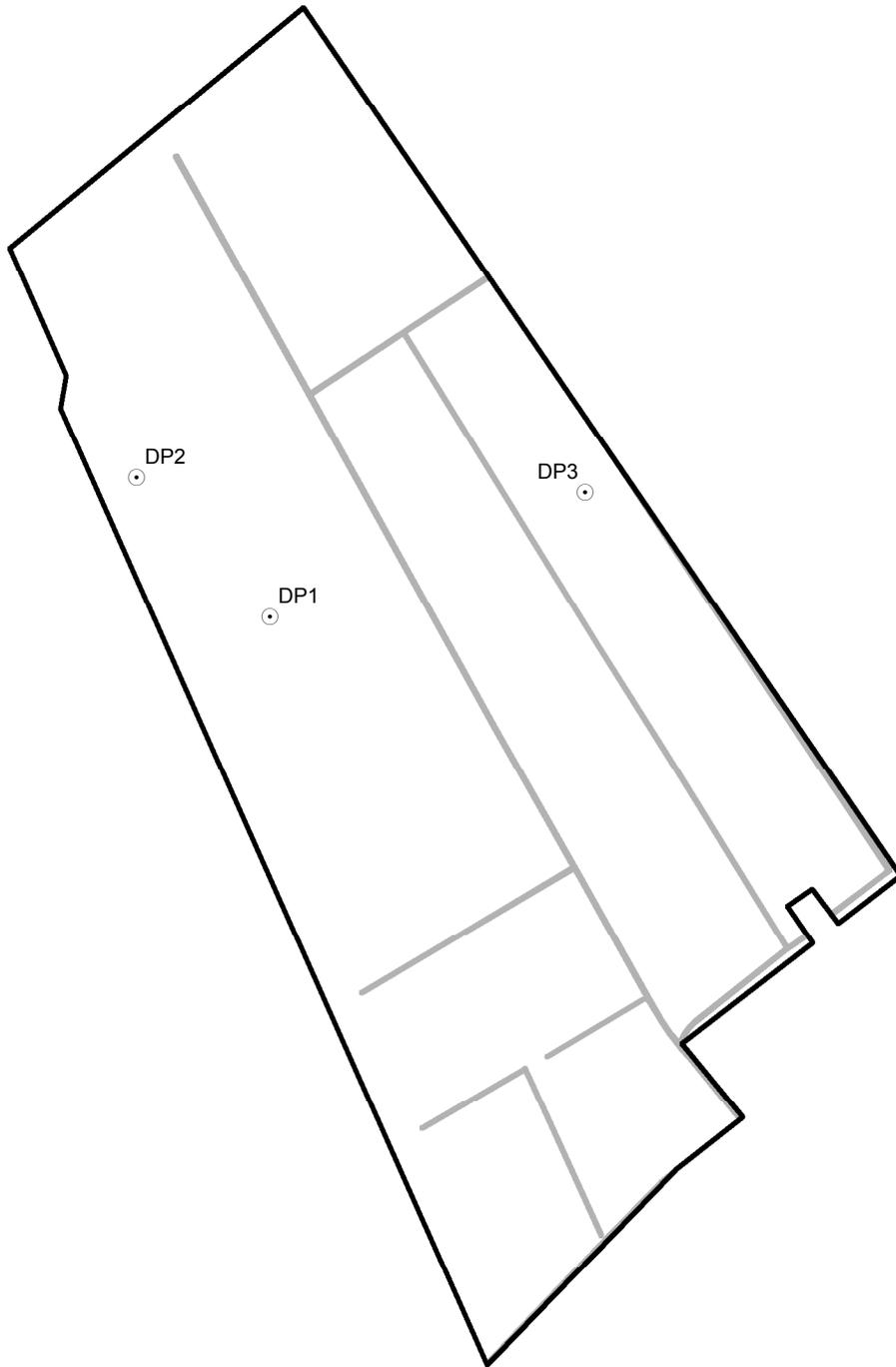
**Wetlands Map**  
(Aerial Imagery Background)

Iberville Parish



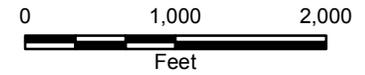
Drawn:	CPL/AM10.4
Checked:	KFW
Approved:	TEW
Date:	10/03/2016
Dwg. No.:	A14253-02

**Figure 2**



**Legend**

- Data Point
- Survey Area (± 557.3 Acres)
- Other Waters of the US (± 4.6 Acres)



**Baton Rouge Area Chamber**  
Baton Rouge, Louisiana

Belle Grove Plantation Site

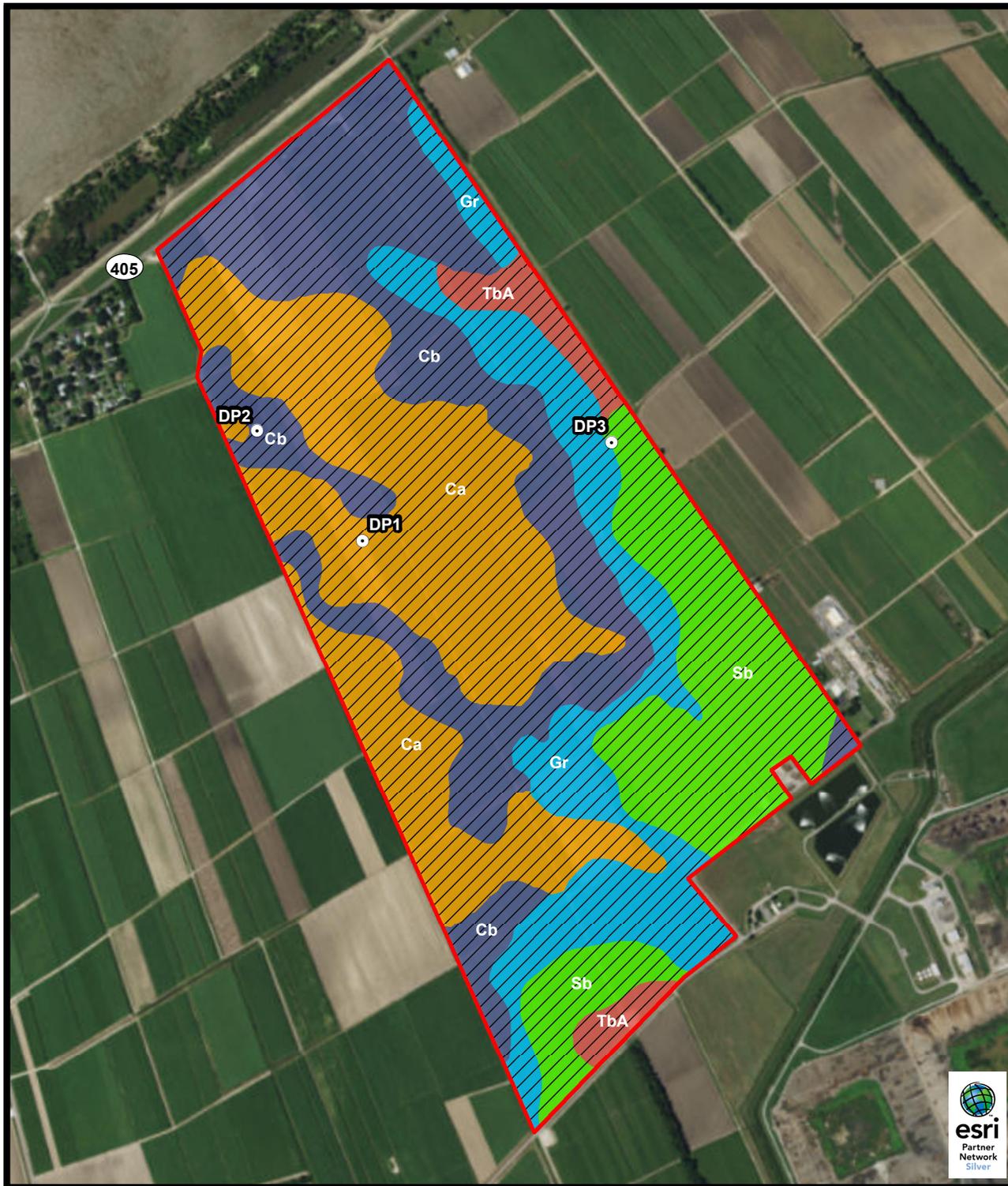
**Wetlands Map**

Iberville Parish



Drawn:	CPL/AM10.4
Checked:	KFW
Approved:	TEW
Date:	10/03/2016
Dwg. No.:	A14253-03

**Figure 3**



**Legend**

- Data Point
- Survey Area (± 557.3 Acres)

**Soil Data**

- Ca - Cancienne silt loam, 0 to 1 percent slopes
- Cb - Cancienne silty clay loam, 0 to 1 percent slopes
- Gr - Gramercy silty clay loam, 0 to 1 percent slopes
- Sb - Schriever clay, 0 to 1 percent slopes
- TbA - Thibaut clay
- ▨ Soils Designed as Hydric



- 1) Imagery: ESRI World Imagery, 2015 NAIP, Iberville Parish, LA.
- 2) Soil data from USDA NRCS Soil Survey Geographic (SSURGO) database for Iberville Parish, LA.
- 3) Hydric soil data from USDA NRCS 2015 National Hydric Soils List.

**Baton Rouge Area Chamber**  
Baton Rouge, Louisiana

Belle Grove Plantation Site

**Soils Map**  
Iberville Parish

**CK ASSOCIATES**  
Environmental Consultants

Drawn:	CPL/AM10.4
Checked:	KFW
Approved:	TEW
Date:	10/03/2016
Dwg. No.:	A14253-04

**Figure 4**



## **ATTACHMENT A**

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

Project/Site Belle Grove Plantation Site City/County: White Castle/Iberville Sampling Date: 9/26/2016  
 Applicant/Owner: Baton Rouge Area Chamber State: Louisiana Sampling Point: DP1  
 Investigator(s): Kale Wetekamm, Cory Leblanc Section, Township, Range: Section 12, Township 10S, Range 13E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): none Slope (%): 0-1  
 Subregion (LRR or MLRA): LRR O Lat: 30°10'49.79"N Long: 91°6'43.39"W Datum: NAD83  
 Soil Map Unit Name Ca: Cancienne silt loam, 0-1% slopes NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? **Yes** (If no, explain in remarks)  
 Are vegetation \_\_\_\_\_, soil \_\_\_\_\_, or hydrology \_\_\_\_\_ significantly disturbed? Are "normal circumstances" present? **Yes**  
 Are vegetation \_\_\_\_\_, soil \_\_\_\_\_, or hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? <u>No</u>	<b>Is the Sampled Area within a Wetland? No</b>
Hydric soil present? <u>No</u>	
Indicators of wetland hydrology present? <u>No</u>	

Remarks:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that ap</u>		<u>Secondary Indicators (minimum of two required)</u>
<u>    </u> Surface Water (A1)	<u>    </u> Aquatic Fauna (B13)	<u>    </u> Surface Soil Cracks (B6)
<u>    </u> High Water Table (A2)	<u>    </u> Marl Deposits (B15) <b>(LRR U)</b>	<u>    </u> Sparsely Vegetated Concave Surface (B8)
<u>    </u> Saturation (A3)	<u>    </u> Hydrogen Sulfide Odor (C1)	<u>    </u> Drainage Patterns (B10)
<u>    </u> Water Marks (B1)	<u>    </u> Oxidized Rhizospheres on Living Roots (C3)	<u>    </u> Dry-Season Water Table (C2)
<u>    </u> Sediment Deposits (B2)	<u>    </u> Presence of Reduced Iron (C4)	<u>    </u> Moss Trim Lines (B16)
<u>    </u> Drift Deposits (B3)	<u>    </u> Recent Iron Reduction in Tilled Soils (C6)	<u>  X</u> Crayfish Burrows (C8)
<u>    </u> Algal Mat or Crust (B4)	<u>    </u> Thin Muck Surface (C7)	<u>    </u> Saturation Visible on Aerial Imagery (C9)
<u>    </u> Iron Deposits (B5)	<u>    </u> Other (Explain in Remarks)	<u>    </u> Geomorphic Position (D2)
<u>    </u> Inundation Visible on Aerial Imagery (B7)		<u>    </u> Shallow Aquitard (D3)
<u>    </u> Water-Stained Leaves (B9)		<u>    </u> FAC-Neutral Test (D5)
		<u>    </u> Sphagnum moss (D8) <b>(LRR T, U)</b>

<b>Field Observations:</b>	<b>Wetland Hydrology Present? No</b>
Surface water present? Yes <u>    </u> No <u>  X</u> Depth (inches): _____	
Water table present? Yes <u>    </u> No <u>  X</u> Depth (inches): _____	
Saturation present? Yes <u>    </u> No <u>  X</u> Depth (inches): _____ (includes capillary fringe)	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** -- Use scientific names of plants.

Sampling Point: DP1

Tree Stratum	(Plot size: 30' x 20')	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Sapling/Shrub Stratum	(Plot size: 30' x 20')	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Herb stratum	(Plot size: 30' x 20')	Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Echinochloa crus-galli</i>	50	Y	FACW
2	<i>Sorghum halepense</i>	25	Y	FACU
3	<i>Saccharum officinarum</i>	15	N	FACU
4	<i>Eleusine indica</i>	15	N	FACU
5	<i>Eragrostis pilosa</i>	2	N	FACU
6				
7				
8				
9				
10				
11				
12				
		107 = Total Cover		
50% of total cover: 53.5		20% of total cover: 21.4		

Woody vine stratum	(Plot size: 30' x 20')	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC:	1 (A)
Total Number of Dominant Species Across all Strata:	2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00% (A/B)

Prevalence Index Worksheet	
Total % Cover of:	
OBL species	0 x 1 = 0
FACW species	50 x 2 = 100
FAC species	0 x 3 = 0
FACU species	57 x 4 = 228
UPL species	0 x 5 = 0
Column totals	107 (A) 328 (B)
Prevalence Index = B/A = 3.07	

**Hydrophytic Vegetation Indicators:**

- Rapid test for hydrophytic vegetation
- Dominance test is >50%
- Prevalence index is ≤3.0\*
- Problematic hydrophytic vegetation\* (explain)

\*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Four Vegetation Strata**

**Tree-** Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.

**Sapling/Shrub -** Woody plants, excluding vines, less than 3 in. DBH and greater than 3.26 ft (1m) tall

**Herb -** All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine -** All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** **No**

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

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 4/2	100					silty clay	soil compacted below 10"

\*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.      \*\*Location: PL = Pore Lining, M = Matrix

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b></p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b></p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b></p>	<p><b>Indicators for Problematic Hydric Soils:</b></p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b></p> <p><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b></p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Marl (F10) <b>(LRR U)</b></p> <p><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b></p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b></p> <p><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b></p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b></p> <p><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b></p>	<p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b></p> <p><input type="checkbox"/> Reduced Vertic(F18) <b>(outside MLRA 150A,B)</b></p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b></p> <p><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 153B)</b></p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p style="font-size: small; margin-top: 10px;">*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p style="padding-left: 40px;">Depth (inches): _____</p>	<p><b>Hydric Soil Present?      No</b></p>
--	--

Remarks:



**Vegetation at DP1 facing north taken 9/26/2016**



**Vegetation at DP1 facing east taken 9/26/2016**



**Vegetation at DP1 facing south taken 9/26/2016**



**Vegetation at DP1 facing west taken 9/26/2016**



Soil profile at DP1 taken 9/26/2016

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

Project/Site Belle Grove Plantation Site City/County: White Castle/Iberville Sampling Date: 9/26/2016  
 Applicant/Owner: Baton Rouge Area Chamber State: Louisiana Sampling Point: DP2  
 Investigator(s): Kale Wetekamm, Cory Leblanc Section, Township, Range: Section 12, Township 10S, Range 13E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): convex Slope (%): 1-3  
 Subregion (LRR or MLRA): LRR O Lat: 30°10'59.16"N Long: 91°6'53.43"W Datum: NAD83  
 Soil Map Unit Name Cb: Cancienne silty clay loam, 0-1% slopes NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? **Yes** (If no, explain in remarks)  
 Are vegetation \_\_\_\_\_, soil \_\_\_\_\_, or hydrology \_\_\_\_\_ significantly disturbed? Are "normal circumstances" present? **Yes**  
 Are vegetation \_\_\_\_\_, soil \_\_\_\_\_, or hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? <u>Yes</u>	<b>Is the Sampled Area within a Wetland? No</b>
Hydric soil present? <u>No</u>	
Indicators of wetland hydrology present? <u>No</u>	

Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that ap		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b>	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>

<b>Field Observations:</b>	<b>Wetland Hydrology Present? No</b>
Surface water present? Yes _____ No <u>X</u> Depth (inches): _____	
Water table present? Yes _____ No <u>X</u> Depth (inches): _____	
Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 FAC-Neutral Test: 2:1

**VEGETATION** -- Use scientific names of plants.

Sampling Point: DP2

Tree Stratum (Plot size: 30 feet)		Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Celtis laevigata</i>	85	Y	FACW
2	<i>Morus rubra</i>	15	N	FACU
3	<i>Quercus nigra</i>	10	N	FAC
4				
5				
6				
7				
8				
		110	= Total Cover	
50% of total cover: 55		20% of total cover: 22		

**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: 83.33% (A/B)

Sapling/Shrub Stratum (Plot size: 30 feet)		Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Morus rubra</i>	50	Y	FACU
2	<i>Sambucus nigra</i>	30	Y	FACW
3	<i>Ligustrum lucidum</i>	20	N	UPL
4	<i>Ligustrum sinense</i>	15	N	FAC
5	<i>Ulmus rubra</i>	5	N	FAC
6				
7				
8				
		120	= Total Cover	
50% of total cover: 60		20% of total cover: 24		

**Prevalence Index Worksheet**

Total % Cover of:

OBL species          x 1 = 0

FACW species          x 2 = 0

FAC species          x 3 = 0

FACU species          x 4 = 0

UPL species          x 5 = 0

Column totals          (A) 0 (B)

Prevalence Index = B/A =         

Herb stratum (Plot size: 30 feet)		Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Oplismenus hirtellus</i>	35	Y	FAC
2	<i>Celtis laevigata</i>	20	Y	FACW
3	<i>Lantana urticoides</i>	10	N	FACU
4	<i>Sambucus nigra</i>	10	N	FACW
5	<i>Toxicodendron radicans</i>	5	N	FAC
6				
7				
8				
9				
10				
11				
12				
		80	= Total Cover	
50% of total cover: 40		20% of total cover: 16		

**Hydrophytic Vegetation Indicators:**

         Rapid test for hydrophytic vegetation

Dominance test is >50%

         Prevalence index is ≤3.0\*

         Problematic hydrophytic vegetation\* (explain)

\*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Woody vine stratum (Plot size: 30 feet)		Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Lonicera japonica</i>	15	Y	FAC
2				
3				
4				
5				
		15	= Total Cover	
50% of total cover: 7.5		20% of total cover: 3		

**Definitions of Four Vegetation Strata**

**Tree-** Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.

**Sapling/Shrub -** Woody plants, excluding vines, less than 3 in. DBH and greater than 3.26 ft (1m) tall

**Herb -** All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine -** All woody vines, regardless of height.

**Hydrophytic Vegetation Present? Yes**

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

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 4/2	100					silty clay	
6-8	10YR 3/1	100					silty clay	
8-10	10YR 4/2	90	WHITE 10YR/1	10			silty clay	layer of white matter
10-16	10YR 4/2	100					silty clay	

\*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.      \*\*Location: PL = Pore Lining, M = Matrix

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b></p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b></p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b></p>	<p><input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b></p> <p><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b></p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Marl (F10) <b>(LRR U)</b></p> <p><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b></p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b></p> <p><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b></p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b></p> <p><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b></p>	<p><b>Indicators for Problematic Hydric Soils:</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b></p> <p><input type="checkbox"/> Reduced Vertic(F18) <b>(outside MLRA 150A,B)</b></p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b></p> <p><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 153B)</b></p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p style="font-size: small; margin-top: 10px;">*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soil Present?      No</b></p>
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Remarks:



**Vegetation at DP2 facing north taken 9/26/2016**



**Vegetation at DP2 facing east taken 9/26/2016**



**Vegetation at DP2 facing south taken 9/26/2016**



**Vegetation at DP2 facing west taken 9/26/2016**



Soil profile at DP2 taken 9/26/2016

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

Project/Site Belle Grove Plantation Site City/County: White Castle/Iberville Sampling Date: 9/26/2016  
 Applicant/Owner: Baton Rouge Area Chamber State: Louisiana Sampling Point: DP3  
 Investigator(s): Kale Wetekamm, Cory Leblanc Section, Township, Range: Section 10, Township 10S, Range 13E  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): none Slope (%): 0-1  
 Subregion (LRR or MLRA): LRR O Lat: 30°10'57.59"N Long: 91°6'19.39"W Datum: NAD83  
 Soil Map Unit Name Cb: Cancienne silty clay loam, 0-1% slopes NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? **Yes** (If no, explain in remarks)  
 Are vegetation \_\_\_\_\_, soil \_\_\_\_\_, or hydrology \_\_\_\_\_ significantly disturbed? Are "normal circumstances" present? **Yes**  
 Are vegetation \_\_\_\_\_, soil \_\_\_\_\_, or hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? <u>No</u>	<b>Is the Sampled Area within a Wetland? No</b>
Hydric soil present? <u>No</u>	
Indicators of wetland hydrology present? <u>No</u>	

Remarks:  

cane field

**HYDROLOGY**

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that ap	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) <b>(LRR U)</b>	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) <b>(LRR T, U)</b>

<b>Field Observations:</b>	<b>Wetland Hydrology Present? No</b>
Surface water present? Yes _____ No <u>X</u> Depth (inches): _____	
Water table present? Yes _____ No <u>X</u> Depth (inches): _____	
Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 FAC-Neutral Test: 2:1

**VEGETATION** -- Use scientific names of plants.

Sampling Point: DP2

Tree Stratum	(Plot size: 30 feet )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Sapling/Shrub Stratum	(Plot size: 30 feet )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
8				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

Herb stratum	(Plot size: 30 feet )	Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Saccharum officinarum</i>	90	Y	FACU
2	<i>Echinochloa crus-galli</i>	15	N	FACW
3	<i>Cyperus strigosus</i>	5	N	FACW
4				
5				
6				
7				
8				
9				
10				
11				
12				
		110 = Total Cover		
50% of total cover: 55		20% of total cover: 22		

Woody vine stratum	(Plot size: 30 feet )	Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
		0 = Total Cover		
50% of total cover: 0		20% of total cover: 0		

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column totals (A) 0 (B) 0

Prevalence Index = B/A = 0

**Hydrophytic Vegetation Indicators:**

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0\*

Problematic hydrophytic vegetation\* (explain)

\*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Four Vegetation Strata**

**Tree-** Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.

**Sapling/Shrub -** Woody plants, excluding vines, less than 3 in. DBH and greater than 3.26 ft (1m) tall

**Herb -** All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine -** All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** **No**

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

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 4/2	50	10YR 4/4	5	C	M	clay	
	10YR 4/1	45					clay	

\*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains.      \*\*Location: PL = Pore Lining, M = Matrix

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Organic Bodies (A6) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> 5 cm Mucky Mineral (A7) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> Muck Presence (A8) <b>(LRR U)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR P, T)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 150A)</b></p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR O, S)</b></p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) <b>(LRR P, S, T, U)</b></p>	<p><input type="checkbox"/> Polyvalue Below Surface (S8) <b>(LRR S, T, U)</b></p> <p><input type="checkbox"/> Thin Dark Surface (S9) <b>(LRR S, T, U)</b></p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Marl (F10) <b>(LRR U)</b></p> <p><input type="checkbox"/> Depleted Ochric (F11) <b>(MLRA 151)</b></p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR O, P, T)</b></p> <p><input type="checkbox"/> Umbric Surface (F13) <b>(LRR P, T, U)</b></p> <p><input type="checkbox"/> Delta Ochric (F17) <b>(MLRA 151)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18) <b>(MLRA 150A, 150B)</b></p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 149A)</b></p> <p><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 149A, 153C, 153D)</b></p>	<p><b>Indicators for Problematic Hydric Soils:</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR O)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR S)</b></p> <p><input type="checkbox"/> Reduced Vertic(F18) <b>(outside MLRA 150A,B)</b></p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(LRR P, S, T)</b></p> <p><input type="checkbox"/> Anomalous Bright Loamy Soils (F20) <b>(MLRA 153B)</b></p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p style="font-size: small; margin-top: 10px;">*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p style="padding-left: 40px;">Depth (inches): _____</p>	<p><b>Hydric Soil Present?      No</b></p>
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Remarks:



**Vegetation at DP3 facing north taken 9/26/2016**



**Vegetation at DP3 facing east taken 9/26/2016**



**Vegetation at DP3 facing south taken 9/26/2016**



**Vegetation at DP3 facing west taken 9/26/2016**



Soil profile at DP3 taken 9/26/2016